

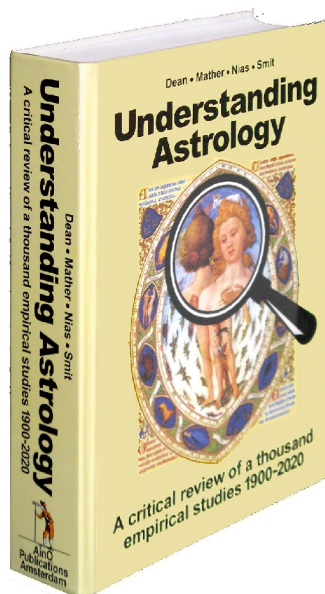
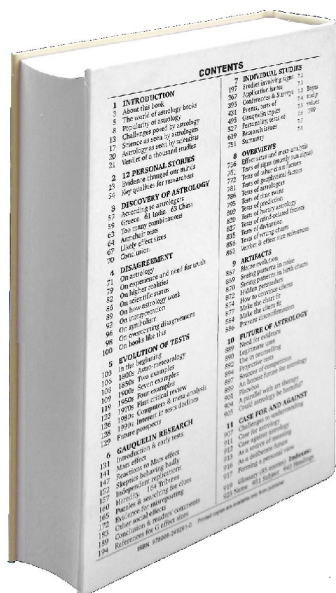
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We welcome your comments



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Total 524

* Includes all studies involving signs regardless of other content

** Includes studies not fitting any previous section

Summaries
In Chapter 7
N = 524
(some involve more than one study)

Time Period	Number of Summaries
1911-40	13
1941-80	15
1981-80	87
1981-00	276
2001-20	133

Median 1989-90

Studies are grouped under the above headings and are cross-referenced if important. **Summaries** average 700 words (nearly a page). **Topics** are necessarily grouped by study and date, which frustrates formal indexing but we try anyway. For computer searching see page 948 at the end of subject index. **Comment** adds information where this might be useful. We start with early history:

Wilhelm Knappich, *Geschichte der Astrologie* [History of Astrology] 1967:314-317. A famous and reliable work from which this account (of how statistical research began in France, then Germany and Switzerland) has been abridged.

Similar studies have been made by German researchers such as Schwab, (1878-1946) and von Klöckler (1896-1950). In his 1927 book *Astrologie als Erfahrungswissenschaft* [Astrology as an



empirical science] von Klöckler studied accidents, suicides, criminals, painters, poets, and lawyers using Choissard's methods. He stressed that his results were provisional and should not be seen as guaranteed. In his journal *Sterne und Mensch* (1925-1934) [Stars and man] improved statistical methods were published in rapid succession, eg by Dr Kritzing, Dr Steiger, and Dr Manher, who collectively showed that the work of Choissard and his successors could be explained by chance and was therefore inconclusive.

Cover of *Stars and Man* for June 1926. The sub-title is *Journal of Astrology as Science and Philosophy*. Editor Baron von Klöckler. "Obtainable through all post offices and bookshops or direct from the publisher", an availability not matched by any modern journal. The pictures on the cover illustrate an article on links between the Ascendant and appearance (left Taurus, right Gemini, compare the latter with 8.3.6). The text at the bottom begins an article on self control in the birth chart.

The Swiss insurance statistician Karl E Krafft (1900-1945) made many further statistical analyses in his 1939 book *Traité d'astro-biologie*. He concluded that tradition should be ignored in favour of working with more secure foundations. Later the French psychologist and statistician Michel Gauquelin (1928-1991), in his 1955 book *L'influence des astres*, discovered more errors in the work of his predecessors and in traditional claims, but found new relationships not yet explainable by such errors. In 1960, after an unfortunate attempt to analyse the statistics of 480 married couples, the Swiss psychologist Carl Jung concluded that charts have a complex structure whose analysis by statistical methods may never result in genuinely useful results.

Thank you Wilhelm Knappich. We now begin our summaries of individual studies.

7.1 SIGNS Studies involving signs appear here regardless of other content

7.1.1928.1 Correction of sign frequencies

HH Kritzinger, *Sterne und Mensch* 4(4), 61-64, 1928 and 4(5), 80-83, 1928.

During 1920-1935, astrologers in Germany formed the most vigorous astrological movement of modern times. At least 400 books and pamphlets were published, at least half a dozen specialist journals existed with a monthly circulation of up to 6000 copies, and there was a permanent war between practitioners of old and new schools (Ellic Howe, *Urania's Children* 1967). Some newcomers were academics like astronomer Dr Kritzinger who investigated astrology along scientific lines. Here he looks at correcting sign totals for astronomical and demographic artifacts, and the significance of observations. Although routine today, in 1928 it was pioneering.

Statistics are perhaps the only way of distinguishing astrological influences from chance. I cannot decide who first applied statistics, perhaps Jerome Cardan. In our own time we have work by AG Trent in England, Choissard in France, and Schwab and von Klöckler in Germany. I start with simple examples. First, the distribution of Mars in signs in Alan Leo's *1001 Horoscopes*. The mean count is 82.6 with a variation of 17.0, or 21%, which is close to twice the eccentricity ($2e=19\%$). The minimum is around 23 Aquarius while the perihelion of Mars (closest point to the Sun) is at 4 Pisces. So the results show the effect of Mars's orbit.

Second, the distribution of Sun signs for the 2817 musicians given by Krafft. The mean count is 234.6 with a variation of 29.4, or 12.5%. Fitting a sine wave to the sign frequencies gives a wave whose amplitude = $234.6 + 29.4 \sin(L+114^\circ)$ where L is the Sun's longitude. The amplitude is maximum (+1) at $L = 336^\circ$ and minimum (-1) at $L = 156^\circ$. But the Sun is closest to Earth at 281° and farthest at 101° . Neither is consistent with the above, which indicates the presence of determining factors other than the eccentricity of the Earth's orbit.

The author then shows how astronomical and demographic corrections (called "statistical homogenisation") improves the fit. For example the stay of the Sun in each sign is shortest in Cancer and longest in Capricorn, so if the birth rate is constant, there will be more Capricorns than Cancers. Which shows the importance of statistical corrections. Our task is now to do this for individual planets and for the Ascendant. [The result is several tables.] He continues:

In Part 2, I point out that the counts given by Krafft, von Klöckler and Schwab lead to questions about how much of an observed variation might be accidental. The standard deviation sd in a series of N experiments is given by $\sqrt{Np(p-1)}$ where p is the probability of the factor in question. For example, ignoring corrections, the probability of a given sign is $1/12$, so for $N=100$ we get

$$\text{standard deviation } sd = \sqrt{(100 \times 1/12 \times 11/12)} = 10/12 \sqrt{11} = 2.8$$

The value of deviation/ sd determines the probability p of the deviation. Thus if deviation/ $sd = 1.96$ then $p=0.05$ two-tailed [two-tailed means the direction of the deviation is not specified].

For example von Klöckler found an apparently high frequency of Moon in Leo for deceased children, but my table shows it is within chance. The same applies to his accidents, fraudsters, and thieves. In each case the deviations from chance are small. But for astrology to survive we need big deviations. **Comment** Today this need is even more urgent but is still unfulfilled.

7.1.1930.1 What the stars foretell

RH Naylor. Weekly articles in the UK *Sunday Express* 1930-1940 that ultimately led to newspaper sun sign columns. But popular astrology forecasts had appeared in almanacs and books well before they appeared in newspapers. For

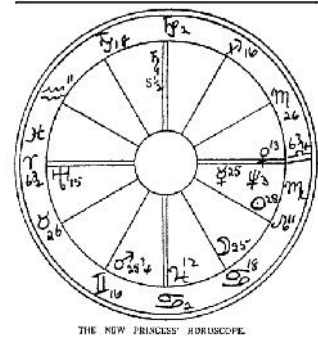


example each year since at least 1850 Raphael's *Prophetic Almanac* had given birthday forecasts for every day (eg 9 September 1889 "Great troubles await thee, thy business will fail") including the fate of the new-born ("a child born on this day will be unfortunate"). And in the 1910s and 1920s people could turn to Cheiro's book

When were you born. But popular forecasts in the UK did not take off until Naylor (standing in for Cheiro) provided the above article about the royal birth of Princess Margaret Rose for the UK's *Sunday Express* of 24 August 1930:11.

At the time Naylor (1889-1952) was an established astrologer and a committee member of the Astrological Lodge. His article predicted that Princess Margaret's health will be "fairly good", and her life will be "eventful", which for royalty seems safe enough. As for her character:

Everybody is interested in the future. Can it be told by the stars? Readers of the "Sunday Express" will be able to judge for themselves after reading the following article, which tells you just what is expected to happen during the remainder of the month. The article is written by Mr. R. H. Naylor, collaborator with the famous "Cheiro", and part-author of "Cheiro's Year Book" and other astrological works. Mr. Naylor has included in the article an extremely interesting horoscope—in obscurity of the horoscope of the day of a person's birth—that the Princess of York's daughter, born on Thursday morning.



Uranus [conjunct the Ascendant orb 8°] will give the Princess extreme originality of mind, an unconventional vein, a keen interest in everything that is up to date, original and novel. She will insist on seeing life at an early age. Saturn, on the mid-heaven of the horoscope [orb 3.5°], will give the child something of her father's intense devotion to duty; her whole life will be spent in the conscientious service of her family and country. Venus, which is setting in the figure [conjunct the Descendant orb 6°], will come a vivid emotional nature, which insists on following the dictates of the heart rather than those of the head, but this royal child, when she reaches maturity, will be essentially a woman of the New Age.

All were more or less standard interpretations of a prominent Uranus, Saturn and Venus. But were they accurate? Yes and No. According to Sarah Bradford's *Elizabeth: A Biography of Her Majesty The Queen* 1996, Princess Margaret was extraverted, capricious, naughty, the most difficult child her governesses had ever taught, a spoilt darling of her father, a teenage attention-seeker, often selfish, hard and wild, and finally a headstrong

divorcée with several romantic liaisons. According to Wikipedia she was a heavy smoker, later a heavy drinker, and her health deteriorated with at least three strokes during the two decades before her death in 2002 at age 71.

Naylor's article included predictions for certain August birthdates. It created so much interest that he was asked to provide a further article with predictions for the whole of September, which appeared on 31 August 1930 ("Sept.2 – Danger of accidents. Good for business. Travel likely"). He included two political forecasts ("There will be great fluctuations in the markets behind all food supplies, and as a result our food will cost us rather less"). In his next article on 5 October 1930 a million readers read more predictions including this one:

Earthquakes will occur, mostly near deep-sea levels, and affecting peninsulas, in the autumn quarter of 1930. They may not actually occur in October – though from the 8th to the 15th is a real danger point – but they will be exceedingly likely in November or December. British aircraft will be in danger about the same date (p.21).



The following day newspapers reported that the great British airship R101 had collided with a hilltop in a storm 65 km north of Paris at 2:05 am on 5 October 1930. There were 46 people dead and 8 survivors. Newspapers showed pictures of terrible wreckage. On 12 October 1930 the *Sunday Express* editor John Gordon commented as follows:

The Sunday Express has received so many letters from readers concerning the recent extraordinary predictions of Mr R. H. Naylor that arrangements have now been made for him to contribute an exclusive weekly article. This article will interpret the astrological portents likely to influence national and world events each week. He will give warning advice to City men, racing men, and politicians, and will, in addition, tell you what fate may have in store for you if your birthday should fall during the week (p.19).

The following week Naylor said this about his extraordinary prediction:

It can be proved that, whenever the new moon or full moon falls at a certain angle to the planet Uranus, aircraft accidents, electrical storms, and sometimes earthquakes follow. Now ... the configuration referred to [Full Moon opposition Uranus] occurred on October 7; the destruction of the R101, therefore, prematurely fulfilled the indication.

But the hit is ambiguous. Naylor's forecast said 8-15 October, during which time the British press reported no aircraft crashes, no electrical storms, and no earthquakes. At crash time the Moon was 33 degrees from opposition, unacceptably wide by modern standards. Later studies of air disasters have found no link with the Moon and Uranus. So Naylor's "hit" was a fluke.

Thus began a weekly column called *What The Stars Foretell* that generally occupied about a sixth of a page in a 24-page newspaper, with 20-25% devoted to mundane forecasts, and the rest to birthday forecasts and a general forecast for each weekday, including the best days for buying, selling, entertaining, and playing sports and games. The only reference to sun signs began in 1935 when brief delineations of the current sun sign were introduced each month under the heading *Astrological Who's Who*. In due course:

Naylor and his horoscopes became a power in the land. If he said that Monday was a bad day for buying, then the buyers of more than one West End store waited for the stars to become more propitious. Gradually, of course, every paper published a horoscope and you paid your money and bought or sold from Monday to Friday according to which prophet you followed (Arthur Christiansen, responsible for first hiring Naylor, *Headlines all my life* 1961:65).

In 1933 *The People* started a rival column *Plan with the Planets* written by Edward Lyndoe.



Left: Richard Harold Naylor (1889-1952). Before the first World War, and before he became a famous astrologer, Naylor had his own engineering business. His wife was Phyllis Naylor (b1900) author of *Astrology: An Historical Examination* 1967.

Right: Edward Lyndoe (1901-1982). Lyndoe used Morinus houses in his *Everyman's Astrology* 1959 because a single table covered all locations, but he was the only well-known astrologer to do so (Morinus houses are equal divisions of the equator but the Asc and MC rarely coincide with a house cusp, which is why few astrologers used them). Pictures are from Louis MacNeice, *Astrology* 1964:204-205.

By 1936 sun sign forecasts were appearing in a majority of UK newspapers. Maurice Barbanell, editor of the spiritualist newspaper *Psychic News*, was upset because spiritualists had been arrested for fortune telling, yet newspapers could apparently do so with impunity. So he took Naylor to court on a charge of telling fortunes. The *Sunday Express* played safe and suspended Naylor's column. After lively public discussion about astrology, and whether the BBC's weather forecasts were equally guilty, the judge ruled in Naylor's favour, commenting:

I have come to the conclusion that the statements in Mr Naylor's article are of such a vague and general character that there is nothing that can be said to amount to the telling or professing to tell, any person's future so as to come within the terms of Section 4 of the Vagrancy Act of 1824 (quoted by Farnell, *Flirting with the Zodiac* 2007:147).

Barbanell appealed and lost. Naylor's column was reinstated. But in 1939 he assured *Sunday Express* readers "Hitler's horoscope is not a war-horoscope". His rival Edward Lyndoe of *The People* agreed: "I see absolutely no signs of a Great War during 1939 (1 January 1939). "The Nazis attacking Britain? Don't make me laugh! Not a sign in my charts" (25 June). "Hitler will

not do it!" (27 August). Then, ingeniously, after war was declared, "A madman against the stars!" (3 September).

But this comment from Edward Lyndoe (part of his response to a query we made in 1981) reveals how war predictions were censored by the newspaper in an attempt to boost public morale.

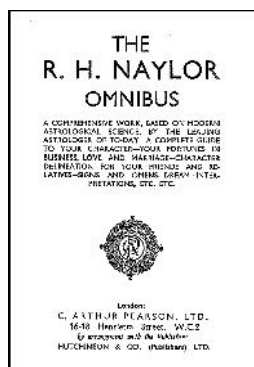
On 26 May 1940 the *Sunday Express* took the obvious next step:

HYTHE: 1 September 1981.

Concerning references to newspapers, these are uninformed to a large extent. Most war predictions were censored. I am credited with saying there would be no war. What I actually wrote at the time was, 'Unless Hitler is insane there will be no war. If he is sane he knows Germany could not win, much less invade these islands.' Another case of politicized subbing, to avoid public panic presumably. When my prediction that Russia would be invaded slipped through I was howled at for my pains.

Yours most sincerely,

Edward Lyndoe



We are living in tense, grave days. The *Sunday Express* believes that the light, popular entertainment of normal times is out of place now. For that reason it has decided to discontinue the weekly article of astrological predictions. [from the editorial]

Nevertheless Naylor's daily readings lived on in popular compilations:

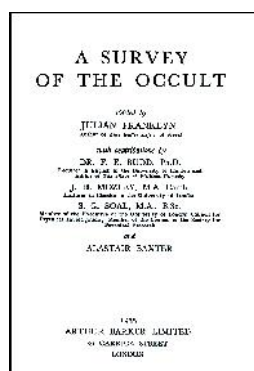
The readings have been built up from notes compiled during a lifelong examination of tens of thousands of cases, and I venture to suggest, will be found very near the mark in the majority of instances (*The R. H. Naylor Omnibus*, pictured, c.1935, p.231).

7.1.1933.1 Sun signs and 109 suicides

F Schwab, *Sternenmächte und Mensch: Statistische und experimentelle Beiträge zur modernen Astrologie* [Starpower and Mankind: Statistical and experimental contributions to modern astrology] 1933:170-171. Like von Klöckler, Schwab was a Dr med, and both were pioneers in applying Choisonard's methods in Germany, in this case to suicide.

In suicide we must consider not only character but also fate. The signs most eligible for spiritual struggle and inner discord are especially Scorpio, then the fiery and watery signs. Least eligible are the airy (sanguine) signs. For 109 suicides obtained from a Berlin registry office, the signs most occupied by the Sun through Saturn were Sagittarius (90) and Leo (70) – two fire signs – vs a mean of $7 \times 109 / 12 = 64$. It is quite striking how Sagittarius is preferred to hysterical signs, since the latter are too volatile to take life. Earlier [for soldiers] we saw how Sagittarius has a strong sense of personality that cannot bear disgrace. So Astrology tells us whether suicide is committed with courage or cowardice. Leo is well-known for courage, determination, and rapid decisiveness, which applies to army officers as well as to suicides. If we have Sagittarius or Leo we have the ideal conditions for an army officer, and for a suicide.

Comment Schwab is showing how easy it is to fit any symbolism to any result. But the same applies to any observer of small samples. Thus Charles Carter argues for *earth signs* and suicide (*An Encyclopaedia of Psychological Astrology* 1954:172), while Henri Gouchon says it is often an *8th house* matter (*Dictionnaire Astrologique* 1975:93). In due course all such claims were overturned by Nona Press's 1977 computerised study, see 7.4.1977.3.



7.1.1935.1 The trouble with sun signs

Julian Franklyn (ed). *A Survey of the Occult* 1935. "There are several encyclopaedias of the occult, but there has existed none that is abreast of modern science and modern psychology: this is the gap the publishers have aimed to fill". The long section on astrology (5300 words pp.36-45) is by Franklyn and presents "the case for enlightenment". It is of interest because written five years after Naylor's column began in the *Sunday Express*.

Franklyn (1899-1970) begins with two conflicting views of astrology:

The astrologers term astrology "the soul of astronomy". The astronomers describe astrology as "baseless nonsense". Both are correct; but they are by no means good friends about the matter – probably because the astronomers experienced so much difficulty in shaking the astrologers' superstitions out of their science. In fact, they had barely succeeded by the year AD 1600 (p.36).

He notes that the untrained human mind argues *post hoc ergo propter hoc* (after that, therefore because of that) (so a link exists), a fallacy on which all superstition is based. For instance:

The stars emit a lustre, so do metals; hence protohistoric man, knowing of seven metals and seven planets, saw a connection that did not exist. He equated gold to the Sun, silver to the Moon, iron to Mars, quicksilver to Mercury, tin to Jupiter, copper to Venus, and lead to Saturn, using the same cryptic symbol to designate both the metal and the planet; thus every alchemist needed to be an astrologer (p.37). [His section on alchemy is even longer pp. 2-34]

He then gives a long description of astrological signs, houses, planets, including physical facts:

of a kind that astrologers do not deny, but regard as matters that distract student's attention (p.40).

Followed by a long historical survey (including prominent names) which no astrologer today might disagree with. In due course the 18th century ended up as a battleground of handbills, the 19th was more respectable, but the 20th century (when he is writing his survey):

has regressed into a state of mental puerility so far as astrology is concerned, and there are now more firm believers

than there were a century ago. No mid-Victorian newspaper, even though published on Sunday, would have dared devote a page to astrological matters, as our contemporary press, to its shame, does (p.45).

He ends by pointing out that the most common type of horoscope is the nativity:

To construct this, the astrologer should know the exact hour of birth, yet nowadays they unblushingly cast them per post for the sum of five shillings, without knowing anything more accurate than the day; ... such laxity savours very strongly of common fraud; for no conscientious astrologer who really believed in stellar influence (no matter how mistakenly) could possibly work on such slender data (p.45).

Comment And that is the trouble. Forty years later a famous controversy about sun sign forecasts erupted within the UK Astrological Association, much of it sparked by Roger Elliot, the *TV Times* sun sign columnist, who was also the AA's Promotions Director (Town vs Gown, *Astrological Journal* 15(3). 21-23, 1973). AA President Charles Harvey stressed that forecasts:

may offer a choice of 12 thoughts for the day but as astrology they are an offence to the intelligence of even the most modestly endowed. ... To couple and underpin such nonsense with astrology is not only a pernicious encouragement of superstition and neurosis but also a corruption and denial of astrology's great power to increase individual awareness and liberate the human spirit from arbitrary values, pressures and exploitation" (*Ibid* 15(4), 38-40, 1973).

But to no avail. The shouting match continued in each issue for nearly three years with writers of columns claiming that sun signs were better than nothing and might lead to better things. Since then the same trouble has regularly resurfaced worldwide without resolution. But what is wrong? Why should it be happening? Look at it this way: money 1, astrology 0.

7.1.1937.1 Misreporting detected in 73,029 US births

Carl Payne Tobey. Research. *American Astrology* October 1936:27, February 1937:21, March 1937:23. Includes early season-of-birth effects uncovered by Ellsworth Huntington (*Season of Birth* 1938, *Mainsprings of Civilisation* 1945).



Carl Payne Tobey (1902-1980) was a US research astrologer who wanted to make astrology more scientific by applying mathematics and statistics. He accepted the existence of psychic powers (and UFOs) and was research director for Llewellyn Publications. He collected many thousands of US birth data mostly 1850-1900 and found that the most common birth date was 1 January (Sun in 11° CP, or 10° CP after 1900). For example the observed daily totals for 29 December through 4 January were:

December/January >>	29	30	31	1	2	3	4
5004 Authors	?	10	19	28	16	7	?
6318 Bankers	14	10	5	26	14	22	15
7012 Clergymen	21	15	16	29	19	16	17
6877 Doctors	18	17	24	33	15	28	19
14781 Engineers	46	34	43	48	29	46	43
5363 Industrialists	14	10	10	19	17	9	16
27674 Who's Who 1929	?	47	72	109	74	67	?
73029 Total	212	143	189	292	184	195	197
% difference from mean	+5	-29	-6	+45	-9	-3	-2

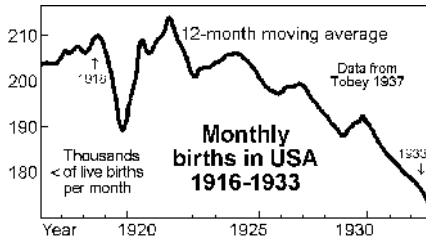
Mean 201.7 sd 45.2

After correction for the variation in Sun's speed, the 1 January total was the highest daily degree total in the entire year for most of the above samples. The same tendency appears among Bradley's 2492 US clergymen (*Profession and Birthdate* 1950 with data from *Who's Who in America* 1926-1927) but not among 13,878 UK births (2875 artists, 1974 clergymen, 7302 doctors, 710 judges, 977 nonagenarians, data from Firebrace et al, *Astrological Journal* 2(3), 15-20, 1960 and Addey, personal communications 1976-1977)

Tobey also found a tendency for peaks to occur on 25 December and 4 July, which together with 1 January are the most important national festival days in the USA. A 4 July peak also appears in Bradley's clergymen and a 25 December peak in each of the component sets of the above UK data. The 25 December peak for the total of 13,878 UK births was as pronounced as

the US peak for 1 January. In all cases the peaks were balanced by adjacent troughs, which suggests that the effect was due to parental preference for auspicious days or (for 1 January in the USA) to minimise tax, see 6.11.7 and later below.

In both the US and UK data there was a slight tendency for troughs to occur on the 13th of each month (traditionally unlucky), consistent with a parental avoidance of inauspicious days, but it was not enough to reach significance. In other words Tobey had independently uncovered evidence for misreporting at a time (late 19th century) when records were more open to misreporting than they are today, which is consistent with the findings in 6.11.1 ff.



Tobey (*American Astrology* September 1937:65-71) also discovered these variations in monthly US births that reflected the aftermath of the Great Depression, with 40% more births in Mar 1918 than in Oct 1933, here reduced to about 20% by the moving average. Together with the previous findings they revealed unsuspected complications, about which Tobey comments:

All of these factors, and many more are definite obstacles to astrological research. It is very easy to deceive one's self [about the significance of the results] by omitting or failing to consider basic factors (p.70).

Comment Foremost among obstructing factors is of course the distribution of births in the general population, which is never uniform (even within the same country) depending on location and period. See the plots from *Recent Advances* in 7.1.1977.3.

In a study of many millions of births up to 1929, a period which includes most of the births used in early statistical astrological studies, the US geographer Ellsworth Huntington (1876-1947) in his *Season of Birth: It's Relation to Human Abilities* 1938, a classic study with 150 references and hundreds of monthly distributions, found these factors to be significant:

1. Inborn reproductive cycle. As man evolved, conception tended to occur at times which allowed children to be born under the most favourable circumstances. In most countries this is spring, when the climate is not extreme, the prevalence of disease is minimal, and food supplies are increasing. However the existence of such a cycle is disputed.



2. Climate. During or after periods of very high or very low temperatures the incidence of conception is reduced. The effect is generally more pervasive than any other factor.

3. Seasonal migration. Work such as deep-sea fishing or seasonal farm labouring keep men from their wives for long periods. The return home of the absentees (especially at Christmas) can produce a distinct peak in conceptions. This factor was important but has been greatly reduced by the advent of modern transportation.

Ellsworth Huntington

4. Falsification of birth data by parents to enable their children to enter school earlier. Very significant in Japan.

5. End-of-year effects due to displacement of data arriving too late for inclusion in the annual report. Often very significant in the early days in countries with poor communications.

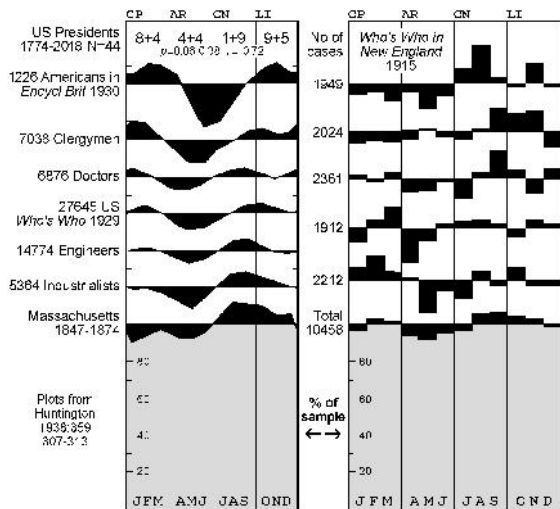
6. Religious observances which required sexual abstinence during certain periods. The release from abstinence, and national festivals such as Christmas and the New Year, often coincide with a dramatic rise in conceptions.

7. Diseases which are prevalent at some seasons and not at others. Also improved medical services that save babies that would have died in the worst seasons.

8. Birth control. The planned arrival of children tends to flatten peaks but has little effect on troughs.

9. Eminence. The births of persons of high eminence or high achievement conform more closely to a climatic cycle than do those of ordinary persons. Hot weather is more unfavourable, and cold weather more favourable, to the conception of successful persons, and their births peak in months cooler than average. This is compatible with the history of civilisations, where the closer the mean temperature is to 18 C the greater the achievements, other things being equal (Huntington, *Mainsprings of Civilisation* 1945:322-329). Disturbed, defective and delinquent persons also tend to conform to this pattern. But later findings (Pigache, *World Medicine* 1977:17-25) were largely conflicting.

The following plots illustrate some of these findings:



US monthly birth distributions (mostly 1850-1900) as percent deviations from the mean. At the top are the nearest tropical sign equivalents.

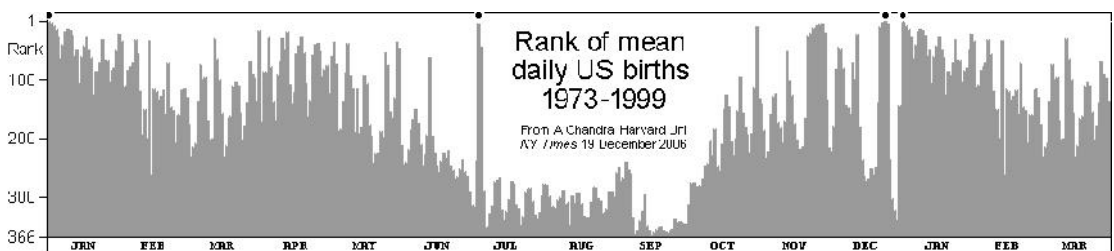
Left: As eminence and high character increase from bottom to top so the births conform more and more closely to the climatic cycle. Each curve is a moving average. At top, births of the 44 US Presidents up to 2018 closely conformed for the first 22 but hardly at all for the second 22. Data for the middle five distributions were provided for Huntington by Tobey in 1937.

Right: Huntington divided *Who's Who in New England 1915* into five sections each containing about 2000 names and found the distributions to be surprisingly different, especially as the seasonal effects in New England were among the lowest in the USA. No month was consistently high or low, and the differences were major about half the time. He concluded "a seasonal curve of births from 2000 people is not trustworthy" so "for ordinary people at least 10,000 cases are needed before we can rely on the results" (p.309).

Owing to rising standards of living many of the above factors are much less significant today. Since Huntington's time more and better data have become available and some of his factors no longer apply. But other workers have found additional factors as follows:

1. The difference between maximum and minimum is increased by wars, depressions and upheavals, typically by $\times 1.5$.
2. The strongly seasonal popularity of marriage was important in medieval times but is much less important today.
3. The main contribution to the annual variation appears to come from the lower economic groups, at least in the USA. The economically secure show less variation than average.
4. Some effects (eg on intelligence) can be explained by the relation between birth date and school entry date, which in effect gives those earliest in eligibility a head start; and by the planned arrival of children to coincide with the most favourable season (the higher the class and intelligence of the parents the greater the effect). This may also explain eminence effects.
5. Rapid cultural change via the advent of mass communications may be important in developing countries. Such effects appear to have caused recent large changes over a mere 15 years in the distribution of births in Puerto Rico.

The net result of all these factors is that the distribution of births can vary a great deal from country to country, from year to year, from place to place within the same country, and from one kind of person to another. The differences can be much higher than those typically observed between the astrological data and whatever is adopted as a base. And the data required to establish a sufficiently reliable base is usually not available in the first place. The situation facing the statistical investigator of signs is therefore one of very considerable uncertainty.



Above plot shows 27 years of US births 1973-1999 ranked by mean daily frequency. Popular dates appear as peaks and unpopular dates as troughs. The most popular dates (shown dotted) are 1 January, followed by 25 December and 4 July (Independence Day). A weekly cycle of interventions avoiding weekends is evident throughout, most clearly in July-August. Plot is of ranks (1-366), not frequencies, so it should not be read as showing actual births.

Non-astrological season-of-birth effects

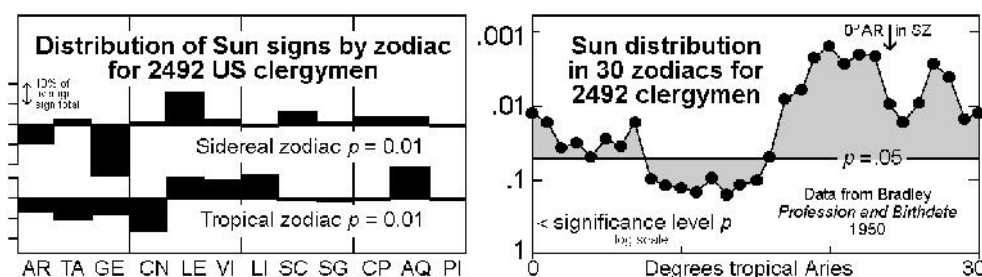
Season-of-birth effects have been widely studied and the literature is correspondingly large. Many things affect development in the womb (maternal nutrition, seasonal viruses, daylength effects on maternal serotonin levels), and much the same after birth. Thus winter births tend to have higher levels of schizophrenia, bipolar disorder, and depression. But the effects are

generally small and erratic, requiring large samples for their reliable detection, all reflecting the very low signal/noise ratio in the data. Reviews have been available for many years on the relation between season of birth and congenital abnormalities, intelligence, longevity, mental illness, schizophrenia, and suicide, for example Dalen, *Season of Birth* 1975. There is no evidence that any of these effects are related to astrological factors, a point confirmed by empirical studies, for example 7.1.1992.1 (longevity), 7.2.1978.3 (low blood sugar).

7.1.1950.1 Zodiacs: tropical vs sidereal

Donald Bradley, *Profession and Birthdate: A statistical analysis of planetary positions at the birthdates of 2492 eminent clergymen*. 1950. The publisher's blurb says the book "proves beyond doubt that the positions of the Sun, Moon and Planets in the zodiac at birth have great bearing on the personality make-up of individuals ... it may well mark the end of anti-astrology scoffers!". In his day Donald Bradley (1925-1974) was the leading US research astrologer and siderealist. He was also a lifelong amateur astronomer and had built more than a dozen astronomical telescopes.

Bradley begins by analysing the clergymen's sun signs by both zodiacs but finds no decisive difference (results below left). He then tests thirty different zodiacs starting one degree apart from 0° tropical Aries (results below right):



All totals have been corrected for the time spent in each sign. **Left:** The distribution of Sun signs for 2492 US clergymen in the two zodiacs. The distributions are equally significant ($p = 0.01$ by chi-squared test). Here 0° sidereal Aries is near the beginning of tropical Pisces, so the clear trough in sidereal Gemini (top) was formerly in tropical Cancer (bottom). **Right:** In principle the highest level of significance should coincide with the most significant zodiac. Here there is a broad hump favouring the sidereal zodiac. Bradley did not correct his 2492 clergymen for demographic effects, nor for the variation (about one degree) due to precession over the span of birth dates.

The sign distributions in each zodiac for the Moon, Mercury, Venus and Mars were not significantly different from chance. Nevertheless the author felt his test of 30 zodiacs confirmed the validity of the sidereal zodiac promoted by the Irish astrologer Cyril Fagan (1896-1970).

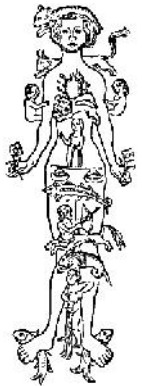
Comment The author's later work on solar and lunar returns, and on Jupiter Pluvius in 7.4.1981.1, led him and Fagan to claim they had conclusively established the position and superiority of the sidereal zodiac. In Western astrology each zodiac has its supporters who vigorously denounce the others. For example in the 1960s a learned battle between leading experts in the correspondence column of the UK quarterly journal *Astrology* continued for two years until it was terminated editorially (an article in *Astrology* 37(3), 85-92, 1963 began the debate, which lasted through 39(1) 1965). But because signs are now the most disconfirmed factor in astrology (see 8.3), neither zodiac has any genuine meaning except to indicate ecliptic positions. The learned battle was literally about nothing.

7.1.1950.2 Personality and illness vs sun signs

Gottfried Luecke, *Kosmobiologisches Jahrbuch* 1950:74-84. His overly long introduction boils down to "A deep, wise word says: as above, so below. Human souls must have their counterparts in the souls of the stars, and with this idea we come closer to cosmobiological psychology. It is no longer a sin to seek help from statistics, for it keeps the errors of vague speculation to a minimum".

In 1950 the Working Group for cosmobiological research led by Reinhold Ebertin sent to readers of the journal *Kosmobiologie* a questionnaire listing 60 traits for each sun sign, all of them as per tradition. They were asked to indicate which of the traits listed under their own sign were applicable to them. 175-250 replies for each sign were received. About half the

respondents were female, and most of them had a good knowledge of astrology. The top three traits for each sign averaged 79% hits in agreement with tradition, giving it apparent support. As a bonus, the authors of the questionnaire had included typically five illnesses per sign as per the Aries-to-Pisces-head-to-feet tradition of zodiacal man, and again the results gave it apparent support (zodiacal man from *Le Compost* 1493, Dominion from *Vox Stellarum* 1848):



**The Dominion of the Moon
in Man's Body, passing
under the Twelve Zodiacal
Constellations.**

♈ Aries, Head and Face.
♉ Taurus, Neck and Throat.
♊ Gemini, Arms and Shoulders.
♋ Cancer, Breast and Stomach.
♌ Leo, Heart and Back.
♍ Virgo, Bowels and Belly.
♎ Libra, Reins and Loins.
♏ Scorpio, Secret Members.
♐ Sagittarius, Hips and Thighs.
♑ Capricorn, Knees and Hams.
♒ Aquarius, Legs and Ankles.
♓ Pisces, Feet and Toes.

**Complaints suffered from,
with maximum % and minimum %**

AR headache 48%, brain diseases 8%
TA neck diseases 62%, abdominal suffering 35%
GE colds 76%, windpipe catarrh 18%
CN stomach suffering 46%, mood disorders 13%
LE circulation 58%, spinal cord suffering 6%
VI bowel complaints 66%, worm disease 16%
LI beauty concerns 34%, bladder diseases 14%
SC infectious diseases 30%, kidney stones 4%
SG nervousness 72%, paralysis 4%
CP stomach suffering 26%, knee injuries 7%
AQ nervousness 48%, dropsy 4%
PI foot complaints 44%, drunkenness 0%

The author feels the results are evidence for tradition rising again in Goethe's *Reich der Mütter* [realm of the Mother] but this time backed by *Ariadnefaden moderner Erkenntnisse* [Ariadne's thread of modern knowledge]. He concludes:

There should also be no question of the implications of these statistics. ... Here stands only sober results and they speak for themselves. They provide a first clearing of the ways in which a cosmological characterology is obtained. This is pioneering work (p.77).

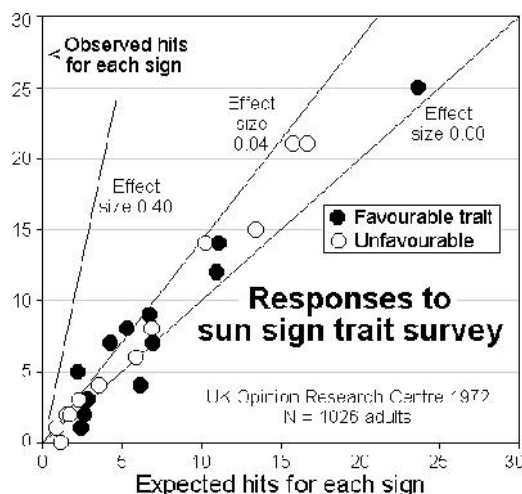
Comment This pioneering work shows only that people who are given a list of traits and illnesses that match their sun sign must necessarily pick traits and illnesses that match their sun sign. But the results show something the author did not notice – that the choice of traits is largely determined by social desirability. Consider the reported percent hits for the most and least popular choices of trait:

AR initiating 89%, brutal 16%
TA persistent 89%, untruthful 24%
GE varied 92%, garrulous 22%
CN caring 97%, unstable 24%
LE honorable 88%, extravagant 29%
VI modest 86%, loveless 28%

LI artistic 96%, forgetful 44%
SC thorough 84%, unworthy 42%
SG enterprising 80%, bombastic 42%
CP steadfast 78%, submissive 27%
AQ sympathetic 76%, humourless 37%
PI imaginative 77%, corrupt 27%

It is easy to see why being initiating and imaginative is more popular than being brutal and corrupt, and it has nothing to do with astrology. It does not answer the key question – given sun-sign descriptions under blind conditions, do people consistently choose the right one? If they do not, then sun-sign astrology has problems. In 1972 this point was addressed by the UK Opinion Research Centre when it surveyed a representative sample of 1026 adults aged 16+ throughout Britain on various topics, some of which (unknown to them) were relevant to sun-sign astrology (ORC unpublished report, for more results see 7.1.1973.1). Among the questions were "Here is a list of favourable descriptions of people. If you had to choose one of them to describe yourself, which one would it be?" Then the same for unfavourable descriptions.

The descriptions were in fact a trait relevant to each sun sign. For Aries through Pisces the favourable traits were *decisive, down to earth, open, caring, affectionate, aware of self, fair, single-minded, adventurous, realistic, humane, imaginative*. The unfavourable traits were *selfish, obstinate, changeable, moody, vain, fussy, indecisive, fanatical, slipshod, strict, apathetic, vague*. Social desirability effects were dominant. Thus three times the average thought they were like Taurus (down-to-earth, obstinate), and only one-quarter of the average thought they were like Scorpio (single-minded, fanatical). But did the subjects consistently choose the right traits for their sign? To find out, we plot the observed hits against expected hits:

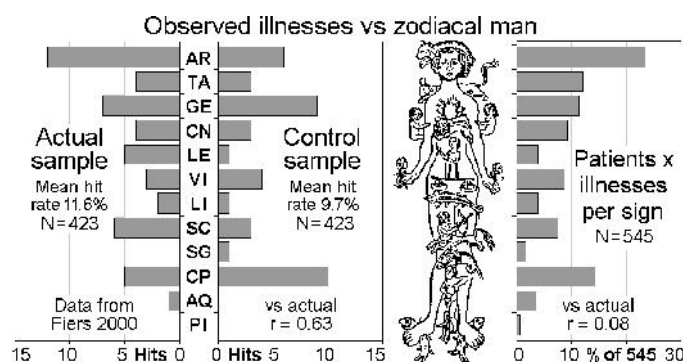


The results fall close to the 45° diagonal where observed = expected * (ie effect size = 0.00). The slight tendency to fall above the diagonal is equivalent to an effect size not over 0.04, and is probably due to self-attribution (typical effect size 0.07, see 8.3.7). **Conclusion:** The results are those we expect to see if traits are unrelated to sun signs.

* For trait Y, the expected hits for sign X is (number of subjects choosing trait Y / 12) x (number of subjects with sign X / mean number of subjects per sign).

The supposed connection between **illness and sun sign** was tested by Dr Jean Fiers in *Les Cahiers du RAMS* 8, 78-89, 2000. He (1) obtained birth data for 423 patients with sign-related illnesses, (2) classified the head-to-feet location of 141 illnesses from a standard medical reference, (3) counted patients x sign-related illnesses, (4) counted patients who had

an illness related to their sun sign, such cases were counted as hits, and (5) repeated the exercise with the same patients after shuffling their birth data to form a control sample.



Left: the distributions of both actual and control hits were erratic and not very different. The mean actual hits of 11.6% means that on average 11.6% of 423 patients had the relevant sun sign vs 9.7% of the same patients picked at random (p of difference = 0.21), so no support for zodiacal man.

Right: the distribution of patients x sign-related illnesses is highly non-uniform with a maximum in Aries (head and face) and a minimum in Pisces (feet and toes). The total (545) exceeds the sample size (423) because some patients had more than one sign-related illness.

The author concludes that the traditional correspondence between zodiac signs and parts of the body "do not seem for the moment to be confirmed" (p.78).

7.1.1954.1 How self-attribution can land you in jail N=1700

G Jahoda. A note on Ashanti names and their relationship to personality. *British Journal of Psychology* 45, 192-195, 1954. Shows how names can influence behaviour (and not just personality), thus extending the significance of self-attribution.

The Ashanti people in Ghana include in their individual names the day of the week on which they were born, which in Ashanti legend is the day on which the soul is purified. The Ashanti day names depend on whether they are for a girl or boy and are listed below:

Day	Girls	Boys	Consensus of meaning for boys	Day attribution
Sunday	Akosua	Kwasi	No clear consensus	
Monday	Adwoa	Kwadwo	Quiet, retiring, peaceful	Peace
Tuesday	Abenaa	Kwabena	No clear consensus	
Wednesday	Akua	Kwaku	Aggressive, quick-tempered, a trouble maker	Murder
Thursday	Yaa	Yaw	No clear consensus	
Friday	Afua	Kofi	No clear consensus	
Saturday	Amma	Kwame	No clear consensus	

No significance is attached to girls' names. The significance attached to boys' names shows some regional variation, but there is widespread consensus on the two shown above. Day names merely indicate that a particular type of soul has entered the body and produces a disposition towards certain behaviours, which can be countered and are by no means fixed.

As a control for possible bias in the distribution of names, as might occur for births around

dawn when a desirable day might be chosen rather than a less desirable day, Jahoda obtained the names of all Ashanti boys in ten local schools. He then obtained the distribution by name of Ashanti juvenile delinquents from juvenile court records starting in September 1918 (when record-keeping began) through June 1953. The two distributions looked like this:

Ashanti name	Kwasi	Kwadwo	Kwabena	Kwaku	Yaw	Kofi	Kwame	No ID*	Total	Ashanti mean
Day	Sun	Mon	Tue	Wed	Thu	Fri	Sat			
Schoolboys	179	157	151	164	163	179	188	73	1254	169
Delinquents	47	23	42	45	49	63	63	114	446	47
-----									----	
Diff by chi2 between distributions df=6 p.043									1700	

The distributions are significantly different, mostly due to the small number of *Kwadwos* who “appear to live up to their reputation of being quiet and well-behaved as compared with boys born on other days” (p.194). If only offences against the person are counted (perhaps the most direct expression of an aggressive nature), he found significantly more *Kwakus*:

----- Offences -----					
Ashanti name	Against person	Other	Total		
Not Kwaku + No ID*	43	358	401		*No ID means the name did
Kwaku only	12	33	45		not appear in the records
-----			---		
p=0.0020 df=1			446		

Jahoda concludes that the results “are consistent with the hypothesis that Ashanti beliefs about a connexion between personality characteristics and day of birth may be effective in selectively enhancing certain traits which otherwise may have remained latent” (p.195).

Comment Jahoda’s results are consistent with about 1 in 2 of the Ashanti population's being measurably affected by self-attribution. In the UK the corresponding proportion is about 1 in 3, see end of 8.3.7.

The Ashanti day meanings for Monday and Wednesday show no especially good or bad match with the meaning of the planets after which the Western days are named, which are: Monday MO *melancholy* (Ashanti *quiet, retiring*), Wednesday ME *inconstant* (*aggressive*).

In Western folklore the day meanings are given in the familiar rhyme of which one version is:

Monday's child (MO melancholy) is fair of face,	Tuesday's child (MA vehement) is full of grace,
Wednesday's child (ME inconstant) is solemn and sad,	Thursday's child (JU benign) is merry and glad,
Friday's child (VE fertile) is loving and giving,	Saturday's child (SA sad) works hard for a living,
Sunday's child (SO good) is blithe, bonny and wise.	() = early planetary keyword, see below at end.

The first three (MO, MA, ME) show a poor match with the early planetary keywords in () but the rest are reasonable. Given the links with planets we might hope the day meanings would be stable and consistent. In fact there is much confusion. Thus the various UK versions mix up Tuesday through Thursday and rarely improve the match:

Tuesday (MA vehement) is solemn and sad,	or full of God's grace;	
Wednesday (ME inconstant) is full of woe,	or is sour and glum,	or is merry and glad;
Thursday (JU benign) has far to go,	or is sour and sad,	or is inclined to thieving
(from Opie I & Taten M, <i>A Dictionary of Superstitions</i> 1989:27).		

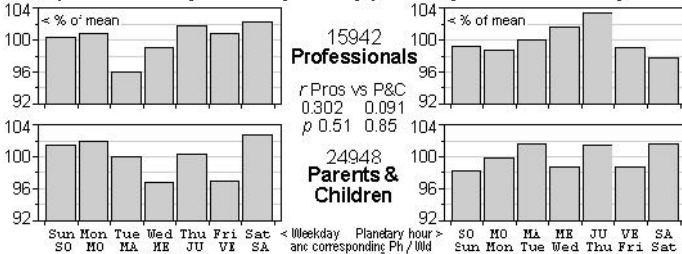
One US version mixes up Wednesday through Friday (Bergen FD ed. *Current Superstitions: Collected from the oral tradition of English speaking folk* 1896:21).

The following German version from Bachtold-Staubli H ed. *Handwörterbuch des Deutschen Aberglaubens* Volume 3 (1927:408) gets Wednesday right but mixes up most of the rest:

Monday (MO melancholy) children are clever,	Tuesday (MA vehement) children are rich,
Wednesday (ME inconstant) children are talkative,	Thursday (JU benign) children are angry,
Friday (VE fertile) children are unhappy,	Saturday (SA sad) children are lazy,
Sunday (SO good) children are happy.	

Such mix-ups indicate that the links between planets and days did not persist, even if they were understood, probably because they were not useful. Thus every almanac tradition such as zodiac man involved everyday practical matters that were more useful than day names. The same would have applied to planetary hours, so the demise of both is unsurprising:

Gauquelin births by weekday and by planetary hour in weekday order



Especially when there is no reliable effect of either as shown by these counts of the Gauquelin data. Thus the counts on days or hours related to the malefics MA and SA are not consistently fewer than the counts on days or hours related to the benefics VE and JU – a point that is also relevant to the interventions that would later emerge to avoid births at weekends or outside office hours. Dean, *Astrology under Scrutiny* 13(1&2), 15,30, 2000.

Allocation of Planets to Hours and Days. Order the planets from slowest to fastest (so Saturn=1, Jupiter=2, Mars=3, Sun=4, Venus=5, Mercury=6, Moon=7) and allocate them in rotation to the 24 hours starting on Saturday until all 7 x 24 hours are filled. A day is governed by the planet allocated to its first hour, which results in the present order of the days. English day names are from Saxon planet names. French day names are from Latin planet names:

Planets allocated to:	Saxon planet	English day name	Latin planet	French day name	Albertus keyword*
First Remaining 23 hours					
1=SA 234567123456712345671234567123	Seterne	Saturday	Saturnus	Samedi	Sad
4=SO 567123456712345671234567123456	Sun	Sunday	Sol	Dimanche	Good
7=MO 123456712345671234567123456712	Moon	Monday	Luna	Lundi	Melancholy
3=MA 456712345671234567123456712345	Tiw	Tuesday	Mars	Mardi	Vehement
6=ME 712345671234567123456712345671	Woden	Wednesday	Mercurius	Mercredi	Inconstant
2=JU 345671234567123456712345671234	Thor	Thursday	Iuppiter	Jeudi	Benign
5=VE 671234567123456712345671234567	Frigg	Friday	Venus	Vendredi	Fertile

The above planetary order is not the ancient Babylonian order (which was in god order, namely 7425163 MO-SO-JU-VE-SA-ME-MA or later 7435612 MO-SO-MA-VE-ME-SA-JU), which confirms its Greek origin.

*Planetary keywords according to the scholar Albertus Magnus (1193-1280), the only learned man of the 12th and 13th centuries to be called "the Great" and author of *Speculum Astronomiae* [Mirror of Astrology] c.1277, a defence of astronomy and astrology as proper subjects for study including an annotated list of the relevant books then available.

7.1.1969.1 Moon sign at 195 open-heart operations

Margaret Millard MD, *American Astrology* January 1969 page 22 (letter to editor).

Ptolemy warned us to "pierce not with iron that part of the body" ruled by the prevailing Moon sign. For 191 of the 195 open-heart operations in my hospital the prevailing Moon sign was:

Moon sign	AR	TA	GE	CN	LE*	VI	LI	SC	SG	CP	AQ	PI	All	*Heart ruler
Number of cases	18	20	17	13	14	14	15	16	18	15	17	14	191	see zodiac
Number of deaths	3	4	4	1	2	3	1	3	1	3	1	5	31	man in
Percent deaths	17	20	24	8	14	21	7	19	6	20	6	36	16	7.1.1950.2

Despite the small sample size and number of deaths the results do seem to disprove Ptolemy's warning, which predicts a high proportion of deaths when the Moon is in Leo (if anything the actual proportion of 14% is less than average of 16%).

7.1.1972.1 Factor analysis of Sun element for 58 subjects

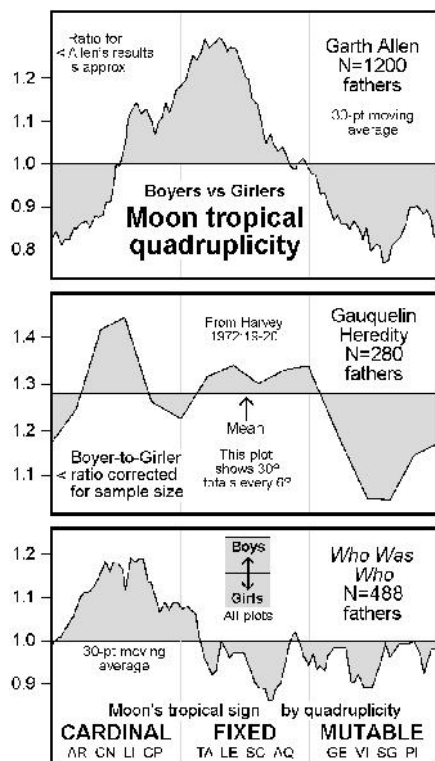
Gwen L Dean, *Astrological Personality Test*, Dissertation, California State College, Dominguez Hills c.1972. Although the sample size is small, the study was one of the first to use factor analysis (via an IBM punched-card mainframe).

The author and a professional astrologer assembled a list of 84 traits traditionally allocated to the twelve signs, and divided them into three groups of 28, each containing seven traits for each of the four elements. To refine these lists, a group of 17 men and 20 women, median age 37 range 15-64, rated each trait on a scale of 1 (not at all like me) to 5 (extremely like me), and gave their birth date. The author grouped the ratings according to the subject's element FEAW, and discarded any trait with a mean rating of 3.5 or less. A total of 38 traits were discarded, leaving 46 refined traits distributed as follows: F 25, E plus A 15, W 6.

To test these refined traits a fresh group of 34 men and 33 women, median age 29 range 16-52, rated each trait as true or false, and gave their birth date. They also indicated whether they were familiar with astrology (the percentage who said yes was largely independent of their actual element – F 41, E 49, A 40, W 50, mean 45). Subjects whose highest rated element agreed with their actual element were scored 1 for that element and 0 for their other elements. Nine incomplete responses had to be discarded leaving a total of 58 responses for analysis. A factor analysis of the resulting matrix gave for each element the following main factors, ie the underlying themes that the subjects with that Sun element actually identified with. For comparison the traditional keyword meanings according to Margaret Hone's *Modern Text Book of Astrology* (1951:37) are shown in italics:

Fire:	leadership, aggressive romanticist;	<i>ardent, keen.</i>
Earth:	foresightedness, opinionatedness;	<i>practical, cautious.</i>
Air:	extraverted-independent, freedom;	<i>intellectual, communicative.</i>
Water:	aware of time and death, secretive;	<i>emotional, unstable, sensitive.</i>

Despite the refinement and the subjects' appreciable familiarity with astrology, the match with tradition was not significant (by a chi-squared test $p > 0.30$). The author concluded that the validity of a person's Sun element is too low to justify using it as a personality test. However, the match was marginally better if the father's or mother's element differed from the subject's, which suggested a poor match might be due to conflict between like elements, which in turn suggested a possible use in counselling, but "it will be necessary first, however, to raise the validity of the test" (p.8b). **Comment** The occasional similarities apparent above, eg leadership vs keen, secretive vs sensitive, are probably no more than can be reasonably explained by self-attribution. The possible use in counselling is an example of how, in a formal dissertation, it is usual to grasp at straws to offset poor results.



7.1.1972.2 Sex predetermination by Moon quadruplicity: Boyers vs Girlers

Charles Harvey, *Astrological Journal* 14(4), 19-21, 1972. A follow-up to Garth Allen's study in *American Astrology* of 1200 fathers with two or more children of a single sex, of which 654 had two or more boys and 546 had two or more girls. This was to test the Hindu aphorism from the 6th-century *Brihat Jataka* that fathers born with the Moon in Taurus "will have daughters", in Leo "very few sons", in Virgo "will have daughters and very few sons". The distribution of tropical Moon position for all 1200 fathers showed no appreciable deviation from expectancy, but plotted by quadruplicity boyers differed significantly from girlers ($p < 0.01$). Support for the aphorism was poor but when positions were converted to the sidereal zodiac it was "fairly good".

An attempt by John Addey (*Astrological Journal* 13(4), 3-5, 1971) to replicate these findings using Gauquelin's heredity data was inconclusive. So a fresh sample of 272 boyers (fathers of two or more boys only) and 216 girlers (fathers of two or more girls only) was extracted from *Who Was Who* 1951-1960. All results including Allen's from *American Astrology* are shown opposite.

In each study, total boyers / total girlers by Moon degree, corrected to the same sample size, were plotted as a 30-point moving average by quadruplicity (so no direct test of the aphorism's prediction for TA vs LE was possible). To convert to the sidereal zodiac, each plot should be moved almost one place to the left so what was previously under Fixed-Mutable is now mostly under Cardinal-Fixed.

Harvey notes that in each case the peaks were suggestive of harmonic effects but their position did not replicate. Also the results using the Gauquelin heredity data were heavily skewed towards boyers (mean almost 1.3 compared with 1.0 in the other two studies), which was

hard to explain. For fathers of three or more only in the *Who Was Who* data (150 boyers and 154 girlers), the lowest totals for girlers were AQ, AR, GE and CN, and the highest totals were LE, SG, SC, PI, and TA, which matches the aphorism but not if converted to the sidereal zodiac. The highest totals for boyers were AQ, PI, TA, and LI, which shows some agreement (AQ) and some disagreement (TA) with the totals for girlers. When a comparison was made with the corresponding totals for the Gauquelin heredity data, they were again sometimes in agreement and sometimes not. However, "more detailed work is in progress on these studies and it is hoped to report on further results as they become available" (p.21).

Comment But no report appeared, perhaps because the effect did not replicate well enough. An exploration of the results (do moving-total artifacts cause the remarkably smooth transition between quadruplicities?) would need individual degree totals, but none have been published. Birth data for wives would have allowed a check on the aphorism but was not available for the Garth Allen and *Who Was Who* fathers, and was not tested for the Gauquelin mothers.

7.1.1973.1 Sun sign forecasts vs what actually happened

Nicholas Tomalin, The way through the stars, *Sunday Times Weekly Review* [UK] 22 April 1973 pages 33-35.

Sunday Times reporter Nicholas Tomalin presents a survey of a representative sample of 1026 adults age 16+ who were questioned throughout Britain by the Opinion Research Centre on topics relevant to those featured in sun-sign forecasts. The most widely-read forecasts were collected for the day in question and were compared with what actually happened. Tomalin points out that most forecasts are so vague that such a comparison is not always easy; for example, how do you judge whether this came true:

Your popularity may fluctuate today (Lord Luck, *Daily Express*)

However in those cases where a definite forecast was made, inspection of the original data revealed no evidence for their validity. For example, Leos (who had a lucky romantic forecast) experienced the unluckiest and most unromantic day of all the signs, and Scorpios (who experienced the luckiest and most romantic day of all the signs) had only a very ordinary forecast. Here are the details (data copyright *ORC/Sunday Times* 1972):

Sun-sign forecast for LEO on 19 Sept 1972	-- What actually happened --			
	To 101 Leos	To 925 non-Leos		
"Very much one of your lucky lovely days" (Diana, <i>The Sun</i>)	Lucky day 19%	28%)		
	Unlucky day 18%	12%)		
	Indefinite 63%	60%)	Leo was the	
		)	worst off	
"Romance continues tranquilly" (Orion, <i>Daily Mail</i>)	Romance good 40%	48%)	of all signs	
	Romance bad 13%	9%)		
	Indefinite 47%	43%)		
Sun-sign forecast for SCORPIO on 19 Sept 1972	----- What actually happened -----			
	To 82 Scorpios	To 944 non-Scorpios		
"Don't be despondent if not appreciated" (Patric Walker, <i>Daily Mirror</i>)	Romance good 57%	46%)	Scorpio was	
	Romance bad 5%	9%)	the best off	
	Indefinite 38%	61%)	of all signs	

There was no correlation between what happened and the position of transiting planets. Thus benefic Jupiter was in Sagittarius and malefic Saturn was in Gemini, but the 55 Sagittarians had the second-worst day of all signs, and the 81 Geminians had only an average day.

ON THE DAY SHE WAS married, my wife looked up what the stars foretold for her. They were quite accurate. They said: "Gay times with an admirer tonight."

However Tomalin did note one accurate prediction (p.33).

Comment See 8.3.1 for examples of disconfirmations when forecasts happen to be absurdly specific. Tomalin also described a test (suggested by Roger Elliot) in which Elliot prepared chart readings for seven contrasting natives of Scotland, all with accurate birth times, who had

to choose the one that fitted them best. Only one, an astronomer, chose his own, whereas a crofter, an advocate, and a minister all thought they were the comedian Ronnie Corbett. A caber tosser and Corbett thought they were the advocate, while RD Laing the psychiatrist thought he was the crofter. The subjects also completed the EPI, whose results were converted by Eysenck into personality descriptions. Unfortunately Laing did not complete his (he was anti-EPI). Of the remaining six, only Corbett was incorrect in thinking he was the astronomer.

7.1.1974.1 Keywords: tropical signs vs sidereal signs

JE Sunley, *Spica* [UK] 14(1), 31-39, 1974 and personal communication 1978.

UK astrologer JE Sunley spent ten years comparing tropical sign keywords with sidereal sign keywords as given in standard astrology books. After sorting them by the headings in *Roget's Thesaurus* (Penguin 1953 edition), the result for each tropical or sidereal sign was an average of over 200 trait words organised under more than 40 headings. The top three headings for each sign were as follows:

Tropical	Sidereal	Tropical	Sidereal
AR Precursor Excitability Hope	Master Compulsion Desire	LI Courtesy Sociality Taste	Beauty Elegance Oblivion
TA Perseverance Obstinacy *Inexcitability	Love *Inexcitability Desire	SC Resolution Severity Perseverance	Activity Plainness Courage
GE *Activity Changeableness Skill	Learning Loquacity *Activity	SG Wisdom Excitability Discourtesy	Repute Right Conformity
CN *Sensibility Feeling Benevolence	*Sensibility Drama Barter	CP *Dejection Resolution Perseverance	*Dejection Conciseness Adversity
LE Vanity *Pride Probity	*Pride Master Ostentation	AQ *Unconformity Philanthropy Veracity	Knowledge Amusement *Unconformity
VI Activity Arrangement Truth	Skill Knowledge Occultism	PI *Occultism Changeableness Dejection	*Occultism Deception Food

* Heading appears under both zodiacs

Look first at the asterisks. Seven signs share the same heading under both zodiacs, whereas according to tradition they should share none. Now align the zodiacs to involve the same areas of sky, so tropical AR is aligned with sidereal PI. According to tradition they should share most headings, but in fact they share none. Some headings are even in conflict, for example tropical TA vs sidereal AR (obstinacy vs compulsion), tropical SC vs sidereal LI (severity vs elegance). In the full list averaging more than 40 headings per sign, an average of 30.1 headings were shared by both tropical and sidereal signs from mostly different areas of sky. In other words the keywords for tropical and sidereal signs were mostly similar whereas according to received tradition they should be mostly different. **Comment** Which of course is consistent with signs having no meaning at all except in the minds of astrologers. The number of signs is about as established as it is possible to be, but even this has been disputed. For example by James Vogh, albeit in a plausible work that was in fact a hoax aimed at gullible believers (*Arachne Rising: The Thirteenth Sign* 1977). Indeed, the limits of the zodiac belt are defined by the maximum latitude of the 7 ancient planets. Add Uranus, Neptune, and Pluto, and the new maximum latitude defines a belt containing 24 constellations. Hence the zodiac should logically contain 24 signs, most of them overlapping. The last would upset correspondence between signs and houses (Gerald Messadié, *Le zodiaque à 24 signes* 1973:53-61).

7.1.1974.2 Sun-Moon and Venus-Mars signs in 446 divorces

Astrologer Alexandra Mark and scientist Dr John P Gilbert, *AFA Bulletin* 36(8), 8-10, 1974.

Alexandra Mark had noticed in 30 years of divorce counselling that no couple ever had both SO-MO and VE-MA links (the number of couples was not stated) yet they occurred in about 1 in 10 randomly matched couples. This observation was then tested as follows: Dr John Gilbert obtained (untimed) birth data for 446 divorced couples from Massachusetts state registries and 446 controls with the same birth years but with dates picked at random. The dates were mixed up and sent to Mark, who calculated and scored the charts blind. Planetary positions were taken from an ephemeris (this was before computers). She then counted the number of couples where one partner had their Sun conjunct or opposite by sign the other's Moon (orb 16° , so each sign faced two signs, making $p = 2 \times 2/12 = 1/3$), and where one partner had their Venus conjunct or opposite by sign the other's Mars (orb 16° , so again $p =$ (roughly) $1/3$, irrespective of which partner had which planets. Did they have both links? Answer:

	Yes	No	Total		
Divorced	21	425	446	)	for which $\chi^2 = 5.70$
Controls	40	406	446	)	$p = 0.017$, $\phi = -0.08$

The difference is in the predicted direction and significant ($p = 0.017$). The expected number is about $1/3 \times 1/3 \times 446 = 50$, which is not significantly different from the 40 observed for the above controls ($p = 0.32$). **Comment** The absence of birth times is a worry, as is the mind-numbing requirement of having to manually look up $4 \times 4 \times 446 = 7136$ planetary positions without error. But in any case the effect size ϕ is too small (-0.08) to be of practical use.

7.1.1974.3 Do sun signs agree with personality ratings? N=86

Silverman and Whitmer. *Astrological Indicators of Personality. Journal of Psychology* 87, 89-95, 1974.

Psychologists Silverman and Whitmer tested the correlation between (1) the Sun, Moon and Ascending sign descriptions and (2) independent ratings of personality. At their university 130 students and faculty completed an Eysenck Personality Inventory, gave their time, date and place of birth, and assessed themselves on a 9-point scale for each of these eight traits:

(Adaptable)	Aggressive	Ambitious	Creative
Extraverted	Intuitive	(Practical)	(Warm)

For 86 of these subjects a close friend assessed them on the same scales. Agreement was satisfactory between self-assessment and friends-assessment except for the three traits in (), so they were discarded. Three astrological texts (Adam's *Astrology Your Place Among The Stars*, Goodavage's *Write Your Own Horoscope*, Parker and Parker's *The Compleat Astrologer*) were used to rate each sign on a 5-point scale for the five remaining traits, which showed generally good agreement with independent ratings by a professional astrologer (which of course is not unexpected). The agreement as a correlation r and the ratings for each sign were as follows:

	r^*	p	AR	TA	GE	CN	LE	VI	LI	SC	SG	CP	AQ	PI	
Aggressive	.68	0.02	5	3	3	1	4	3	2	5	3	4	3	1	)
Ambitious	.61	0.04	5	3	3	2	5	3	1	4	3	5	3	1	) 5-pt scale
Creative	.56	0.06	3	3	3	4	5	1	3	3	3	1	3	5	) 1=low 5=high
Extroverted	.82	0.01	3	3	4	3	5	2	4	2	5	1	3	1	) Mean 3.1
Intuitive	.88	0.00	3	2	3	5	3	1	3	5	3	1	4	5	)
Mean per sign x10			38	28	32	30	44	20	26	38	34	24	32	26	

*Between ratings and astrologer $df=10$. A value >0.6 is good, >0.8 is very good.

The textbook ratings were then used to evaluate each of the 86 subject's Sun, Moon and Ascending sign for each of the five traits.

Finally the resulting three sets of evaluations were compared to the self-ratings and friends-ratings. All correlations with the evaluations were non-significant $p>0.05$ whether tested individually or collectively, whereas all correlations between self-ratings and friend-ratings were significant at the $p<0.05$ level (ambitious, creative) or $p<0.01$ level (aggressive, extraverted, intuitive). For extraverted the correlations with the EPI E score were significant for self-ratings $p<0.01$ and friend-ratings $p<0.05$ but not for signs $p>0.05$. Conclusion: the validity of signs as indicators of personality is not confirmed.

Comment In 1965 Ebertin's *Kosmopsychologie* described how in 1959 the German magazine *Constanze* (a good-quality popular magazine long defunct) published a set of traditional sun sign delineations in which good and bad traits were equally present, and invited readers to rate the accuracy of their own sun sign. There was a good response, and most of the readers were ignorant of astrology. Although signs are not valid indicators of personality, readers gave them an average accuracy rating of 80%, with a typical breakdown of:

Everything fits 34%. Much of it fits 41%. Much does not fit 17%. Nothing fits 8%.

Which shows how signs will fit provided you identify them in advance.

7.1.1974.4 How like Aries are sports champions? N=95

M Gauquelin. *Cosmic Influences on Human Behaviour*. 1974:242-243.

From 2088 eminent sports champions Gauquelin selected those described in their biographies as being extremely aggressive, courageous and energetic. So in astrological terms they were precisely Mars-like. Only 95 champions fitted this category. According to tradition the Martian signs Aries and Scorpio should be dominant in the charts of such strongly Martian people. In fact the planets, Ascendant and MC appeared no more frequently in those signs than in others. In particular Sun sign Aries scored only 2 and Scorpio only 4, much less than the 8 expected by chance, whereas Gemini and Aquarius (neither traditionally noted for being Mars-like) scored 13 and 12 respectively.

7.1.1974.5 Does reading your sun sign change your self-image?

JG Delaney and HD Woodyard, *Psychological Reports* 34, 1214, 1974. This short (one page) but pioneering study was made before sun sign self-attribution had been established. It provides a useful clue that has been missed by others.

The authors wondered if people who accepted general personality descriptions as being quite specific for them (the Barnum Effect) meant that such descriptions could affect later responses to a personality test. (Today we know the answer is yes but in 1974 it was less clear.)

To find out, they gave each of 55 Canadian high school students aged 16-18 (39 males, 16 females) a booklet containing the 12 traditional sun sign descriptions. The descriptions had been rated by six psychologists on 11-point scales for their levels of *dominance* (domineering vs unassertive) and *change* (changeable vs steadfast). Each booklet looked the same on the outside but it came in two versions, where descriptions high in dominance or change in one version were reversed in the other, so that high X in one booklet became low X in the other.

The students were told to twice read the description for their own sign only. When finished, they handed in the booklets and completed a 100-item personality questionnaire. Half were from the *Dominance* and *Change* scales of the widely-used Jackson Personality Research Form. The rest were unrelated items mixed in at random to prevent the students guessing what was being measured and thus potentially biasing the results. Each student was labelled high or low X according to the description of their sign in their booklet. The resulting mean scores according to student group were:

Student group	Dominance		<i>p</i> by <i>t</i> -test	Change		<i>p</i> by <i>t</i> -test
	High	Low		High	Low	
Mean score	17.1	13.0	0.011	23.7	21.3	0.029
Corresponding <i>r</i>	0.34			0.30		

In each case the difference between high and low student groups was significantly in the direction predicted by their sun sign descriptions. The authors conclude:

These results suggest the astrological descriptions did influence self-report as predicted (*p*.1214).

Comment Which of course later studies of self-attribution have confirmed, see 8.3.7. The difference here is that the effect was measured immediately after reading the descriptions, whereas self-attribution studies did not have this immediacy and measured only the effect that remained after becoming familiar with sign meanings at an undefined time in the past. So the

difference in their mean effect size r (calculated using $r = t / \sqrt{(t^2 + N - 2)}$) of 0.32 vs 0.062 is noteworthy, especially as the higher value is precisely relevant to an "astrology works!" assessment after having one's chart read.



So what would you prefer as your Sun Sign – one called *The Lion* or *The Winged Horse* or one called *The Dots* or *Freckles*?

How might it affect your existence at school, at home, in the office?

Would you still believe in astrology?

7.1.1974.6 Astrological vs psychological profiles N=24 Air signs

Simon Best, *Astrology: An Experimental Investigation*, MA thesis University of Canterbury, Christchurch New Zealand 1974. Aim was to discover whether seeing astrology as "pure superstitious nonsense" was justified (the outcome was inconclusive). Best later returned to the UK and became founding editor of the reborn *Correlation* during 1981-1992. For a group picture see 8.1.2. For his account of life in those days and Charles Harvey's influence see 7.2.2000.1.

Subjects were 24 white male undergraduate students at the University of Canterbury in 1972 who were born in New Zealand. All were aged 20 or 21 and unmarried, none were disabled, none had any knowledge of astrology beyond the most superficial level, and all had birth times recorded to within ten minutes. Air sun signs were the most numerous and were divided into three groups of eight subjects each, namely Gemini, Libra and Aquarius.

The author met each subject separately on two occasions. The first was to establish rapport and administer the Cattell 16PF and the EPI personality tests. The second had the subject do three things: (1) Look at the eight psychological profiles for his group side by side and pick the one that most accurately described him. They could take as much time as they liked. (2) Same for the eight astrological profiles. (3) For their two actual profiles (which had not been previously identified), estimate their percentage accuracy and pick the most accurate.

The *psychological* profiles were prepared from the 16PF test results by the author and checked by a professional clinical psychologist. Each averaged 300 words in length and focussed on traits with scores more than one standard deviation from the mean. The *astrological* profiles were prepared by an astrologer living in Wellington 300 km away with 15 years of experience and reputed to be the best in New Zealand. The astrologer could say whatever was necessary, so each profile was similar to what a client would receive, but to avoid cues no astrological terms were allowed. Each profile was typically between 800 and 1600 words in length.

Neither the 16PF nor astrological profiles were judged to be consistently accurate, but the 16PF profiles were consistently preferred with a total of 9 hits vs 3 expected by chance (binomial $p = 0.002$), whereas astrological profiles scored only 1 hit vs 3 expected ($p = 0.18$):

Choice was	Psychology hits			Each out of	Astrology hits			Each out of
	GE	LI	AQ		GE	LI	AQ	
Most accurate	3	3	3	8	0	0	1	8
Psych or Astro?	6	4	8	8	2	4	0	8
Rated accuracy %	-----54 sd 22-----				-----43 sd 23-----			

A discriminant analysis of E and N scores found no significant difference between the 3 groups of 16PF profiles, nor between the 9 subjects who chose the correct 16PF profile and the 15

who did not. The author concluded that tests using profiles should be abandoned in favour of asking psychologists and astrologers questions about subjects that have verifiable answers.

Comment This approach was quite advanced for its time but the conclusion was forced by the sheer wordiness of the selection task. For example here is every fifth sentence from the 16PF profile for a subject whose E and N scores were the same as the means for 24 subjects:

Your intelligence is certainly one of your distinctive features, being considerably above average. You can express yourself concisely, and are not easily fooled by other people and their pretensions. You are not easily upset nor given to emotional outbursts. You seldom drive yourself so hard that you become overwrought (p.279).

Compare it with every twentieth sentence from the astrological profile:

The subject is inclined to approach life and problems with a fairly intense desire to demonstrate his ability to cope with them. Despite what may seem at first to be a rather problem-type personality, the subject is likely to move easily through life on the whole, carried forward and perhaps upward by peculiar flukes of circumstances and the drift of the tide of life generally that his intelligence will utilize for the general well-being of his body and soul [all sic]. As he is quite knowledgeable about human beings and fairly intuitive, it doesn't take much for him to quickly catch into the trend of the conversation. He may be subject to clairvoyance or hypersensitive experiences (p.282).

Expand to full size, multiply by eight, and you have about 24 single-spaced A4 pages to juggle (ie mental paralysis) in search of the two top profiles. In this case neither was picked as the most accurate profile, but the 16PF (25% accurate) was preferred to the other (10% accurate).

7.1.1975.1 Signs and elements: Can the astrologer tell? N=12

In 1975 the now defunct UK Sunday newspaper *News of the World* tested a panel of four leading astrologers that included the President of the Faculty of Astrological Studies and the President of the Federation of British Astrologers. The panel were presented with 12 adult subjects, one from each sun sign, who were previously unknown to them. Strict rules applied. Each subject was presented separately and each interview was limited to 5 minutes. The panel was allowed to ask subjects anything except their birth date. Up to two interviews were permitted. There was no time limit on discussion between interviews. The panel was not told the results until the entire test was finished.



The subjects had no special knowledge of astrology nor any special interest in it. Each tried to answer only yes or no to questions and give away as little as possible. About half were interviewed twice. The test took about four hours or about 20 minutes per subject.

The score expected by chance is 1 right but the panel got 8 right ($p = 10^{-6}$). Their judgements were based on the whole person and no clue was consistently used more than another. The main clues were:

AR Active, restless behaviour.

TA Panel got it wrong.

GE Panel got it wrong.

CN Panel got it wrong.

LE Panel got it wrong.

VI Typical tidiness.

LI Self-deprecation and charm.

SC Felt power over people.

SG Optimism, love of gambling.

CP Thin mouth, expressive hands.

AQ Calm manner and detachment.

PI Self-honesty.

Here are the 12 subjects. Each is a different sun sign. Can you tell which subject is which sign? Answers are at the end of 7.1.1977.2.

Comment By chance the four incorrect verdicts are for consecutive signs. In 1981 the test was repeated. The panel of four (which included the two presidents from the previous panel) again got 8 correct out of 12, but this time their success was shown to be due to their ability to detect a subject's self-attribution via their interview questions, see 7.1.1983.2, a factor that would explain the results of the first test but which was not recognised at the time.



Top EPI scorers for FEAW out of N=60

Is picking sun element easier than picking sun sign? Find out via these top EPI scorers from an astrology conference in Melbourne in 1981. Answers are at the end of 7.1.1977.2..

7.1.1976.1 Extraversion and femininity for 234 sun signs

M Rockowitz, MA thesis, University of Windsor, Canada, 1976. An early little-known pioneering study that evaluated two claims now known to be wrong but was exemplary in its attention to detail and concern for astrology.

The author begins (in the days before *Recent Advances*) with this shrewd comment:

Astrologers (and the practitioners of other relatively esoteric personality assessment procedures such as palm readers and graphologists) have contended that their particular procedure yields an accurate and valid description of personality, because the personality descriptions generated are almost invariable [sic] accepted by the person whom they concern as being an accurate description of himself/herself. Moreover, some astrologers might argue that the popularity of astrology during the past two thousand years, and its persistence into and flourishing during modern times, constitutes further evidence for its validity.

A number of experiments have been performed which have attempted to respond to some of these contentions, based upon the idea that these "irregular assessment procedures" are in fact not valid, but only seem so to the individual who is described by them. These researchers hypothesize that the personality descriptions generated by these practices are very general and universally applicable, but that their target (the person whom they concern) doesn't realize their universal nature, believing the statements to be uniquely true of himself. This usually convinces him of the validity of the procedure involved, or at least shakes his skepticism (pp.18-19).

The author notes that the above experiments are tests of the Barnum effect and do not involve any actual astrology. For example Snyder, Bloom & Larsen (*Journal of Clinical Psychology* 32(2), 258-265, 1976) found that Barnum statements were equally well accepted whether they were said to be from astrology, graphology, or a psychological test, even though before receiving the statements the subjects (68 in each group) had rated their faith in the three techniques as astrology < graphology < psychological test, all differences being significant. Unsurprisingly the receipt of Barnum statements significantly increased the subjects' faith in the techniques and in the skill of the (fake) practitioner.

As a result, says the author, the above experiments:

have, in fact, not settled anything, as far as the actual validity of astrology is concerned, although they demonstrate that astrologers cannot claim that astrology is valid simply because their clients affirm what they [ie the astrologers] tell them about their personality (p.25).

In his survey of the literature (remember this is 1976) the author finds both positive studies and negative studies. Examples of negative studies were Silverman (*Journal of Psychology* 77, 141-149, 1971), who tested 954 subjects to see if their values as measured by their scores on the Rokeach Value Survey matched the values predicted by their sun sign, but the match with their own sign was not significantly different from the match with the other eleven signs. A follow-up test of 2978 Michigan marriages and 478 divorces (*Journal of Psychology* 87, 89-95, 1974) found no evidence of the links (good or bad) predicted by astrology. Newmayer & Anderson (*Drug Forum* 2, 271-278, 1973) tested 1386 heroin addicts in San Francisco to see if they were born more frequently under Scorpio and Pisces (said to be the signs most susceptible to drug abuse), and found that, compared with a control population from the USA,

Scorpio was the least frequent and Aquarius was the most frequent.

Examples of positive studies (apart from the non-sign studies by Nelson and Gauquelin) were Pellegrini (*Journal of Psychology* 85, 21-28, 1973), who tested 288 mixed students and found that the consecutive sun signs Aquarius through Cancer had significantly low scores. And Mayo, White and Eysenck (then in press, eventually 1978) who tested 2324 clients of British astrologer Jeff Mayo, whose mean extraversion scores varied exactly as predicted by sun sign (see 8.3.7). So the author set out to test the links with femininity and extraversion using 234 students for tests of sun signs, and a sub-set of 135 students (96 female) mean age 22 range 18–54 who had recorded birth times for tests of time-sensitive astrological factors.

Each subject completed the EPI (Eysenck Personality Inventory), the femininity scale of the CPI (California Psychological Inventory), and the Bem Sex-Role Inventory (an independent measure of femininity). From Sakoian & Acker's *The Astrologer's Handbook* 1973 the author extracted 203 factors relevant to extraversion. The 203 factors were then rated for relevance by ten graduate students in psychology and by three working astrologers. The ratings were averaged to give a graduate score and an astrologer score, which were then used to derive extraversion scores for each astrological factor tested. Astrological femininity scores were derived using a system based on planets in signs obtained by recycling ideas among three astrologers until agreement was reached. Here is the resulting correlation matrix:

	1	2	3	4	5	6	7	8	9	0
Extraversion										
1 Graduate E measure		.76	-.03	-.26	-.17	.08	-.39	-.14	.05	.01
2 Astrologer E measure	.76		-.03	-.15	-.29	.05	-.34	.00	-.04	.07
3 Hemisphere emphasis *	-.03	-.03		.14	.05	-.03	.04	-.14	.01	.04
4 Diurnal MA, JU, SA **	-.26	-.15	.14		-.03	-.03	.20	-.06	.02	.00
5 Odd-Even sun sign	-.17	-.29	.05	-.03		-.09	.38	-.08	.05	.00
6 EPI E score	.08	.05	-.03	-.03	-.09		.04	.01	-.14	-.22
Femininity										
7 Femininity composite	-.39	-.34	.04	.20	.38	.04		-.02	.06	.09
8 AQ-CN versus LE-CP	-.14	.00	-.14	-.06	-.08	.01	-.02		-.16	-.03
9 CPI femininity	.05	-.04	.01	.02	.05	-.14	.06	-.16		.49
0 BSRI androgyny	.01	.07	.04	.00	.00	-.22	.09	-.03	.49	

To reach $p = 0.05$ r has to reach ± 0.17 . * Upper hemisphere emphasis is E+.

** Subjects with MA, JU or SA in key sectors are E+ if MA or JU, E- if SA

The relevant results are shown in bold. **Extraversion:** despite good agreement between the graduate and astrologer composites based on 203 factors (1 vs 2, $r = 0.76$) and between the three individual astrologers (r ranged from 0.66 to 0.71, not shown above), none of the five astrological measures correlated significantly with EPI scores (mean $r = 0.00$). The correlation with odd-even signs ($r = -0.09$, $p = 0.30$) was in the wrong direction. **Femininity:** despite the agreement between CPI and BSRI scores ($r = 0.49$), neither correlated significantly with the two astrological measures (mean $r = 0.07$). Factor analysis of the matrix showed that EPI, CPI and BSRI scores were strongly grouped together, and the astrological measures were variously grouped together, but with nothing in common, which confirmed the lack of any useful link between astrology and the measured variables. The author concludes:

Clearly, the results obtained lend no support to the idea that astrological variables influence human beings as to the degree of femininity or extroversion they exhibit (p.84). ... It may well be that astrology, at least as traditionally practiced by astrologers, has no empirical validity. ... If astrologers could demonstrate any empirical accuracy at all, researchers could then move on to the question of how they do it. If not, the question of the validity of astrology could be abandoned with greater certainty (p.90).

Comment The author presents more results (eg of analysis of variance) than can be covered here, but none affect his conclusion. The observed correlation between odd-even signs and extraversion is now known to be due to prior knowledge (self-attribution), not astrology, and disappears when tested under controlled conditions, see 8.3.7. As for femininity, later studies have unanimously contradicted the result of Pellegrini, whose own data showed no significant difference between male and female femininity scores (Standen *Journal of Psychology* 89, 259-

260, 1975). Normally females score much higher than males, which suggests that Pellegrini's data were either grossly in error or more likely the result of a hoax by his subjects.

7.1.1977.1 Is Edgar Cayce right and Gauquelin wrong? N=1044

W H Church, *The A.R.E. Journal* 12, 105-130, 1977. A reaction to the early Gauquelin findings.



ARE = Association for Research and Enlightenment, founded in 1931 by Edgar Cayce (1877-1945, pictured in 1910), in Virginia Beach VI to study Cayce's trance readings (for which he never accepted money). Over 14,000 readings are on file and hundreds of books have been written about them. Nearly 1500 readings involve astrology because every personal reading began with a look at the person's "astrological conditions". He said he saw auras around people, spoke to angels, and heard voices from dead relatives, all typical of fantasy-proneness. But he was critical of his accuracy (hence ARE), as were others of his belief in Atlantis and how he could unknowingly give readings for dead people. The above information is from Wikipedia.

Church claims a New Astrology is in the making and is supported by this Cayce reading:

The strongest force used in the destiny of man is the Sun first, then the closer planets to the earth, or those that are coming to ascension [ie rising] at the time of birth of the individual (reading 3744-3).

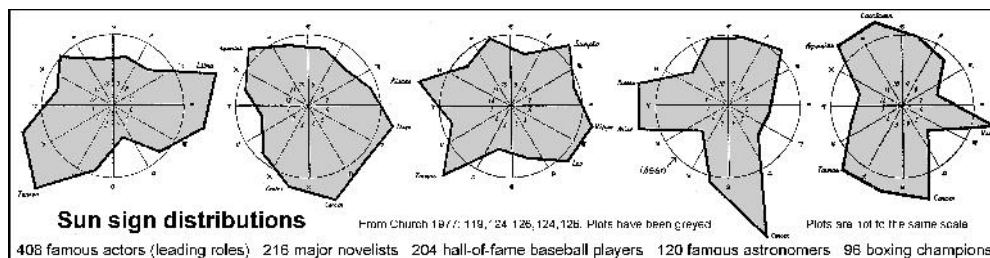
But the reading is directly opposed to the findings of Michel Gauquelin, who:

found no overt evidence whatsoever of the Sun's influence in a horoscope. ... even Gauquelin's discovery of career correlations for Mars, Jupiter, Saturn and the Moon bore no astrological significance beyond the specific planet's angular position in the horoscope as a link to the particular professional category (p.108).

So where had Gauquelin gone wrong? The author concluded that the problem was due to a lack of specialisation. For example the groups studied by Gauquelin included:

2088 sports champions (gathered, it seemed, from virtually every field of sport); 1409 successful actors (apparently including roles of every type, from romantic lead to comedian); 3647 successful scientists (doctors, physicists, astronomers, chemists, etc, all lumped unceremoniously together); 1352 writers (presumably combining all literary categories); and so forth. ... it at least confirmed the obvious: Ordinary talent produces ordinary results (p.111).

So Gauquelin's professional groupings were simply too large to reveal specific patterns in terms of orthodox astrology, which predicts that the most specific performers in any class should show the claimed patterns but not when diluted by lesser others. The author then presents sun sign distributions supporting his claim as in the examples below:



The author readily explains his results in astrological terms. Thus actors are high in Taurus and Libra, both ruled by Venus, which is an appropriate rulership for theatrical arts; while the two sporting groups (baseball players and boxing champions) differ because baseball is more extravert and boxing is more aggressive. A chi-squared test using expectancy = (sample size) / 12 shows the distribution for the above 408 famous actors to be highly significant $p < 0.0001$. He also finds that various planets for the same samples show similar highly non-uniform sign patterns, which leads him to conclude that these results lend "important corroboration to the Cayce readings on solar and planetary influence in human destiny" (p.129).

Comment But Church has failed to correct for demographic and astronomical variations. Nor does he recognise that, as sample sizes decrease, the relative peaks and troughs will increase and their "significance" will decrease. Thus the p values – which he does not report – for the other four distributions above are respectively 0.45, 0.50, 0.08, and 0.53, hardly suggestive of anything special happening. So their otherwise impressive non-uniformity is actually meaningless, as is the author's conclusion. It is Cayce who got it wrong.

7.1.1977.2 Respiratory distress syndrome in 122 infants

Professors Larry Michelson and Randy Wood, with J Wison, L Silverstien and J Piland, *CAO Times* 3(1), 21-23 and 3(2), 9-13, 1977. Respiratory distress syndrome involves respiratory failure in newborn infants. It can go undetected and is often fatal. Authors' affiliation is not stated but the study was sponsored by The Thirteenth Mansion in Florida.

Samples of 122 RDS infants and 145 control (ie normal) infants, all with exact times of birth, were taken from a random sample of 24,000 births in northeastern US hospitals. Initial tests found no statistically significant differences in birth times ($p = 0.15$), days ($p = 0.11$) or months ($p = 0.25$), all by t -test. If a significant result had been obtained for birth times:

it would be a simple matter to delay or induce labor until a more propitious time arrived ($p.23$).

which assumes that the birth time itself causes the condition, rather than merely suggesting a cause of the condition (in which case changing it would have no effect).

Sun signs tested by a chi-squared test using expectancies based on the control group gave results that at first sight seemed highly significant ($p = 0.0001$):

	AR	TA	GE	CN	LE	VI	LI	SC	SG	CP	AQ	PI	Total
RDS cases	9	10	11	11	6	13	9	4	10	11	18	10	122
Normal cases	12	11	13	8	18	11	12	12	11	17	8	12	145

But this result is invalid because the test requires expectancies to be theoretical (ie without sampling error) whereas they were based on a sample of normal cases that necessarily involved sampling error. The correct test is a 12×2 contingency test, which in this case gives chi-squared = 15.20, $df = 11$, $p = 0.17$, or not even marginally significant.

The authors used linear regression analysis to pick the 11 most significant chart variables that when weighted best predicted RDS. They do not say how many variables were considered in the first place. The 11 weighted variables were often notably non-traditional:

2.78	Moon aspecting VE/MC	1.29	Sun trine asteroid Juno
2.41	Mercury aspecting NN/MC	0.99	Jupiter sextile Neptune
1.62	Ruler of 6th Placidus house in 3rd house	0.83	Mars in 1st, 4th, 7th or 10th house
1.48	MC aspecting SO/NN	0.54	Ruler of 2nd Placidus house in 10th house
1.30	Sun in Aquarius	*	Negative weight (ie predicts normal)

Add weights to predict RDS. * -0.70 for Ascendant in Sagittarius, -1.08 for Sun square or quincunx Neptune.

When tested against the two samples the predictions were:

122 **RDS infants**: 74% RDS and 26% normal. 145 **normal infants**: 36% RDS and 64% normal.

The first result seems encouraging, but is less so in light of the 36% misclassification in the second.

The authors give no details, but the context suggests the predictions were obtained from the same samples used to derive the weighted variables, which makes them worthless. Indeed, their notably non-traditional nature suggests their total could have been something like 2500, in which case the 11 chosen are most likely to be significant by chance alone. Especially as the control group of 145 is remarkably small when 24,000 was available.

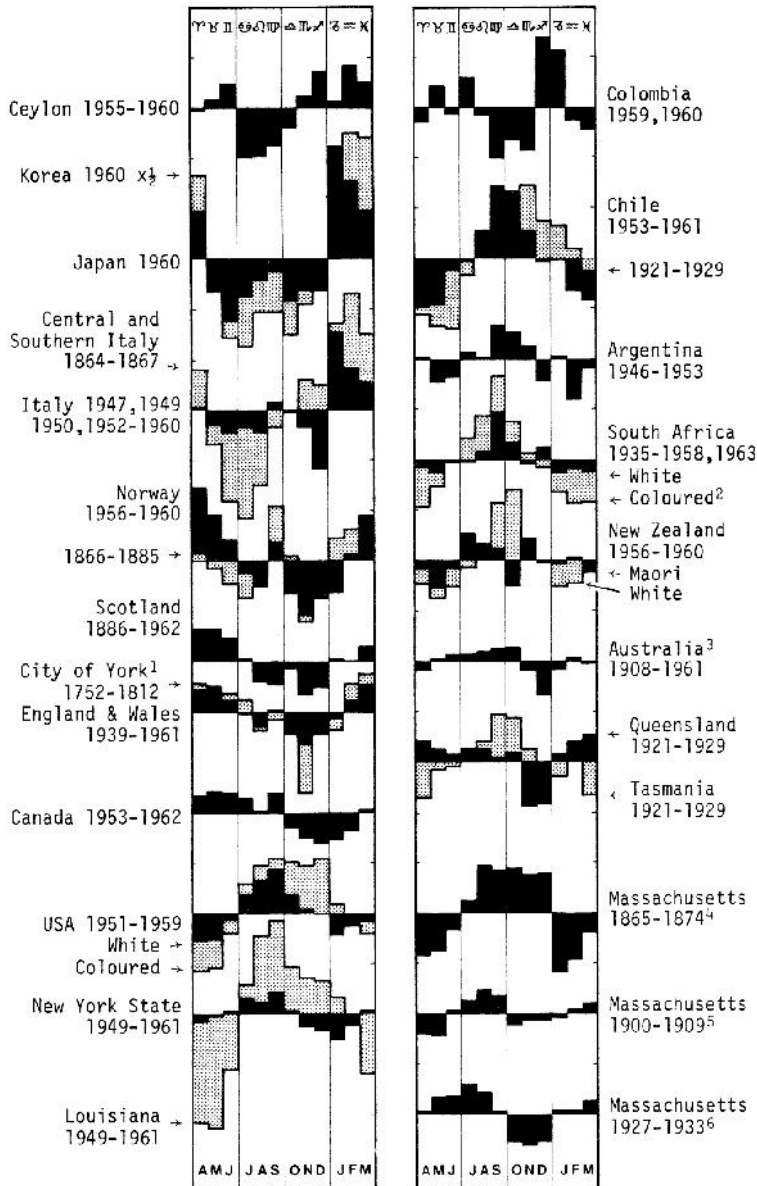
However, the authors state that a replication was successful ($p = 0.0001$) and explained 23% of the variance in predicting RDS vs normal births. If true their finding would be among the most remarkable in astrology, but again no details (not even a reference) are given.

Comment The above chi-squared mistake is a common one and has generally resulted (as here) in significance being seen where none actually exists, see also 7.5.1997.1. The absence of crucial details is inexcusable. Eysenck and Nias asked for clarification, as did Gauquelin, but were unsuccessful and "our letters were frequently not answered at all" (*Astrology Science or Superstition?* 1982:80). It is included here only as example of a study that would normally be excluded because of "insufficient detail for critical assessment", see 1.2.4, compounded by the authors' curious retreat into silence rather than discuss such striking results.

From top and from left: Water (PI SC CN), Air (AQ LI GE), Earth (CP VI TA), Fire (SG AR LE not SG LE AR), 4+ hits is significant. The 4 incorrect verdicts are in rightmost column. | Left to Right: 4 Fire, 1 Earth, 1 Air, 2 Water, total 6.

7.1.1977.3 Monthly birth distributions for 15 countries

To illustrate the large demographic variations that exist between and within countries, here are monthly plots for 15 countries in northern and southern hemispheres from Dean, Mather et al *Recent Advances in Natal Astrology* 1977:92.



Each plot shows the registered live births per month corrected for the varying number of days per month, all shown as deviations from the mean (mean = 100%). Each vertical division = 10%. At top are the nearest tropical sign equivalents. **Main features:**

- (1) Different countries have different distributions. But countries that appear similar do not necessarily have similar distributions, eg USA vs Canada, Australia vs New Zealand.
- (2) In general patterns in the southern hemisphere tend to be the reverse of northern patterns, eg New Zealand and South Africa vs UK and Norway.*
- (3) Large changes can occur over a century, eg Italy, Norway, and even over just a few decades, eg Chile, Massachusetts.
- (4) Large variations in the same country may not be apparent from even large national distributions, eg Qld and Tasmania vs Australia, NY state and Louisiana vs USA.
- (5) Large differences are usual between ethnic groups in the same country, eg USA, usually compounded by differences in economic status.
- (6) Differences can be much higher than those typically observed between sun sign counts and whatever is adopted as a reference. The would-be counter of sun signs is therefore faced with almost total (and usually fatal) uncertainty.
- (7) Data (now dated) is from Huntington, *Season of Birth* 1938. Cowgill, *Man* 1(2), 232-240, 1966. *Ecology* 47(4), 614-623, 1966. *Nature* 209, 1067-1070, 1966.

*Northern USA is an exception. High standards of living have made the pattern largely independent of climate and it tends (fortuitously) to resemble the S hemisphere's. The pattern in equatorial regions is uncertain (insufficient data).

1 N=5700. 2 Mixed race, not Bantu. 3 During 1908-1961 plot was unstable, main peaks and troughs each varied over 3+months. 4 N=383,000. Data for Massachusetts was then the best in the USA. 5 N=777,000. 6 N=520,000.

The above uncertainties faced by the would-be counter of sun signs are made even worse by: (1) Orbital effects, eg Sun spends more time in Cancer than in Capricorn. (2) Age incidence, where groups whose membership depends on being over a given age on a given date will be overloaded by those births longest at risk, see 7.1.2006.3. (3) Sampling variations that can seem like sun sign effects but the data required to provide adequate controls is almost never available. All of which makes counting sun signs effectively the most futile test in astrology, simply because clear conclusions are almost never possible. And the same for replications.

7.1.1978.1 Sun-Moon signs in 438 marriages

H.Boning, W van Dam, R.M.M.Hepp, A.Kattenburg, C.Kuypers, and R.H.Smit, *Tijdschrift Astrologie* 2(2), 2, 1978.

Soft aspects (60° , 120°) between the sun sign of one partner and moon sign of the other partner are said to indicate compatibility, while hard aspects (90° , 180°) are said to indicate incompatibility. Our group tried to replicate Kuypers' results for 438 married couples taken from his own medical practice as given in Rudolf Smit's *De planeten spreken* (1976:271) using a new sample of 736 couples taken from another doctor's practice. We counted the number of couples with each sun-moon aspect by tropical signs. The differences between observed and expected counts for ours and Kuypers' samples were as follows:

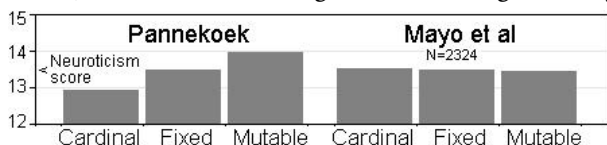
Angle between signs	0	30	60	90	120	150	180
Obs-exp for our sample (exp=245)	-9	0	10	15	-9	-14	9
Obs-exp for Kuypers sample (exp=146)	36	-11	-4	13	03	-23	8

Aspects other than 0° and 180° occur twice in the circle, for example 120° also occurs at 240° , so the above counts for 0° and 180° have been doubled to aid comparison. In both samples the results for the square (90°) are opposite in direction to tradition. For 0° , 60° , 120° , which are traditionally the most important aspects, the direction does not replicate. Overall the match between observed counts is poor, the correlation being only $r = 0.15$, $p = 0.75$, $df = 5$. These results are for sun-moon and moon-sun signs. When sun-sun and moon-moon signs were included, the correlation between observed counts was little different, being $r = 0.16$, $p = 0.73$, $df = 5$. In both cases neither astrological tradition nor Kuypers' results were confirmed.

7.1.1978.2 Neuroticism vs sign CFM for 600 sun signs

Leo Pannekoek, *Tijdschrift Astrologie* 2(2), 4-5, 1978.

This is a follow-up to the Mayo-White-Eysenck sun sign study, see 8.3.7, where Water sun signs tended to show higher neuroticism scores as predicted by astrology. In 1963, as part of a doctoral thesis, Dr GJS Wilde had obtained the neuroticism scores for two representative samples each of 600 ordinary Dutch people using the full version of the ABV (*Amsterdamse Biografische Vragenlijst* or Amsterdam Biographical Questionnaire). The scores and birth dates were later made available to Pannekoek, who predicted that the mean scores for Cardinal, Fixed, and Mutable sun signs would be significantly different. And they were in both samples,



with $p = 0.05$ and 0.02 respectively.

Comment Mayo et al did not test CFM, but its effect can be calculated from their N results for each sign, which as shown

above is no effect at all and therefore contradicts Pannekoek's finding here adjusted to the same mean as Mayo et al's. The difference is probably due to Mayo et al's larger sample.

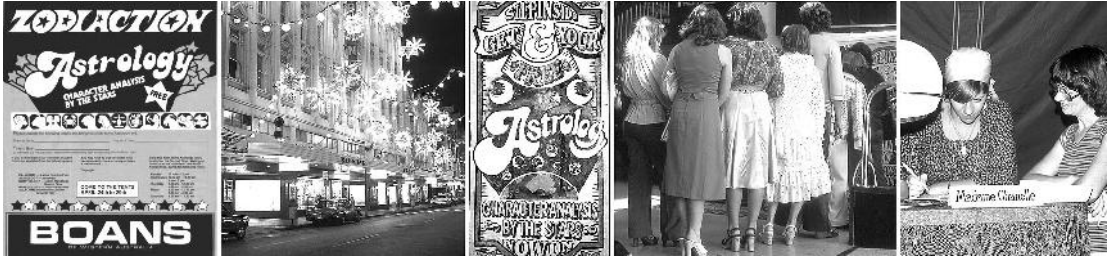
7.1.1978.3 Did 2045 clients come in clusters by sign?

Geoffrey Dean, Ronald Hedgcock et al. Unpublished study, Perth Western Australia April-May 1978.

The idea that an astrologer's clients tend to cluster by Sun sign or Moon sign is sometimes raised in astrological magazines. Testing is not easy because normally the spacing between clients is large and their number is small. But an opportunity to avoid both problems arose in 1978 when Boans, Perth's largest department store, decided to hold store promotions in their four main centres, and were persuaded to feature a *Zodiaction Week* in which fortune-tellers (trained by the authors) would tell customers their Sun, Moon and rising signs (obtained from tables via their birth data) and their Gettings hand type (FEAW via width/length), plus a brief interpretation, all for free. All inputs and results were written down for later analysis.

Zodiaction Weeks attracted 2045 customers. Most of the time there was a queue. Most birth times were too uncertain to allow analysis by Moon sign, as were the assessments by Gettings hand type. The observed numbers of clusters (not customers) by Sun sign were:

1978 dates	Store location	N	Number of clusters of			Signs in the clusters of 3
			Two*	Three	Four	
24-29 Apr	Perth	577	44	3	0	LE VI PI
03-07 Apr	Warwick	577	65	4	0	AR LE VI LI
07-12 May	Midland	484	44	4	0	GE GE VI CP
13-17 Mar	Rockingham	407	34	4	0	CN CN SG CP
Total observed			187	15	0	*Clusters of xxx were counted as xx and xx
Total expected			170.4	14.2	1.2	
p by chi2 df=1			0.18	0.50		



Form for birth data • Boans main store in central Perth • Sign outside the astrology tent • Typical queue • Inside tent. The four stores were 15-35 km apart and a *Zodiation Week* was featured in successive stores. The astrology tent in each store was open for about 2-3 hours twice a day, totalling 20 hours per store. Customers averaged 25 per hour. Results were provided as tick boxes on the birth data form with the disclaimer "no evidence they are genuinely valid".

Comment The above results are marginally in the right direction, possibly due to friendships based on shared birthdays, but they provide no significant support for the idea that customers arrive in clusters by Sun sign. Nor was there any tendency for them to arrive when their Sun sign matched the sign occupied by their Moon, Mercury, Venus, or Mars:

	Sign position during visit		Number of customers with that Sun sign										
Dates	Planet	Sign	Observed		Expected								
13-17 Mar	SO is in	PI	39		32								
03-07 Apr		AR	38		47								
24-29 Apr		TA	48		45								
07-12 May		TA	41	166	43	167							
All dates for the entries involving other planets	MO is in	AR	10		15		ME is in	AR	159	159	167	167	
		TA	11		14				167	167			
		GE	26		28			VE is in	AR	30		32	
		CN	28		25					TA	51		47
		SC	5		5				GE	50	131	43	122
		SG	18		11		MA is in	CN	84		80		
		CP	3		8				LE	91	175	87	167
		PI	18	119	25	131							
	Total of SO, MO, ME, VE, MA									750		754	

7.1.1979.1 Are sun sign concepts useful in therapy? N=116

DG Green. Solar Astrology: A clinical tool for personality assessment. *Review Monthly* [Australia] Nov 1979 pp.2-6.

The author hypothesised that persons undergoing psychological therapy would differ from those not undergoing therapy in their ability to recognise personality traits linked to their sun sign. Subjects were 116 males and females from diverse US backgrounds aged 18-65 (mean not stated). Of these 56 were receiving therapy in a clinic in southern Arizona. The remaining 60 were not receiving therapy and were gathered via Green's friends and relatives. Each subject completed a questionnaire asking for "innocuous background information" such as sex, occupation and date of birth for themselves and a close friend, and a checklist of brief unlabelled sun-sign clusters from four reputable astrology books (George, Lewi, Oken, Sakoian), namely:

Temperamental, enterprising, impulsive, daring (**AR**)
Materialistic, possessive, stable, stubborn (**TA**)
Talkative, restless, clever, versatile (**GE**)
Protective, moody, sensitive, empathetic (**CN**)

Idealistic, indecisive, refined, even-tempered (**LI**)
Determined, passionate, secretive, sarcastic (**SC**)
Optimistic, adventurous, jovial, frank (**SG**)
Ambitious, pessimistic, calculating, disciplined (**CP**)

Generous, dramatic, attention-seeking, pompous (**LE**)
 Critical, orderly, perfectionist, modest (**VI**)
 Patient, changeable, practical, serious (**Dummy**)

Inventive, aloof, eccentric, humanitarian (**AQ**)
 Compassionate, impressionable, gullible, vague (**PI**)

The dummy cluster disguised the sun-sign nature of the descriptions. The subjects ranked the thirteen clusters in the order that best matched (1) their own personality, and (2) the personality of their close friend. The numbers that matched the correct sun sign were:

Match was for	Choice >>	N=56 therapy		N=60 non-therapy	
		1st	2nd	1st	2nd
Self		5	7	18	24
Close friend		3	5	13	22

Total		8	12	31	46
Expected (2xN/12)		9.33	9.33	10	10
p by chi-squared		0.65	0.36	10 ⁻¹¹	10 ⁻³¹

If the dummy cluster was ranked 1st or 2nd it was ignored

The 60 non-therapy subjects scored very much more than expected by chance, whereas the 56 therapy subjects scored at chance level. The author concluded that the non-therapy subjects were more in touch with their real (ie astrological) self, whereas the therapy subjects were not, "implying a difference in their level of awareness and functioning" (p.5). He suggests that "exploring these differences in perception can be productive in the therapeutic process" (p.5). and that "any changes in self- and other-perception ... can be ascertained by periodic administration of the checklist" (p.6). The breakdown of subjects by sign was not given.

Comment The non-therapy subjects were friends of the astrologer-author and might therefore be expected to be astrologically knowledgeable or at least to suspect what was going on. The therapy subjects were strangers taken from professional social work practices and might therefore be expected to be astrologically ignorant or at least not to suspect what was going on. In other words the results are consistent with self-attribution effects due to prior knowledge of sun signs. Moreover the author counted 1st choices, and 1st+2nd choices combined, without separating them as shown above. He did not report the consistent tendency for 2nd choices to score higher than 1st choices, which suggests that social desirability artifacts were present. Thus a jovial frank Sagittarius for example could have moved a gullible vague Pisces from its otherwise first rank to second. For a clear example of such artifacts see 7.1.1997.1.

In 1981 these comments were submitted to the US author for his response. His reply was that he had appointed himself as astrological spokesperson for the North American continent, was dedicated to True Christian Ideals of Peace Brotherhood Perfection and Love, and that such a response would be a counselling service for which his normal fee for a one-day workshop was \$US3400. He subsequently offered to answer specific questions for only \$500.

7.1.1979.2 Self-attribution in sun sign astrology N=799

Kurt Pawlik and Lothar Buse, *Zeitschrift für Sozialpsychologie* 10, 54-59, 1979, the definitive study of sun sign self-attribution that set the standard for subsequent work. The authors are at the Psychological Institute of the University of Hamburg. A complete English translation by Eve Jackson and Dave Stevens is in *Correlation* 4(2), 14-30, 1984.

The link between sun sign and extraversion and neuroticism scores reported by Mayo, White and Eysenck (*Journal of Social Psychology* 105, 229-236, 1978) had attracted much attention from German media such as *Der Spiegel*. The possibility of error did not seem good. Yet:

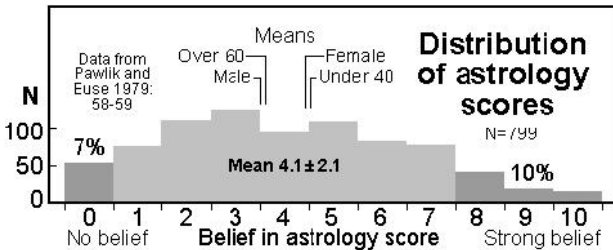
Although the personality differences between the different zodiacal groups were very small (they accounted for less than 1% of the variance in EPI personality scores), the findings demand an explanation (p.55). [However] Mayo et al carried out their research *solely* on subjects who had consulted an astrologer of their own accord on at least one occasion ... so their study did not allow for any subjects who were demonstrably ignorant of astrology (p.57).

To fill the gap they arranged for the editorial section of a large Hamburg daily newspaper to feature their university research project into astrology, and to ask as many readers as possible to receive and fill out questionnaires regardless of their attitude towards astrology. In return

applicants would receive their questionnaire results. Over 1000 applications were received by mail or phone, of which more than 900 gave addresses suitable for receiving questionnaires and a return envelope, of which 869 responded, of which 799 were usable (the rest were incomplete or from readers below the minimum age of 16). It was an unusually good response.

Questionnaires Participants had to fill out a German version of the Eysenck Personality Inventory as used by Mayo et al to measure E and N, a questionnaire to measure knowledge of astrology, and a form asking for education level, occupation, mother tongue, sex and birth data including time. Of the 799 people who provided usable data, 68% were female, 39% were under 40, 22% were over 60, 25% had only basic (non-matriculation) schooling, and German was the mother tongue almost without exception.

The astrology questionnaire had 10 items covering consulting an astrologer, reading sun sign horoscopes, and belief in a link between sun sign and personality. Subjects who said yes to 6+ items were rated *strong believers* (38% of total), yes to 4 items *believers* (32%), the rest were *non-believers* (30%).



The scores (yes responses) for the 799 subjects show a tail on the right due to the open-ended nature of *belief* whereas *no belief* has a sharp cut-off, but otherwise seem reasonably normal. Females believe more than males, and younger people believe more than older people.

Results The authors give analysis of variance results for the three levels of belief and three age ranges against mean E and N scores, but do not present them in a clear way that is easy to understand. For females (68% of N=799) the scores read from the authors' graphs were:

Subjects	Signs >> Odd	Even	Diff		Water	Non-water	Diff	
All believers	12.0	10.7	1.3	) p	12.8	11.0	1.8	) p
Non-believers	10.6	11.0	-0.4	) 0.01	10.0	10.0	0.0	) 0.02

Self-attribution predicts Odd > Even and Water > Non-water. Both are confirmed.

The above differences are comparable with those observed by Mayo et al [for 1407 believing females they were 0.63 and 0.48 respectively, from their p.233]. Effect sizes as point-biserial correlation coefficients were 0.16 and 0.15 respectively for believers and -0.05 and 0.01 for non-believers, one-tailed *p* of the believer/non-believer difference = 0.02 and 0.08.

The results for males were similar in direction but their smaller sample size and weaker level of belief were insufficient to raise them to significance. The authors conclude:

With a single exception (male subjects over 60), the links reported by Mayo et al between sun sign and personality scores replicated only for those subjects who have a positive attitude towards astrology ... without exception non-believing subjects failed to replicate their results. ... Thus our positive results arose because the subjects believed in astrology, attributed to themselves their sun sign characteristics, and answered the personality test accordingly (p.68).

7.1.1979.3 Neuroticism vs Water for 426 sun signs

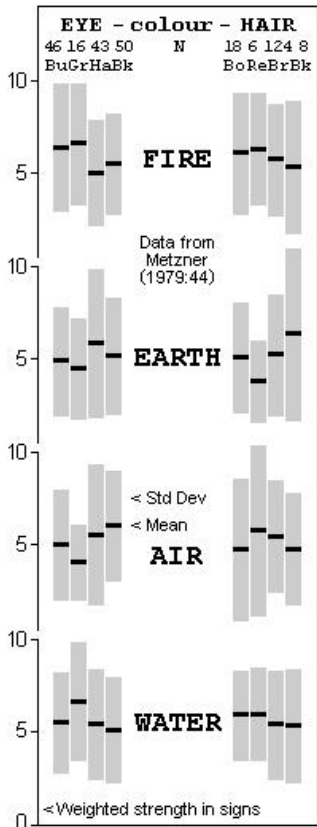
Leo Pannekoek, *Tijdschrift Astrologie* 3(1), 14-15, 1979.

A follow-up to the author's study in 7.1.1978.2. The author had a TV programme on astrology. On one occasion he sent out copies of the short-form ABV measuring neuroticism (17 items each scored 1, 2, or 3) to 6000 viewers in May 1971. 500 were returned, and 426 were usable. The mean scores for Water signs vs other signs were 31.23 vs 29.64 for 172 males, and 36.12 vs 34.82 for 254 females, both consistent with the 1978 findings of Mayo and Eysenck, see 8.3.7. The author notes that his results are marginal, his sample is self-selected (and therefore likely to be biased) and too small to allow correction for age.

7.1.1979.4 Element vs eye and hair colour in 156 subjects

Ralph Metzner, *Cosmology Bulletin* 9&10 double issue, 40-43, 1979. And personal communication 1979.

Participants (60 male, 96 female) at a US summer study conference reported their eye colour



(46 blue, 16 green, 43 hazel, 50 brown, total 155), hair colour (18 blond, 6 red, 124 brown, 8 black, total 156), and birth data including time. Mean age was 42, standard deviation 12.6, which implies a range of about 17-67 years. All were Caucasian. The weighted strength of each element in each chart was calculated using weights of 3 (SO, MO, Asc), 2 (ME, VE, MA, MC), and 1 (JU through PL). Mean strength 5.5, range 0-17, sd 3.1, N=156.

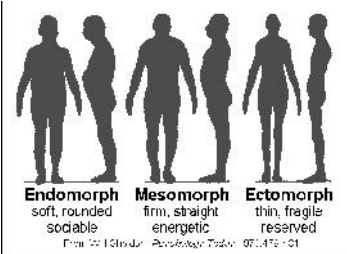
t-tests of the difference in mean element strength between each pair of eye or hair colours suggested “a moderate relationship” between fire and the lighter colours (blue and green eyes, blond and red hair), and between earth and the darker colours (hazel and brown eyes, brown and black hair). The element results are plotted in the adjacent graph; differences between colours are very small when compared with their differences within colours shown by the grey bars (standard deviations).

4 x 4 contingency tests of counts by SO, MO and Asc element vs eye or hair colour showed near-significant results only for SO (fire with blue eyes and blond hair but not red hair; earth with hazel or brown eyes and brown or black hair; water with green eyes), which goes “counter to the usual astrological assumption that the Ascendant is the crucial determinant of appearance”.

The author notes that his findings are the first evidence of a link between cosmic factors at birth and physical appearance, which if confirmed is “an interesting challenge to astro-biological explanatory theories” (p.42).

Comment The author's study is a welcome attempt to address the usual disagreements, for example the hair colour associated with a particular sign can be anything from blond to dark (*Recent Advances* 1977:401). His sample sizes were reasonable for a pilot study but he did not take age into account or correct for the number of tests. Thus of his 48 t-tests only two gave $p \leq 0.05$ vs 2.4 expected, and five gave $p \leq 0.1$ vs 4.8 expected. Of his six 4x4 tests only one gave $p \leq 0.1$ vs 0.6 expected. So the claimed relationships are most likely illusory.

In a related 1980 version in the *Journal of Geocosmic Research* co-authored with Richard and Jean Holcombe, a test is made of Sheldon's somatotypes obtained via the subjects' scores on the Cortes-Gatti somatotype test. The correlations were:



		Cardinal	Fixed	Mutable
Males N=60	Endomorph	-.20	.23	-.04
	Mesomorph	.05	-.00	-.05
	Ectomorph	.11	-.20	.10
Females N=96	Endomorph	.10	-.05	-.05
	Mesomorph	-.16	.22	-.04
	Ectomorph	.08	-.19	.10

One result ($r = 0.22$ for female mesomorphs) is individually significant ($p = 0.033$), which among eight results is not genuinely significant. Correlations with element were equally nonsignificant, as were correlations between the height/weight ratio and element, and between heart rate and Fire. The authors note that the results are not only nonsignificant but also inconsistent, thus fixed signs correlated most with endomorphs in males but with mesomorphs in females, and vice versa for the signs that correlated least.

7.1.1979.5 Astrological hostility scale tested on 72 subjects

Ronald B Tiggie, MA thesis, Department of Psychology, California State University, Long Beach 1976, 48 pages, Reduced to one page in Ronald B Tiggie and Martin S Fiebert, *Perceptual and Motor Skills* 49(3), 858, 1979.

In astrology Mars and to a lesser extent Pluto are held to indicate aggression, and Venus the opposite. To test this idea, 142 psychology students at California State University Long Beach completed five subscales (53 items) of the Buss-Durkee Inventory for measuring hostility, namely assault, indirect hostility, irritability, suspicion, and verbal hostility. These five subscales differentiated between high- and low-hostility subjects (three subscales that did not differentiate were not used). The test-retest reliability using college students was 0.82.

Of the 142 students, 43 males and 29 females provided birth data including birth times within 30 minutes, and for each an astrological hostility score was calculated based on weighting (guided by tradition) Mars and Pluto by house position, and by the planets associated with them by aspect, and by all planets according to their orb by major aspect and parallels of declination. A control score was calculated in a similar way for Venus. The top weights were:

House position of MA, PL, VE: **7** for 1 and 10. **6** for 4, 7, last half of 12. **5** for 5, 8, 9, 11. **4** for 2, 3, first half of 12.

Associated planets: **5** for MA or PL with SO, MO, UR, PL or MA. **5** for VE with NE. **4** for MA, PL with ME, JU, SA.

Orb for major aspects: **2** for $\leq 4^\circ$. **1** for $> 4^\circ$ up to 8° . **1** for parallels of declination orb $\leq 1^\circ$.
The main factor was thus similar, but not identical, to angularity in the order AS > MC > IC > DS.

The author also generated a further score of 1-9 based on his reading of the whole chart. No means or standard deviations are reported for any score, but the Pearson product moment intercorrelations between the scores for each variable were as follows (N=72):

Score	PL	MA+PL	VE	MA+PL-VE	Whole chart	Inventory
MA	-12	.65	-.01	.57	.23	.25 $p = 0.04$
PL		.67	.02	.59	.15	-.01 0.93
MA+PL			.02	.87	.30	.18 0.14
VE				-.46	-.04	-.08 0.51
MA+PL-VE					.28	.21 0.08
Whole chart						.04 0.74

Correlation with inventory scores was marginal for Mars ($r = 0.25$), negligible for Venus but in the right direction ($r = -0.08$), negligible for Pluto and in the wrong direction ($r = -0.01$), and negligible for the whole chart ($r = 0.04$), showing that an ability to see hostility in a chart was not convincingly supported. Intercorrelations between the three components of the Mars score and the inventory score showed that house position was not relevant, and that removing it from the Mars score slightly improved the correlation with inventory scores:

Component	Assoc planets	Orb of planetary aspects	Inventory
Mars house position	.14	.16	-.05
Associated planets		.56	.24
Orb of planetary aspects			.25
Mars score minus house position, all cases			.27 $p = 0.02$
43 males			.16 $p = 0.32$
29 females			.41 $p = 0.03$

The male:female results above are the closest the author gets to a replication. He concludes that the "significant, albeit low, correlation between the Mars score and the hostility scale has implications for both psychology and astrology", even though it suggests that "the influence of Mars, while related to hostility, may be much weaker than traditionally considered by astrologers and in practice may have very little predictive value in individual cases".

Comment When corrected for the number of tests, the Mars result is no longer significant. But could it have been due to self-attribution? A study of 174 psychology students at the same university (Jackson and Fiebert, *Journal of Psychology* 105(2), 155, 1980) found a very small and nonsignificant r of 0.007 ($p = 0.49$) between EPI extraversion scores and sun sign polarity, which suggests that self-attribution was not enough to explain the Mars result.

7.1.1980.1 How well do astrology books agree?

William R Balch, Testing the validity of astrology in class, *Teaching of Psychology* 7(4), 247-250, 1980.

In 1977, as a preliminary to testing the validity of sun signs, the author extracted the traits

said to describe each sign from 11 astrology books published during 1964-1976, mean 1971, all of which had short sections that listed the traits for each sign. The books were:

Chamberlain *Astro analysis* 1970, Cooper and Weaver *An astrological index to the world's famous people* 1975, Gettings *The book of the zodiac* 1972, Goodman *Sun signs* 1968, King *The cosmic influence* 1976, Lee *Dictionary of astrology* 1968, Leek *How to become your own astrologer* 1970, Lynch *Table book of astrology* 1969, MacNiece *Astrology* 1964, Octopus Books (eds) *Understanding astrology* 1973, Sakoian and Acker *The astrologer's handbook* 1973.

Over the 11 books the top three traits for each sign are shown below in italics and their frequency in bold. Traits in () are synonyms counted as occurrences of the trait in italics:

Aries	<i>pioneering</i> (adventurous) 10 , <i>enthusiastic</i> 7 , <i>courageous</i> (fearless, daring, dauntless) 7 .
Taurus	<i>stable</i> (steadfast, steady) 6 , <i>stubborn</i> (head-strong) 6 , <i>well-organized</i> (well-ordered, systematic) 4 .
Gemini	<i>intellectual</i> 7 , <i>adaptable</i> (mutual, versatile) 6 , <i>clever</i> (ingenious) 4 .
Cancer	<i>sensitive</i> 9 , <i>nurturing</i> (maternal) 9 , <i>sympathetic</i> (compassionate) 7 .
Leo	<i>extraverted</i> (out-going) 5 , <i>generous</i> 5 , <i>authoritative</i> (masterful, leading) 5 .
Virgo	<i>critical</i> (analytical) 10 , <i>exacting</i> (painstaking, perfecting, precise) 8 , <i>intelligent</i> (ingenious) 7 .
Libra	<i>harmonizing</i> (mediating, co-operative) 6 , <i>just</i> (lawful, impartial) 5 , <i>sociable</i> (popular, likeable, friendly) 5 .
Scorpio	<i>secretive</i> 7 , <i>strong</i> (forceful, powerful) 5 , <i>passionate</i> (romantic, erotic) 5 .
Sagitt	<i>honest</i> (frank, truthful, candid) 8 , <i>impulsive</i> (restless) 6 , <i>optimistic</i> 5 .
Capric	<i>ambitious</i> 8 , <i>hard-working</i> (persevering) 6 , <i>cautious</i> (conservative) 5 .
Aquarius	<i>original</i> (non-traditional, creative, unconventional) 7 , <i>open-minded</i> (broad-minded) 5 , <i>independent</i> 4 .
Pisces	<i>kind</i> (loving, warm) 5 , <i>sensitive</i> 5 , <i>creative</i> (artistic) 5 .

The mean occurrence over 11 books is 6.2 sd 1.6 N=36, range 4-10. **Comment 1** Given that signs are the most disconfirmed factor in astrology, see end of 8.3.9, a mean occurrence at this level indicates a not unexpected tendency for astrological authors to copy from each other.

Later 164 psychology students rated their applicability by a mark on a line with *inapplicable* at one end and *applicable* at the other; each set of three traits was listed at random and identified only by a number. When checked against the students' actual sun sign, 88 of the marks were in the applicable half, and 76 were in the inapplicable half, which was in the right direction but was explainable by prior knowledge of sun signs and was not significant ($p > 0.20$).

Comment 2 The sign traits given in *Recent Advances* (1977:122), obtained by listing the traits given by leading authorities, mainly Carter *The Principles of Astrology* 1971, Davison *Astrology* 1969, Hone *The Modern Textbook of Astrology* 1968, and Mayo *Teach Yourself Astrology* 1970, and then selecting those which were most representative and best distinguished one sign from another, are shown below. Traits also in the previous list including synonyms are in italics:

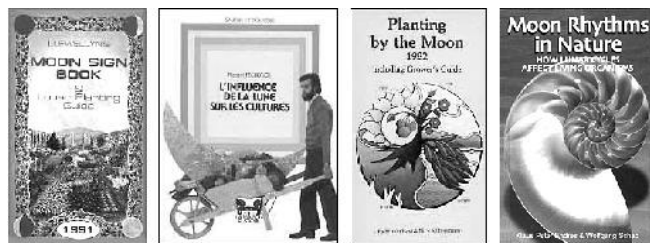
	Socially desirable traits	Socially undesirable traits
Aries	bold, energetic, assertive	selfish, insensitive, aggressive
Taurus	practical, conservative, possessive	obstinate, grasping, fixed ways
Gemini	lively, <i>versatile</i> , restless	superficial, erratic, two-faced
Cancer	emotional, protective, <i>sensitive</i>	moody, touchy, unreasonable
Leo	proud, magnanimous, <i>generous</i>	domineering, conceited, shows off
Virgo	<i>analytical</i> , logical, industrious	fussy, interfering, unemotional
Libra	pleasant, <i>harmonious</i> , tactful	indecisive, untidy, stubborn
Scorpio	intense, <i>passionate</i> , <i>secretive</i>	resentful, vindictive, obstinate
Sagitt	active, adventurous, likes freedom	extravagant, careless, tactless
Capric	<i>cautious</i> , practical, <i>persevering</i>	selfish, exacting, narrow mind
Aquarius	detached, <i>original</i> , humanitarian	perverse, eccentric, low integrity
Pisces	sympathetic, spiritual, impressionable	confused, impractical, temperamental

Comparison of the lists supports the previously observed tendency for authors to copy from each other. But none of the socially undesirable traits are in the previous list, a trend that Balch confirmed when he found that an average of 8.3 out of the 12 marks made by his 164 students appeared in the applicable half of the line, whereas only 6 should appear if the marks were unbiased (by *t*-test the difference is very significant $p < 0.0001$). He concludes "the

7.1.1981.1 A lunar sidereal rhythm in crop yields

All Moon-gardening calendars agree that some kind of Moon sign effect at the time of sowing is important for maximising yield, but they do not agree on which zodiac should be used (tropical or sidereal) or on the zodiac signs which produce the best effect. Here experimental work will be used to examine these different possibilities. Crop yields vs Moon's position at sowing, in experiments performed by Colin Bishop in Wales in 1976, 1977 and 1978 show that 27.3 day sidereal rhythms may be present. A wave-harmonic approach to such rhythms in three years of sowing data showed that lettuce maximum yield occurred in sidereal Water signs, and radish maximum yield occurred in sidereal Earth signs, the mean increase in yield being around 30-40%. Moon phase had no effect. The results can be criticised for the consistent small yields due to poor soil and sometimes to drought conditions, and it is hoped that similar experiments will be performed under better conditions.

The idea that the Moon affects plant growth is an old one. It can be found in the folklore of ancient societies ranging from the Celts in Britain to the Maoris in New Zealand. Roman historian Pliny the Elder in his *History of Nature*, Book 18, gives much advice on planting by the Moon. Today it is still a rural tradition, and in most countries you can buy Moon gardening guides. Less well known to buyers is the existence of at least three different Moon systems, each disagreeing with the others, so testing Moon gardening claims is not simple:



Left: Astrological Moon planting guides from the USA (plant during the increasing phase, published annually since 1906 with annual contests for the best fruit or vegetable garden grown according to its guidance), France (plant in tropical Water signs), and the UK (plant in sidereal Water signs). Each system has variations (eg depending on whether the yield is above or below ground) and each claims superior results, but they cannot all be

right. **Right:** This fine resource (Endres and Schad, *Moon Rhythms in Nature* 2002, translated from the original 1997 German) contains over 1100 references and provides good evidence that moonlight does affect plants, either directly eg via stomatal activity or indirectly eg via insect activity, but such effects are very different from those claimed for Moon planting. Despite the authors' evident attachment to natural rhythms, the word *astrology* is never mentioned.

Regardless of which system we follow, there are only a limited number of Moon days each month in which to plant. But we can't just plant on those days and on other days for comparison, because seeds planted earlier will have more growing time, and seeds planted later will have less. Also, at the first warm spell, ordinary gardeners may assume that spring has arrived and plant their seeds, whereas Moon gardeners will wait until the first Moon day. But early warm spells are usually followed by a cold one, when any seeds planted earlier may rot. And plants that suffer set-backs when young rarely do as well as plants that have

flourished right from the start. So contrary to what we might expect, seeds planted later in spring will probably do better than seeds planted earlier. Conclusion: Moon planting may produce better results than ordinary planting, but the Moon may have nothing to do with it.

7.1.1982.1 Sun-Moon signs in 1684 marriages

Cornelis Kuypers, *Wetenschap & Astrologie* 6(1&2), 2-12, 1982.

Another look at the previous two samples of 438 couples from the author's own medical practice and 736 couples from another doctor's practice. There are four combinations of Sun and Moon sign for each couple (SO-SO, SO-MO, MO-SO, MO-MO). For each sample the total counts for each aspect between signs are as follows, where each sample mean has been adjusted to 100 and the counts for 0° and 180° have been doubled to aid comparison:

Aspect	0	30	60	90	120	150	180	Mean
N=438	118	95	96	115	97	83	109	100
N=736	89	103	103	107	98	92	106	100

Other than the peaks in 90° and 180°, which are contrary to what tradition might suggest, the peaks in N=438 are not matched by peaks in N=736, nor do they show the similarity expected if signs had a consistent effect (the correlation is weak and nonsignificant $r=0.16$, $p=0.73$, $df=5$). The author repeated the analysis with 253 reserved couples and 257 outgoing couples, for which the results are as follows. Each sample mean has again been adjusted to 100:

Aspect	0	30	60	90	120	150	180	Mean
N=253	108	100	94	102	98	94	117	100
N=257	104	100	88	101	110	98	102	100

This time the agreement is slightly better than before, but the peaks are still inconsistent and the correlation is still nonsignificant $r=0.37$, $p=0.41$, $df=5$. For completeness, and as a final check, the author combined all four samples, with the following results:

Aspect	0	30	60	90	120	150	180	Mean
N=1684	102	100	98	107	100	91	108	100

Tradition predicts high values for 0°, 60° and 120°, and low values for 90° and 180°, but the actual results tend to be in the opposite direction. Overall there is no clear support for either signs or for Sun-Moon traditions.

7.1.1982.2 Sun-Moon signs in 201 marriages

Peter Tellegen, *Wetenschap & Astrologie* 6(1&2), 26-35, 1982.

The author attempts to replicate the above results of Kuypers with a new sample of 201 couples, for which the results for aspects by sign are as follows. As before, sample mean has been adjusted to 100 and the counts for 0° and 180° have been doubled to aid comparison:

Aspect	0	30	60	90	120	150	180	Mean
N=201	83	101	89	113	101	104	111	100

The results show large variations due to the small sample size, and again tend to be the opposite of what tradition predicts. Versus N=1684 (see 7.1.1982.1 above) $r=0.34$, $p=0.48$, $df=5$.

7.1.1983.1 Venus-Mars signs in 450 marriages

Cornelis Kuypers, *Wetenschap & Astrologie* 7(1&2), 16-17, 1983.

Links between the Venus sign of one partner and Mars sign of the other partner are said to be important for sexual relationships. The total count for each aspect between these signs in 450 married couples are as follows. As before, the sample mean has been adjusted to 100 and the counts for 0° and 180° have been doubled to aid comparison:

Aspect	0	30	60	90	120	150	180	Mean
N=450	84	99	106	99	101	98	112	100

For 60°, 90°, 120° the differences are small but their direction agrees with tradition. For 0°, 180° the differences are larger but their direction disagrees with tradition. Overall there is no

7.1.1983.2 Can self-attribution explain sun sign guessing? N=12

In a test conducted in 1975 by the UK Sunday newspaper *News of the World*, a panel of four astrologers were able to guess the sun signs of 8 out of 12 subjects (one for each sign) following one or two interviews lasting no more than five minutes each, vs the 1 out of 12 expected by chance. The test was repeated in 1981 and again the panel got 8 out of 12 right. The subjects were friends of the reporter, who had a great interest in astrology. The panel sat around a table downstairs in the presence of the reporter, and the subjects were brought in one at a time in random order. The subjects not being interviewed sat upstairs and talked. Alcohol flowed freely and the atmosphere, including that of the interviews, was most convivial. The panel could ask what questions they liked but not about birthdays. The panel were not told the results until the test was finished. On both occasions the panel included Julia Parker and John Naylor (son of RH), two of the UK's leading sun sign astrologers. So how did they do it?

Furthermore, when invited to describe their sign interests, they could reply at length, hence only a small amount of astrological role-playing was needed to provide good clues. For example they said: "Anything physical attracts me" (Aries). "The most important thing in my life is being a mother" (Cancer). "I like a neat and clean home" (Virgo). "I'd rather not wear a tie" (Sagittarius). In short, the results seemed to rely on self-attribution, the tendency for people who believe in sun signs to shift their self-image in the corresponding direction [see next summary], which can then be picked up by artful questioning. Indeed, the level of self-attribution, as determined by my own questions under less than ideal conditions, successfully predicted the test's outcome for 6 out of 8 hits and 3 out of 4 misses. In summary, successful sun-sign guessing can be explained by subject selection, self-attribution, and body language.

7.1.1983.3 Astrological importance of names

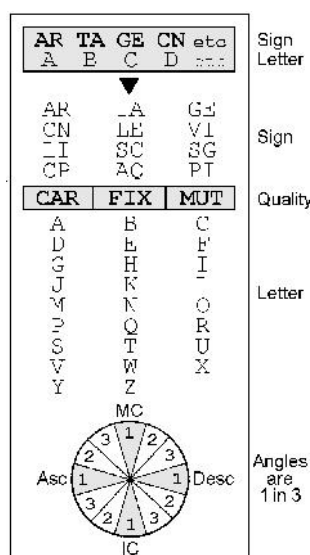
Karmen Goizueta, Astrological Importance of Names, *CEO Times* 5(3), 41-46, 1983.

To follow the author's procedure, list the zodiac signs in order with the letters A-Z beneath, as in the top shaded box. You need to repeat the 12 signs to cover 24 of the letters, and then add Aries and Taurus to cover the full 26 letters.

Quality	I found that one of the initials (three are needed) of a person's name always matched the corresponding sign on one of the angles, provided the charts were reliably based on birth certificates or had been corrected by me or another reliable astrologer. Thus for CEO Carter, his initials match GE LE GE and GE respectively, and his Ascendant is GE. It also works for Czech, French, German, Italian, Latin, Russian and Spanish names and alphabets. My results suggest that names could be a way to validate the time of birth.
Letter	

Angles
are
1 in 3

In 810 out of 930 cases or 87%, only two initials were available, and in 145 cases the method failed to work, giving 18% misses. The initials also showed the sign position of either the Sun, Moon



or Moon's North Node. The angle and other factors thus shown had a meaning that described the main motivation of the individual. For example persons with a match between an initial and the IC have an interior conflict and are at war with themselves. After much work I have come to the conclusion that:

The theory works in all charts, providing there are three or more initials to consider, and that they are all absolutely reliable charts (p.45). [All this in the absence of controls, probability calculations, and freedom from manipulation]

Comment The author's work in assembling 930 cases is impressive. The theory could easily have been tested (but wasn't) by reversing or randomising the sequence of letters. So what is the match expected by chance? The angles divide the zodiacal circle into four quadrants, so the matching between signs and letters effectively proceeds in steps of $12/4 = 3$ signs, which corresponds to the qualities as in the second shaded box. To simplify calculation, assume that the angles are about 90° apart, that there are three initials, and that none of them duplicate the same quality (as would be the case if two or three initials were the same).

To perform the simplified calculation, compare the first initial with all three qualities. If the matching quality is not angular, ignore that quality and compare the next initial with the remaining two qualities. If the matching quality is not angular, again ignore it and compare the remaining initial with the remaining quality, which by this time cannot be other than a hit. In formal terms the probability of a hit for each initial is:

- First initial: $4/12$ (ie four signs are available, each matching an angle, out of a total of twelve signs)
- Second initial: $4/8$ (not $4/12$ because four signs are no longer available due to the first initial)
- Third initial: $4/4$ (not $4/12$ because eight signs are no longer available due to the first and second initials)

The overall probability of a miss is then $(1 - 4/12) \times (1 - 4/8) \times (1 - 4/4) = 0$, so a hit is certain. In other words the author's apparently astonishing results are clearly no more than would be expected by chance. If only two initials are available, the probability of a miss is $(1 - 4/12) \times (1 - 4/8) = 0.33$ or 33%, roughly comparable with the 18% observed.

These calculations are only as good as the simplifying assumptions, and of course on the extent to which the charts have been corrected. More accurate expectancies would require the modelling of both the actual separation between angles and the actual occurrence of initials, but the formidable effort required is hardly justified given the existing clear hint – and no clear reason to expect a correlation in the first place. Indeed, the whole thing is so simple-minded that it has been included here only as an example of the kind of study that would normally be excluded because there is "insufficient detail for critical assessment", see 1.2.4. Even if there was an effect over and above chance, we could never know *in an individual case* whether it was genuine or due to chance, so it would have no practical use.

7.1.1984.1 Does adding planets improve the validity of signs?

Brian Riley, *APP* 2(2), 11-14, 1984.

One of the most frequent objections raised against statistical research into signs is that only single factors are studied, and that numerous other factors allegedly influencing a particular trait are ignored. So my test looked at the sign position of Ascendant, Sun, Moon, Mercury, Venus, and Mars. The polarity and element scores of 24 subjects with extreme scores on the Eysenck Personality Inventory were compared with their E and N scores. The observed correlations were $r = 0.02$ for E and $r = -0.02$ for N, or essentially zero. So the traditional claims of links between personality and signs of the zodiac are unfounded.

7.1.1984.2 First meta-analysis of sun signs vs extraversion

Michael Startup, PhD thesis *The Validity of Astrological Theory as Applied to Personality*, London University 1984.

Tests of personality vs sun sign for 911 subjects were positive only for extraversion, which replicated some existing studies. Therefore existing studies were meta-analysed. The results confirmed that the effect is real and apparently due to self-attribution:

Sun-sign and extraversion: a meta-analysis of 13 studies (p.256)

Sun-sign and extraversion: a meta-analysis of 13 studies (p.256)														Unwtd mean
N	1162	295	342	169	460	87	120	595	1740	256	454	241	213	472
Power		.71	.79	.52	.88	.33	.42	.94		.67	.88	.65	.61	.67
Effect) <i>d</i>	.19	.16	.11	.16	.02	.10	-.08	-.04	.18	.15	.18	.21	.11	.13
Size) <i>r</i>	.098	.090	.057	.077	.019	.052	-.042	-.021	.093	.073	.090	.121	.055	.058

Seven of the 13 results are non-significant ($p > 0.05$). But when combined, $p < 0.00001$

Could there be a file drawer problem? I calculated that some 71 non-significant studies of the polarity effect would be needed to render the overall meta-analysis $p > 0.05$. It seems very unlikely that this many studies are lying around for want of a significant result. Conclusion:

Since the number of studies [of sun signs] that have been conducted is now quite large, the predictions [delineations] that have been tested are varied, and the data that have been sampled are voluminous, and yet the evidence is so poor, it is probably time for all to agree that enough is enough; the sun-sign idea is simply not valid (p.246).

Comment But as the remaining summaries confirm, no astrologer took much notice.

7.1.1986.1 Sidereal sign delineations vs Gauquelin trait words

Arthur Blackwell, *APP* 4(3), 18-21, 1986.

The Gauquelins applied statistical tests to tropical sign keywords but found nothing that was significant. The author was familiar with the work of two siderealists of renown, Fagan and Gleadow, so he decided to test their sidereal sign keywords against the Gauquelin trait word list. Sidereal signs are a more ancient idea than tropical signs and are still in use in the East. Nevertheless their results weren't positive either. In the author's opinion the keywords that are ascribed to the sidereal signs by Fagan and Gleadow are useless and should be abandoned by any siderealist still using them. [Blackwell was not aware of Sunley see 7.1.1974.1 above]

7.1.1986.2 Predicting military leadership for 281 soldiers

George Noonan *Journal of Research of the American Federation of Astrologers* 3(1), 17-26, 1986.

The author notes that a military unit tends to become ineffective in combat when casualties exceed a certain level, typically 10%-20%, which can be offset by:

identifying those soldiers who are leaders, and who by dint of their personalities can inspire otherwise reluctant individuals to become at least temporary fighters. It is just such a task for which astrology is best suited (p.19).

His first step was to talk with officers in the Army Training Command about the positive traits of leaders (leadership, courage, ability, initiative, strong will, firmness, sense of justice, enthusiasm) and the negative traits (cowardice, arrogance, pacifism), and then choose relevant chart factors for each trait. Because only dates of birth without times are routinely known for army personnel, only planetary sign positions and aspects (about 25 of each) could be used.

His second step was to weight each factor according to its relevance, for which he gives these weights for his top factors (factors with weights of 1 or less are not listed below):

Positive: +5 SO in AR, +4 MA in SC, +3 none, +2 SO in LE, MA in AR, SO-0/120-MA, MO-0-JU, MA-60/120-SA.
Negative: -5 none, -4 SO in LI, ME-90/180-MA, -3 MO in SC, MO in LI, SA in AR, SA in SC, -2 SO-0/90/180-JU.

His third step was to compare the ranked results with 20 ranked lists prepared by company commanders of the best and worst men in their command, a total of 281 noon birth charts. As an example the author gives these rankings for one company (1 = highest rank):

Army highest	1	2	3	4	5	6	8	10	11	Lowest	1	2	4	5	6	7	8	9	9
Birth charts	2	4	1	3	6.5	8	5	6.5	11	Charts	1	3	4	6	5	8	7	9	10
Rank correlation	0.69	$p = 0.09$									Rank correlation	0.95	$p = 0.0003$						

For example the soldier ranked first by the army was ranked second by birth charts. Mean chart score via weighted factors: highest 11.2 sd 4.4, lowest -2.4 sd 5.6, $N = 9$.

He then gives these mean results for ten army companies including the above:

Army highest mean rank correlation 0.67, mean number of soldiers 15, $p = 0.011$
Army lowest mean rank correlation 0.74, mean number of soldiers 12, $p = 0.012$

These correlations are remarkably high and significant. The author concludes "Astrology is a

science of generalists. When used alone, independent of other disciplines, it loses much of its effectiveness. When used in conjunction with other sciences however, as in this example, astrology can be expected to prove an extremely valuable forecasting tool" (pp.25-26).

Comment In the first example the correlations are suspect because some army ranks are missing (7, 9 in highest, 3 in lowest) or duplicated (9 in highest), some birth chart ranks are missing (7, 9, 10 in highest, 2 in lowest), and the totals for highest do not agree (9 on p.22 vs 11 on p.25). So the rank correlations (whose calculation uses the differences in numerical ranks) cannot be correct. Nor do the total birth charts agree (281 on p.22 vs 271 on p.25). So the results are suspect, a conclusion confirmed by the consistently strong evidence against the validity of signs and aspects (see Chapter 8) and this earlier study:

Barth and Bennett (*Leonardo* 7, 235-237, 1974) obtained from the US Marine Corps the birth dates of 154,500 enlistees 1962-1970. The Marine Corps is the most combat-oriented branch of the armed services, so enlistees differ from normal conscripts in that they tend to be strongly inclined to a military occupation and for longer periods. In astrological terms (as per Noonan), compared with enlistees born under Libra, those born under Aries and Scorpio should have (1) a higher re-enlistment rate at the end of their first term of service, and (2) a higher rate of enlistment for more than two years. But despite the sensitivity of the huge sample (nearly 13,000 enlistees per sign), in neither case were the differences significant at the $p=0.05$ level. Where significant differences existed between signs, they were in the wrong direction. The authors conclude that "our empirical evidence offers no scientific support for the predictive power of astrology with regard to military occupation" (p.237).

7.1.1987.1 Similarity between science and astrology

Arthur M Young, *Science & Astrology: The relationship between the measure formulae and the zodiac* 1987, 45 pages. Young (1905-1995) had studied astrology since 1948. He was the designer of the first Bell helicopter (its first test flight was in 1943), and was the author of several books including *The Reflexive Universe: Evolution of Consciousness* 1976, an attempt to explain consciousness via the findings of anthropology, biology, geology, psychology and parapsychology.



Young begins by explaining his approach:

Because there is no scientific explanation of how planets could influence life on earth, and no explanation of why different planets should be associated with different functions – Venus with love, Mars with aggression, and so on – the whole basis of astrology seems too absurd to warrant scientific justification. In this essay I will make no attempt to answer these questions, nor to make any defense of natal astrology. Here I will confine myself to showing the remarkable similarity between the measure formulae of physics, which constitute the basic vocabulary of science, and the signs of the zodiac, which are basic to astrology. The resemblance calls for examination (p.1).

Here the "measure formulae of physics" refers to what is called *dimensional analysis*, where a physical relationship is assessed by considering only the *dimensions* involved and ignoring the mathematics, which allows a vast simplification without losing touch with reality. Classical physics has five fundamental dimensions, namely mass M, length L, time T, charge Q, and temperature Θ (capital theta), which in combination can describe any quantity:

Position is L. Multiplied by mass gives moment ML, and then by L gives moment of inertia ML^2 .

Velocity is change of position with time L/T . Multiplied by mass gives momentum ML/T .

Acceleration is change of velocity with time L/T^2 . Multiplied by mass give force ML/T^2 . Power is ML/T^3 .

Young takes mass M, length L and time T in their various combinations, and likens the four astrological elements to the sequence of operation in a four-stroke car engine:

intake of air (Air), compression (Earth), ignition (Fire), and exhaust (Water), (p.33).

Then, after many pages of symbolism, much dense speculation, and what is technically called dimensional analysis using M, L and T (which is used to make sure both sides of an equation are consistent with each other), he ends up with the correspondences shown below (p.37). Sign keywords from Hone's *Modern Text-Book of Astrology* have been added for comparison:

Dimensions	Zodiac sign	Interpretation	Keyword
Acceleration L/T^2	Aries	Blind action	Assertive
Establishment ML/T^3	Taurus	Establishment	Possessive
Power ML^2/T^3	Gemini	Knowledge	Versatile
Velocity L/T	Cancer	Change	Sensitive
Force ML/T^2	Leo	Being	Creative
Energy ML^2/T^2	Virgo	Work. Fact	Critical
Position L	Libra	Observation	Harmonious
Momentum ML/T	Scorpio	Transformation	Secretive
Quantum of Action ML^2/T	Sagittarius	Hunch. Intuition	Adventurous
Control L/T^3 or LT	Capricorn	Control	Prudent
Moment ML	Aquarius	Significance	Detached
Moment of Inertia ML^2	Pisces	Belief	Impressionable

In his 1976 book *The Geometry of Meaning*, Young describes a diagram based on the above relationship as "the Rosetta Stone of meaning". Back at his essay, he concludes:

Let us confine ourselves to what is pertinent. This is that the circle whose division creates a vocabulary of meaning is also an expression of time – or we could say it represents time and interprets time as cyclic. ... Now it is possible to define meaning as arising from angle – 180° being opposition, 90° being mediation or meaning, and so forth. but this is still a static description. The richer meaning is provided by sequence, as in the learning cycle, which occurs in time. Here perhaps the resemblance between science and astrology ceases [for] neither interpretation of time is warranted by the zodiac, or even by the measure formula (pp.44-45).

Comment Some people may find Young's argument impressive if a touch incomprehensible. But it was already clear when this essay was written – and it is even clearer today – that signs are the most disconfirmed factor in astrology. Which reduces his essay to yet another example of how symbolism can lead us astray even when we are the inventor of a famous helicopter.

7.1.1988.1 Extraversion and 992 sun signs

Jan van Rooij, MA Brak and JfF Commandeur *AinO* 3(1), 3-11, 1988.

In 1978 Mayo, White and Eysenck found that people with odd-numbered sun signs tended to be more extraverted than people with even-numbered sun signs, which was in agreement with tradition. Later Eysenck suggested the effect was due to self-attribution, the role-playing of qualities that the subject believes applies to them. But a new sample of 992 subjects replicated the results ($p = 0.056$) even though astrology and sun signs were not mentioned, so how could self-attribution be an explanation? Invited to comment, Geoffrey Dean points out that astrology and sun signs do not have to be mentioned for self-attribution to apply here. What matters is that people know about their sun sign (pp.10-11). In reply, van Rooij agrees, but he suggests that people are unlikely to change their self-image just because they know about sun signs, in the same way that smokers do not stop smoking just because they know about lung cancer. So the results seem to promise support for astrology. **Comment** This promise was later denied when studies showed no astrological effect when self-attribution was controlled, for example by testing people ignorant of their sun sign, for details see 8.3.7. So addiction to sun signs seems as strong as addiction to cigarettes.

7.1.1988.2 Sun, Moon signs and 1210 football notables

Don Woolson, *Kosmos* 17(4), 15-17, 1988.

In a previous study of 359 famous athletes I found a significant deficit of Moon in Pisces (16 observed vs 30 expected, $p = 0.05$), which led me to predict that a similar deficit would be found among professional footballers. But 1210 football players from Ronald Medell's *Who's Who in Football* failed to confirm it (99 observed vs 101 expected, $p = 0.84$), and no sun or moon sign was significantly high or low, which led me to question my previous findings. Significant findings do not "prove" anything, they can only add support to a particular hypothesis.

Comment In the following issue, a letter from Dr Alan Richter complained that no data was presented in the above article as would be required in any scientific journal. The editor replied that the author did not submit any data, and in any case *Kosmos* was not a scientific journal.

7.1.1989.1 Sun sign patterns of 572 Nobel laureates

Roy Tate, *APP-NCGR* 7(2), 38-39, 1989. Includes a response from Françoise Gauquelin.

I have recently reissued my book *The Astrology of Genius* based on 20 years of research. The chi-squared test reveals that the odds of the distribution of sun signs for 572 Nobel laureates is less than 1:500. **Response from Françoise Gauquelin:** Sorry to disappoint you, dear Roy, but your book does not reveal a new astrological law. It merely confirms a well-known demographic law affecting everyone in Europe that causes some months to have more births than others. The best way to eliminate demographic artifacts is to compare the target sample with a control sample born in similar social conditions, geographical area and period of time. I am ready to publish the outcomes of such a control if you can take charge of it. **Comment** There was no response from Tate.

7.1.1991.1 Extraversion and 862 sun signs

Jan van Rooij, *AinO* 6(1), 12-15, 1991 and 6(2), 14-15, 1991.

Two samples of respectively 620 and 242 persons were divided into three levels of astrological knowledge (none, some, lots) and were exposed to one of four cues about the purpose of the study (personality, astrology, sun signs, MC signs). The subjects then completed a personality test and provided their date of birth. Analysis of the mean extraversion scores for odd- and even-numbered sun signs for each combination showed an effect for subjects with knowledge of sun signs but no effect for subjects with no knowledge of sun signs, thus confirming the effect of self-attribution. Further, the self-attribution was stronger when the cue for sun signs or MC signs had been given. The effect was also stronger for subjects born in odd-numbered signs than for subjects born in even-numbered signs, but the difference was small. Conclusion: Both self-attribution and cues for astrology can affect the outcomes in astrological research. However, the exact mechanism is not yet understood. There was no indication of a genuine sun-sign effect outside of self-attribution. **Comment** Today the exact mechanism is better understood, see 8.3.7.

7.1.1992.1 Life span vs sun sign for 7136 subjects

Frans Vermeer, *AinO* 7(1), 10-11, 1992.

This study investigated whether there is a correlation between the sun sign at birth and the life span of humans. Special attention was given to the hypothesis that people born under the sign of Capricorn live markedly longer than people born under the other signs. Data were collected from all tombstones in seven cemeteries in the south of the Netherlands. The dates of birth and death of 7136 people were transcribed. Infants that died within half a year after their birth were excluded. The data were then run through a statistical computer program. One-way analysis of variance revealed no significant correlation between life span and birth sign ($p = 0.15$). The life span of Capricorns scored below the mean, so the hypothesis that Capricorns live longest was not supported.

7.1.1992.2 Planetary signs for 8379 university students

Jan van Rooij and four psychology students, *AinO* 7(2), 8-13, 1992 and in English in *Correlation* 14(1), 2-7 1995.

In this study the sign positions of the Sun, Mercury, Venus and Mars were compared between 5174 psychology students and 3232 engineering students aged mostly 20-28. According to Jungian theory, psychology students are high on Intuition and Feeling (linked astrologically to Fire and Water signs) whereas engineering students are high on Thinking and Sensing (linked to Air and Earth signs). Expectancies adjusted for demographic effects were calculated from an ephemeris for the various birth years using weighted birth rates per month provided by the Central Bureau of Statistics of the Netherlands. The results showed that psychology and engineering students did not differ significantly in their Sun, Mercury, Venus or Mars positions by sign or element. For example, here are the results for Sun by element. According to astrology those marked * should be the highest in each case by a clear margin, but they are not:

Element	Psychology	Engineering
Fire	1270*	800
Earth	1269	808*
Air	1323	806*
Water	1312*	818
Total	5174	3232
Mean	1294	808

In summary, planetary signs are unable to distinguish between psychology and engineering students even though they form two distinct groups. Of course, any list of signs will have a first and last position, and astrologers (like most people) tend to assign meaning to such appealing positions. But in this case no sign differs significantly from what could be expected by chance, which may explain the difference between astrologers who insist that astrology works and researchers who consistently find that it does not.

7.1.1992.3 Sun signs in 2174 marriages

Jan F Ruis, *AinO* 7(2), 41, 1992. Including earlier results in *AinO* 7(1), 2-6, 1992.

Could my earlier results have been influenced by self-attribution? The aspects between sun signs in my 2174 marriage pairs 1850-1928 from Gauquelin heredity data are as follows:

Aspect	0	30	60	90	120	150	180	All
Observed number	184	349	357	379	365	353	187	2174
Control number	183	368	359	362	362	360	180	2174
Difference O-C	1	-19	-2	17	3	-7	7	
Hit?	Yes	--	No	No	Yes	--	Yes	

-- no predicted direction, so hits could not be assessed.

Now if partner selection had been influenced by popular ideas about sun sign compatibility, there would be more hits than misses. But the total hits (11) is smaller than the total misses (19), which is in the wrong direction. Conclusion: Sun signs have no effect whatsoever on marriage. **Comment** The same conclusion was reached by later French and British studies using samples of millions of marriages, see 8.3.8.

7.1.1992.4 Guessing overall sign likeness of 744 people

Wim Heideman, *AinO* 7(2), 36-41, 1992.

The author guessed the “overall sign likeness” of 744 people met in everyday life, eg in bars. His guesses were afterwards compared with the sun sign as given by the subject, and also with their moon and ascending signs if known. His guesses were based on the overall likeness between sign and the person’s appearance and behaviour, and were not aimed specifically at Sun, Moon or Ascendant. Usually several guesses were made without him being told the answer until the end. But sometimes the response was “all wrong, try again”, in which case the author kept guessing until he either guessed correctly or gave up. He did not record each guessing procedure, and had no special research plan or controls. On average about 9-10 guesses were required for each hit. Expectancies were estimated by computer, simply by counting hits after randomising the order of guesses, and repeating 3000 times (1000 times gave almost the same results, so 3000 times was ample). This automatically allowed for multiple guessing, and for variations in sign occurrence due to demography or chance. The results were as follows:

Sign	Subjects	Guesses	Hits	Estimated expectancy	Mean guesses per subject	Mean guesses per hit
Sun	728*	1783	178	148.6	2.45	10.0
Asc	254	775	79	65.7	3.05	9.9
Moon	81	287	32	24.7	3.54	9.0

*Sun signs were known for 16 subjects, so their total is 728, not 744.

Moon signs were the least frequent because people knew their moon sign less often than the other two signs. The estimated expectancies are all close to the theoretical expectancies (given

by total guesses/12) of 148.6, 64.6, and 23.9, and all are less than the observed hit rates. The distribution of hits in the 3000 randomisings gave estimated significance levels of $p = 0.003$, 0.015 , and 0.050 , so in each case the surplus of hits was statistically significant. But why does this study deliver significant results whereas most other studies do not? The author briefly considers the effect of self-attribution, unintentional help from the subject’s reactions, and recording errors (even though he had carefully noted all misses). If the result is genuinely astrological, it could be because the behaviour of the subjects was observed directly, whereas most other studies relied on indirect measures such as test scores. In *AinO* 8(1), 63, 1993 Jacob Ruijling praises Heideman for publishing his findings. Ruijling often meets people interested in research who don't know what to do. So he hopes that Heideman (and others) could do further work with better data collection and analysis. For this would provide an excellent example of how to do research that NVWOA members could build on.

Comment Computers today are much faster than they were in 1992. So it has been possible to repeat the author’s expectancy calculations with random data that exactly matched the numbers of his subjects and guesses, on which were imposed various hit rates. But instead of randomising the order of guesses 3000 times, each subject was exhaustively paired with each of the other guesses (ie guesses not the subject's own) to give an exact result. For example, for the subjects who knew their Sun sign, this required $728 \times 727 = 529,256$ comparisons, which were then repeated 100,000 times with new random data. The entire run was then repeated with heavily skewed data to simulate massive demographic effects. The results showed that, as predicted by the author, the hit rate and skew had no effect on expectancy.

The results also confirmed the author’s finding that the expectancy was accurately given by total guesses/12, which allowed (1) the significance of the author’s results to be calculated by a chi-squared test, and (2) their r effect sizes to be calculated from $r = \sqrt{(\text{chi}^2/N)}$, see 8.2.1, with the following results:

Sign	Subjects	N Guesses	-- Hits --		chi ²	(1)	(2)
			Obs	Exp		p	r
Sun	728	1783	178	148.6	6.35	0.012	0.060
Asc	254	775	79	64.6	3.50	0.071	0.067
Moon	81	287	32	23.9	3.00	0.082	0.102

Here the hits are somewhat less significant than reported by the author ($p = 0.012$, 0.071 , 0.082 versus 0.003 , 0.015 , 0.050). Effect sizes are comparable to the 0.062 typical of sun-sign self-attribution see 8.3.7. Probably few people can prevent some leakage of their reactions to a hit or miss, especially when relaxing in a bar, so a cold reader could accumulate hits just by reciting the signs and watching the subject’s reactions. Also, subjects who know their moon or ascending signs are more likely to believe in astrology. So when there is an ambiguity allowing both hit and miss, as on a cusp, they may declare *hit* rather than *miss* to avoid conflict with their belief. If this is so, the effect sizes for Moon or Ascendant subjects should be higher than for Sun subjects – and they are (0.102 and 0.067 versus 0.060).

Conclusion It seems likely that the above tiny effect sizes have a non-astrological explanation, especially as the author did not record each guessing procedure. In short, his results do not clearly support an actual ability (and certainly not a *useful* ability) to recognise “overall sign likeness”. Nevertheless it is a good example of an honest study that recognises its own defects and does not bend over backwards to claim a true astrological effect.

7.1.1993.1 Jungian typology vs element for 370 subjects

Jan van Rooij, *AinO* 8(1), 12-14, 1993.

I tested the claim that the sun’s element at birth is related to the psychological functions in Carl Jung’s typology, specifically whether the Sun in a Fire sign is related to a dominant *Intuition* function, Earth to *Sensing*, Air to *Thinking*, and Water to *Feeling*. Birth dates and

scores on the Myers-Briggs Type Indicator (a personality test that is the standard way to measure the four Jungian functions) were available for 370 subjects (168 males, 202 females). The dominant function showed no significant relation to element ($p = 0.34$). When the 370 cases were divided by their MBTI scores into Intuition vs Sensing, or Thinking vs Feeling, the results were as follows. The expected frequencies were calculated in the usual way from the marginal totals and are rounded to the nearest integer:

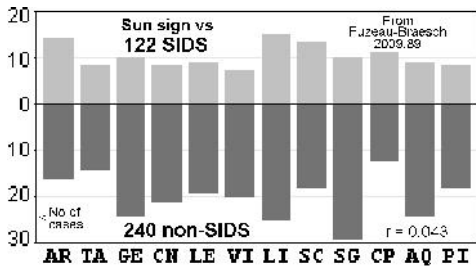
	Observed					Observed			
	F	E	A	W		F	E	A	W
Sensing	56	53	40	36	Thinking	76	75	68	45
Intuition	48	44	51	42	Feeling	28	22	23	33
	Expected					Expected			
	F	E	A	W		F	E	A	W
Sensing	52	49	46	39	Thinking	74	69	65	56
Intuition	52	49	46	39	Feeling	30	28	26	22

Once again the relation with element is nonsignificant, p being 0.36 and 0.03 respectively (among the three tests that have now been applied, the last is not significant). Of these the strongest but still very weak relationship was between Thinking-Feeling and Water. A significant relationship between Jungian typology and astrological elements was not supported.

7.1.1993.2 Sun signs of 122 SIDS vs 240 controls

Suzel Fuzeau-Braesch. *Astrology Off the Beaten Path: A Scientific Study of Planets and Personality* 2009:87-93. This study of SIDS (Sudden Infant Death Syndrome), also known as Cot Death or Crib Death, was made in 1993. SIDS is the sudden unexplained death of a child less than one year old. The death must be unexplained even after a thorough investigation including autopsy. In developed countries the current rate varies from 1 in 1000 to 1 in 10,000 births and is more common in winter and in boys than girls. It usually occurs during sleep, typically between 0h and 9h, about 90% occur before six months of age, most frequently between two and four months (a critical period because the infant is not yet fully able to rouse from sleep), usually with no noise, no witnesses, and no evidence of struggle.

To see whether astrology can provide clues about human health and death, Fuzeau-Braesch obtained via the French Association *Naître et Vivre* (Birth and Life) 122 cases of Sudden Infant Death Syndrome (SIDS) whose parents agreed to provide birth data and complete a questionnaire. For non-SIDS controls they also provided birth data for their 240 surviving children. All births occurred between 1974 and 1993 with most between 1990 and 1992. The distribution of sun signs at birth for both groups is shown below. Question: do the distributions differ?



The author applied a chi-squared test and found no significant difference between the two distributions ($p = 0.48$). Chi-squared tests using expectancy = mean show that neither distribution is significant ($p = 0.78$ for SIDS and $p = 0.28$ for non-SIDS). Their correlation is a negligible $r = 0.043$ ($p = 0.90$, $df = 10$). Also non-significant was the distribution by sun sign at death.

But some differences were found. Male deaths (90 out of 122) were more frequent than female deaths, as were autumn and winter deaths (77 out of 122), but because SIDS has no known medical cause these differences are hard to explain. When multiple-of- 10° aspects to the natal Sun from transiting Mercury through Saturn on the 122 dates of death were tested, there was a peak at 180° ($p = 0.009$), and deaths were said to occur more frequently than chance when Mars, Jupiter or Saturn opposed the Sun (no details are given), but not on 122 random dates ($p = 0.88$) or on the 122 dates of birth.

Do these results have any practical use? Fuzeau-Braesch concludes:

The calculation in advance of all the dates on which the planets were in opposition to the Sun would create an unnecessarily anxious climate for parents. But the other discoveries do suggest that the monitoring of very young children should be intensified after sunrise and at the end of the day. Precautions should be increased in autumn and winter. Perhaps, like alleviating seasonal depression for adults, complementary lighting could be prescribed during the short days [ie of autumn and winter] to provide a daily total of at least twelve hours of light (p.93).

Comment Although the exact cause of SIDS is unknown, known factors include sleeping on the side or stomach, being born prematurely before 39 weeks, high or low room temperatures,

excessive bedding, bed-sharing, soft sleep surfaces, stuffed toys, tobacco smoke, inherited defects, and ethnicity (in the USA the rate for white Caucasians is roughly twice that for Asians and half that for blacks). The discovery that sleeping position is important led to a worldwide campaign to have infants sleep on their backs, which by 2009 had led to a 50-90% decrease in the SIDS rate (Kinney and Thach, *New England Journal of Medicine* 361, 795-805, 2009). That there might be room in all this for an astrological connection does not seem good.

Nevertheless Michelle Lewis, a senior technical officer with the Medical School of Flinders University in South Australia, came top in the FAA's diploma examination in 1990 with a pilot study of 50 SIDS cases born 1928-1989 vs 50 controls born 1925-1989 (*FAA Journal* 21(1), 3-30, 1991). The controls were chosen from 120 healthy births and had the birth dates closest to the SIDS birth dates. Both groups had a male to female ratio of about two. The following natal factors were counted between (1) the Sun, Moon, and Ascendant and (2) the planets from Saturn through Pluto, the Moon's true node, and the Ascendant, using:

- Multiple of 30° aspects in the natal chart.
- Multiple of 30° aspects in the 12th harmonic chart.
- Midpoints in the 12th harmonic chart.

Contrary to Fuzeau-Braesch, sun signs and transits were not considered. The Sun, Moon and Ascendant were chosen because they are always direct, thus avoiding complications due to retrograde movement. The 12th harmonic chart was chosen because the associated multiple-of-30° aspects seemed especially frequent in SIDS charts. Any factor which had a frequency SIDS/Controls ≥ 2 was then included in the scoring system, which was:

- **Aspects** orb 0°-3° 2 points, orb 3°-8° 1 point, add 2 points if involving inner planets.
- **Midpoints** orb 0.0°-0.15° 4 points, orb 0.15°-0.3° 2 points, if direct 6 points.
- Planet in natal chart in **same degree*** as in the 12th harmonic chart 2 points.

*Said in Hindu astrology to confer power. For the (x+1)th sign (x=0-11) this degree is $30x/11^\circ$ in the 12th harmonic chart (eg 2.72727° Taurus) for which the orb was 2°-6°. The SIDS charts had 11 cases, control charts only one.

The mean scores per case were:

SIDS 9.5 sd 5.66 N 50 range 0-30. **Controls** 2.58 sd 2.79 N 50 range 0-9. *p* of difference by *t*-test $<10^{-6}$

However, the SIDS charts necessarily got higher scores than the controls because high-scoring factors favouring SIDS had been selected in advance, so the significant difference is not meaningful. But Lewis misses this point and concludes that when her system is applied:

the charts of SIDS infants will score significantly higher on average than those of control charts of successfully reared infants. ... The obvious next step from this pilot project is the collection of a larger new set of test and control data and the design of an experimental model to test the proposed hypothesis (p.29).

Nevertheless Fuzeau-Braesch and Lewis must be commended for going beyond the traditional useless statements found in medical astrology books such as:

- The Moon regulates bodily fluids
- Mars rules blood and may be involved in anaemia
- Uranus may point to spasm conditions

and the typical useless comparison of just one or two SIDS cases with one or two non-SIDS cases. But rearranging the arithmetic in 8.2.4 suggests that an effect size *r* for something occurring once in N=1000 to N=10,000 births will be around 1/N, and will require a sample size of around $10 N^2$ to reliably detect it, or 10m for N=1000. Not exactly a practical prospect.

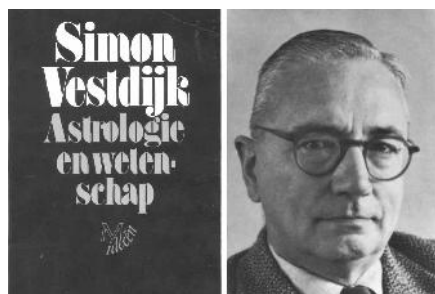
7.1.1994.1 Writer Simon Vestdijk and sun sign astrology

Rico Bulthuis, *AinO* 9(2), 19-23, 1994.

Simon Vestdijk (pronounced Vest-dake) was one of the Netherlands most famous writers. In the 1920s he studied astrology and contributed numerous articles to the now-defunct astrological journal *Urania*. But he was also a medical student and could not abandon scientific methods. In 1949 he published a book *Astrologie en wetenschap: Een onderzoek naar de betrouwbaarheid der astrologie* [Astrology and science: A study into the reliability of astrology], which was a

study of sun signs made in 1928-1929 and later analysed (see below). The results changed him from a believer in astrology to a doubter. He felt that astrological influences did not exist because he had found that “every personality can be fitted to every horoscope, and vice versa”. Adding “I would readily be cured of my unbelief, but only by numbers, not by allegations”.

Comment Vestdijk’s study is not described by author Rico Bulthuis but in its day it was a milestone. Thus his tests of astrology are among the earliest tests anywhere in the world, not just in the Netherlands. Unfortunately they are poorly presented with no headings or tables. Vestdijk begins by noting how astrologers are so ignorant about probability that every coincidence is taken as proof of astrology. “They find what they want to find, and do not worry about failures because there are many ways to make astrology work” (p.15). He notes how astrologers in the 1920s consider sun signs to be more important than any other chart factor. So if astrology works then the influence of sun signs will be shown by the data. Sun signs have the advantage that birth times are not needed.



Vestdijk’s approach was ingenious. It was based on siblings (a sibling is a brother or sister). A total of 53 same-sex sibling pairs had to decide “who is the most X?” where X was a trait chosen by them from a list of

150 traits such as impulsive, industrious, emotional, or musical,. (Vestdijk chose *siblings* to avoid complications due to heredity, and *same-sex* to avoid complications due to gender.) For each X he had a list of sun signs in order of decreasing relevance. Call the siblings A and B. If A was the most X, and A’s sign was listed before B’s sign, the result was a hit. But if B’s sign was listed before A’s sign, the result was a miss. Despite Vestdijk’s request to keep it simple, each pair of siblings tended to make decisions on over 100 X’s, so their hits and misses were added together to determine the outcome expressed as a single hit or miss. Of the 53 cases, 34 were hits vs $53/2 = 26.5$ expected by chance. Most of the subjects were ignorant of astrology. Only 4 or 5 were aware of astrology, albeit superficially, but their results were no different. Vestdijk also tested moon signs in a small sub-sample but the poor results did not justify doing further work. Vestdijk then tested 130 pairs of same-sex sibling biographies, of which 68 were hits vs 65 expected by chance and 23 were too close to call; and 27 famous individuals, of which 20 showed more hits than misses. Overall the results were:

N	Test is of	Hits	Exp	z	p
53	Live pairs	34	26.5	2.15	0.03
130	Biography pairs	68+23/2	65.0	2.61	0.01
27	Individuals	20	13.5	2.85	0.004

p values are calculated from z scores = $(\text{Hits} - \text{Exp}) / \text{sd}$ where $\text{Exp} = N/2$, $\text{sd} = \sqrt{h(1-h)/N}$, and $h = \text{Hits}/N$.

Each result is in the right direction and significant. But to Vestdijk they were not significant enough to be convincing because he felt the results might be due more to demographic and climatic factors than to astrology. Which was a wise move, because we now know that factors other than demography and climate are even more likely, of which one is obvious – knowing the answer in advance. Thus without blind conditions Vestdijk’s judgements could have been influenced by his knowing the answer in advance, especially as about 30% of the biographies seemed poorly matched to his trait list.

Another factor is more subtle and is due to varying levels of social desirability interacting with varying numbers of sun signs. It works like this: Some sign traits are more socially desirable than others, for example *generous* (Leo) is more desirable than *touchy* (Cancer). People naturally prefer to be seen as generous rather than touchy, and sensitive biographers will label their subjects accordingly. If our sample contains more Leos than Cancerians (as in Vestdijk’s biographies where they are more than twice as numerous) and we test it with these trait

words, we will end up with a surplus of hits, all of them due to social desirability rather than astrology. Social desirability can be surprisingly potent, as shown in 1998 when 1092 adults were asked by the UK's *Daily Mail* to choose which of twelve unlabelled sun-sign profiles applied to them, and the Aquarius profile was chosen first by all sun signs except Taurus! The Aquarius profile was "Friendly, independent, helpful, honest, loyal but unpredictable, detached". For more see next summary.

Finally there are Vestdijk's lists of signs in decreasing order of their relevance to a trait (in his lists Aquarius is the sign most commonly in first position). Their order is of course crucial for deciding between a hit or miss, but it often seems arbitrary. For example the decreasing order of signs relevant to *extraversion* is said to be (with positive signs in capitals) GE AQ LE cn SG LI vi cp AR pi ta sc. So we expect the capitalised/positive signs to be grouped together, not scattered as they are here. Furthermore, Charles Carter (the leading British astrologer in Vestdijk's time) in his *An Encyclopaedia of Psychological Astrology* 1954:113, denies that GE and AQ could be frequently extraverted (the opposite of Vestdijk's listing). Such uncertainties when multiplied across 150 traits does not justify faith in the results.

7.1.1997.1 Has the UK's *Daily Mail* proven astrology? N=1092

Geoffrey Dean, *Correlation* 16(2), 63-66, 1997 (actually 1997-98, hence the apparent out of sync with 1998).

"Astrology – is this the proof?" was the headline to a two-page article in the UK's *Daily Mail* of 3 February 1998:30-31 in which a representative sample of 1092 adults had to choose which of 12 personality profiles (unlabelled but actually those of the 12 sun signs) applied to them. They could choose as many profiles as they liked. Six signs chose their own profile more often than the other signs chose it. The remaining signs chose their own profile more often than at least eight other signs chose it. The article comments:

The results were remarkable. A sceptic would expect no correlation between star signs and star-sign characteristics. But interviewees belonging to all 12 signs showed a powerful and unmistakable connection with the personality traits usually attributed to their star sign. ... Our findings demonstrate a link between star signs and personality.

But the actual results tell a different story. When rearranged in terms of % choices instead of interviewee's sun sign, the first two and last two of each sign's twelve choices looked like this:

%	Sun sign of interviewee, mean N=91											
Choice	AR	TA	GE	CN	LE	VI	LI	SC	SG	CP	AQ	PI
1st	AQ53	LE51	AQ56	AQ58	AQ50	AQ56	AQ51	AQ66	AQ54	AQ57	AQ62	AQ51
2nd	LE42	AQ49	LE47	LE48	LE50	LE54	LI46	LE48	VI41	LE43	VI44	LE46
11th	SC20	GE18	TA18	SG18	CN22	SC17	GE18	AR27	SC21	GE16	SC10	SG18
12th	GE16	SC16	SC17	SC13	GE12	GE15	CN10	GE24	GE18	SC15	AR04	GE13

Thus 53% of AR chose AQ first, 42% of AR chose LE second, 16% of AR chose GE last.

The rearranged results showed that the Aquarius profile was amazingly popular, being chosen first by all sun signs except Taurus, who chose it second (Leo was first). The Gemini profile was chosen last or second last by ten signs, and even Geminians put it no higher than sixth. Overall there was a strong tendency for interviewees to choose profiles in the same order of social desirability regardless of their own sun sign. Aquarius had the most desirable profile (friendly, independent, helpful, honest, loyal but unpredictable, detached), followed by Leo (generous, faithful, loving, a great organiser, but prone to know best). Gemini was the least desirable (gifted communicator, versatile, intelligent, but superficial, inconsistent), with Scorpio the second least desirable (exciting, powerful, passionate, energetic, but overly jealous). Overall the choices differed from purely random choices at the $p = 10^{-37}$ level.

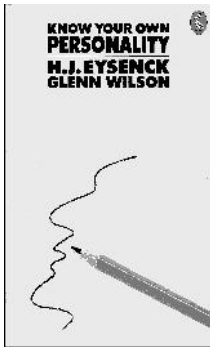
In summary, the results of the *Daily Mail* survey confirm what critics have long been saying, and astrologers have long been denying, namely that the reason Sun sign profiles are accepted has nothing to do with astrology and everything to do with Barnum and other effects. Which did not stop the newspaper's resident astrologer Jonathan Cainer claiming that the study "confirms the relevance of astrology at a time when some folk are a little too keen to dismiss it as an ancient superstition". Charles Harvey agreed with Cainer: "No doubt the sceptics will wheel out their 'self-attribution' hypothesis to counter this evidence" (p.66).

The pollsters had found that 53% of the women and 26% of the men consulted their sun sign column very or quite often, while respectively 55% and 38% found them always or sometimes accurate. So at least half were familiar with sun sign meanings. Contrary to what the article asserts, a critic would therefore expect to find an effect consistent with self-attribution. Unfortunately the article gives only percentages, not correlations, but appropriate computer analysis uncovered correlations of 0.01-0.09, too small to be reliably determined by the sample size but at least consistent with the 0.07 typical of self-attribution.

An astrologer might argue that the results are still explainable by astrology, but once self-attribution, chance, and other artifacts are controlled there is nothing left for astrology to explain. The answer to the *Daily Mail's* "Astrology – is this the proof?" has to be a definite No.

7.1.1997.2 Cherry-picking signs vs human sociability N=524

Suzel Fuzeau-Braesch. Astrology and Sociability: A comparative analysis of the results of a psychological test. *Journal of Scientific Exploration* 11(3), 297-316, 1997, followed by disagreeing comments from the referee with the author's response. Repeated with further details in her 1999 book with Hervé Delboy *Comment démontrer l'astrologie* [How to demonstrate astrology] pp.33-220, described on the back cover as "The first book of its kind by scientists", but without the JSE referee's disagreeing comments. Also summarised in her 2009 book *Astrology Off the Beaten Path* pp.73-79.



Fuzeau-Braesch notes that tests of sun signs vs personality scores have given inconsistent results, which suggests that other planets-in-signs need to be tested. To do this she obtained 524 student volunteers from seven French educational institutes in architecture, business, engineering, psychology, and technology (this was to avoid interest bias) and gave them the personality test from Eysenck and Wilson, *Know Your Own Personality* 1975, which with Eysenck's permission she had translated into French,

Comment The test measures three superfactors (Extraversion, Neuroticism, and Toughmindedness or P) via the seven primary traits that underly each one as listed below, using a total of $3 \times 7 \times 30 = 630$ items:

Extraversion: activity, sociability, risk-taking, impulsiveness, expressiveness, lack of reflection, lack of responsibility*.

Neuroticism: low self-esteem, unhappiness, anxiety, obsessiveness, lack of autonomy, hypochondria, guilt.

Toughmindedness: aggressiveness, assertiveness, achievement orientation, manipulation, sensation-seeking, dogmatism, masculinity*. *These two traits (extraversion and toughmindedness) are omitted without explanation by Fuzeau-Braesch, even though she says she tested "21 psychological scores" (1997:320).

Typical questions related to sociability and their scoring direction are:

Do you like going out a lot? Yes (scored 1) ? (scored ½) No (scored 0).

Generally, do you prefer reading to meeting people? Yes (scored 0) ? (scored ½) No (scored 1).

The maximum score for each trait is therefore 30. In 1991 a revised test of 440 items known as the Eysenck Personality Profiler was introduced. It adds a lie scale and measures the three superfactors (ENP) via the seven primary traits that underly each one. A few trait names have minor changes. More importantly, *impulsive* has been moved from E to P, while *aggressive* and *ambitious* have been moved from P to E. The EPP is the only test that measures primary traits and has received wide use. A 200-item short form measuring ENP via 9 primary traits is also available. For a comparison of both forms vs the Big Five (the latter is not necessarily better) see Jackson & Francis, *Current Psychology* 22(4), 295-305, 2004. **End of comment.**

Each student provided their date and place of birth. Their mean age was 22.9 years, 59% were male, those born near a sun sign cusp were not excluded, nor was provision made for a lie scale. In her 1999 book (but not in her other versions) Fuzeau-Braesch shows how selected test scores for ten students can be seen in their birth charts when the scores (all out of 30) are illustrated by test items to make them easier to understand. For example:

Annie, an architect aged 23, had a sociability score of 22.5 (she likes to go out a lot, likes being with other people, is a good talker), an activity score of 19.5 (she likes to act quickly),

and an impulsivity score of 22.5 (she dislikes planning well in advance, often changes the subject in conversations, often buys things on impulse). And in fact:

Annie has a birth chart that, at a glance, reveals its sociable, open, active character: four planets (the Sun, Jupiter, Mercury and Neptune) as well as the Descendant (Western horizon) are aligned in the sign of Sagittarius. In addition there is a close conjunction between the Sun and Jupiter: all in perfect agreement with the test results (p.66).

Lionel, a psychologist aged 23, was quite different, with a low sociability score of 6.5 (he dislikes going out, prefers reading to meeting people, is not relaxed when among people), and a low activity score of 6.5 (he is cautious and controlled). And in fact:

At birth, the Sun was in the middle of the sign of Cancer: this index is already enough to see in Lionel an introverted personality; moreover this Sun makes a close square aspect (orb 4 °) with Uranus which had just set: this position does not encourage relations with others and acts to the contrary (p.72).

Lionel felt the test described his feelings very well:

It brings out a net "feeling of inferiority" in me ... the test describes me as depressive, anxious, obsessed, and dependent. Yes, I recognise all of that, and how the test gives me a hyperemotional personality. But because of this I hope to better understand the difficulties of others (p.73).

Which Fuzeau-Braesch saw as being well reflected in his birth chart:

The Sun in Cancer is not only a sign of introversion, but also a sign of particular emotionality. In addition, two other elements make Lionel a particularly sensitive being: the Moon culminates and is in opposition to Venus at birth (orb 4°). Lionel is hyperaffective, he needs security, which he may not have now; he will have trouble if his emotional life is not successful, and is therefore particularly vulnerable. He needs tenderness. That's what the chart reveals (p.73).

Comment The strong claims for scientific status requires the match to be significantly better than that for controls, and to replicate. But there are no controls and no replication (there is not even a hint that these are important), so the claimed match has little scientific standing. Indeed it is easy to make even these *selected* charts match reversed test scores. Thus Annie is not sociable due to a need to suppress the strong emphasis on Sagittarius (see Hamblin 9.9.9), Lionel is extraverted due to his Aries ascendant and is emotionally robust due to his Moon sextile Mars (orb 4°) and trine Pluto (orb 3°). In other words this demonstration of astrology is too uncontrolled for a study claiming scientific status. **End of comment.**

Fuzeau-Braesch then extends her demonstration to all 524 students, first by comparing the mean trait score of those with a given chart factor, say Sun in Aries, against the mean trait score for all 524 students, using a *t*-test. She gives these two worked examples:

Trait	--- Mean trait score for ---				<i>p</i> of difference in means by <i>t</i> -test
	Sun in Aries	All students			
Active	17.54 N=57	16.71 N=524			0.08
Sociable	16.72 N=57	18.04 N=524			0.03

but not the standard deviations (sds) required to calculate the *p* values, even though her 1997 article gives *N*s and mean sociability scores for every planet-in-sign combination, with ample space for sds to be included; sds are also essential for interpreting the means. Instead a total of 96 pages are devoted to comparing the traditional interpretation of SO, MO, MA, AS in each sign with the difference in mean trait scores between (1) students with that factor in their chart and (2) all 524 students (1999:92-187).

Comment If we assume that the sds for *N*=57 and *N*=524 are not unreasonably different, then working backwards from the above *p* values gives sds of 3.4 and 4.4 respectively, both rather smaller than the only sd reported by Fuzeau-Braesch, namely 5.06 for sociable with the Sun in even or odd signs (1997:303) in this example:

	----- Mean trait score for -----				<i>t</i>	<i>p</i>
	Sun in Even Signs	Sun in Odd Signs				
Incl AR	17.705 sd 5.06 N 255	18.447 sd 5.06 N 269			1.68	0.094
Excl AR	17.705 sd 5.06 N 255	18.790 sd 5.06 N 212			2.31	0.021

The sds are unlikely to be perfectly identical as here, but this is all we are given, and even then they are hidden behind the Greek letter sigma (which is not explained). In this case the

insignificant $p = 0.094$ result is seen as justifying the elimination of Aries from the plot of mean sociability scores for the Sun shown below! The above low sds (which will inflate significance), and the failure to report essential data, must inevitably reduce confidence in the supposedly scientific results. **End of comment.**

The number of cases with $p \leq 0.05$ for SO, MO, MA, Asc in each sign vs $(6+7+6) \times 2 (+ \& -) = 38$ traits (p.192) totalled 115, whereas the number of cases expected by chance is $38 \times 4 \times 12 \times 0.05 = 91$. Individual results are given later. Fuzeau-Braesch concludes:

It is therefore right to say that there is an effect in the four tests. ... traditional solar signs are remarkably confirmed. [With the Moon] there is a general softening of hard features such as aggressiveness, [With Mars] there is a general toning in agreement with traditional astrology. ... the first three analyses validate well the main rules of traditional astrology while that relating to the Ascendant appears more complex (1999:188, 190).

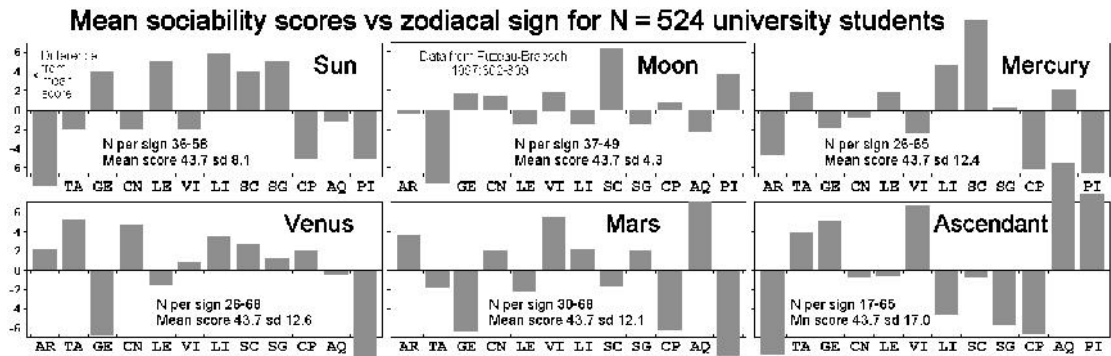
Fuzeau-Braesch then considers the effects of angularity:

There is no need to refer to astrology books as the rule is simple, classic and general: in a birth chart, planets near the angles are very important and become psychologically dominant, the only variable being the orb ... A researcher, M Gauquelin found famous results for the professions ... a statistically significant excess of angular positions (but only in the degrees after the angles). ... So we tested our population of births using an orb of 15° to cover all possibilities. ... Given all possible combinations (4 angles $\times$ 10 planets $\times$ 38 character traits), we can expect 76 results by chance at the threshold of 5%: we get 84, an indication of an effect (1999:191).

The outcome was a table showing the (typically 2 or 3) traits expected for each planet at each of the four angles, for example Saturn at the AS, MC, DS, IC was respectively active, sociable, unsociable, and inactive (p.193). When combined with the traditional house meanings, the result was another table showing significant results for planets in houses, for example in 1st house the Moon is audacious and Neptune is active (p.200),

Comment Fuzeau-Braesch forgets to tell us that Gauquelin found no effect for signs, no diurnal effects for the Sun and planets beyond Saturn, no diurnal effects for the 99.994% of people who on his figures were not eminent; and that in any case the link with character traits was not confirmed (see 6.6.9). In her 1997 article the same 40 tests with a 10° orb found only SO-MC, SA-MC, NE-AS, PL-AS to be significant, which was puzzling since the other tests suggested that only SO (ie not SA, UR, NE, PL) had links with sociability. **End of comment.**

Her 1997 article is generally less detailed than her 1999 book. It includes ME and VE but reports only the sociability results because Eysenck et al (*European Journal of Psychological Assessment* 8, 109, 1992) had shown sociability to be highly correlated with extraversion. She does not explain why she did not use actual extraversion scores or include other traits, but this is resolved by the referee's comments, see below. The mean sociability scores per sign for SO, MO, ME, VE, MA and Asc are plotted below as differences from each mean:



For the **Sun**, the mean scores other than for Aries show a consistent up-down variation from one sign to the next, and the odd-numbered signs (including Aries) have a higher mean score than the even-numbered signs (44.83 N=269 vs 42.50 N=255), all consistent with sun-sign self-attribution, see 8.3.7. The low in Aries and the high in Libra suggested an annual sine curve, but the low in Aries was not found in other self-attribution studies (her 2009 version would have been the 30th), a point not mentioned in any of the versions.

For the **Moon** these means are reversed (42.17 N=253 vs 45.17 N=271) consistent with no self-attribution as per existing studies. For the **rest**, the mean scores show no regular variation other than the expected increase in sds due to non-uniform expectancies.

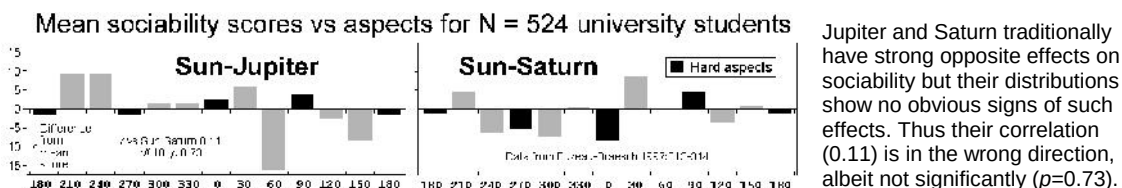
Fuzeau-Braesch does not report the correlations between plots, which are as follows:

	MO	ME	VE	MA	Asc	
SO	-.03	.73	.07	.09	-.05	Astronomically, and as expected, the highest correlation is between SO and ME (0.73, $p = 0.01$) but none of the others reach significance.
MO		-.03	-.38	-.28	.01	
ME			.42	.30	.02	
VE				.55	-.48	
MA					-.01	

A plot of the mean scores for a 10-degree window measured every three degrees across the zodiac (reported only in her 2009 version) showed a generally continuous variation with no evidence of the traditional cuspal jump from one sign to the next. Overall she concludes:

The global typology of the twelve signs thus remains valid only for general approximations and is applicable, in general, mainly to those born in the middle of the signs (2009:79).

She also looked at the distribution of Sun-Jupiter and Sun-Saturn angular separations, but the results were too inconsistent to allow meaningful conclusions:



Comment The author does not mention that the failure of signs to exhibit a cuspal jump was first demonstrated by John Addey three decades earlier (see 7.7.1997.2). Unusually, her JSE paper was accompanied by a three-page **report from the referee** John McGrew – his own test of astrologers is at 7.6.1992.2 – that raised the following concerns: **(1)** The original MS looked at potential links with each of the primary traits, not just sociability. But sociability was one of the few traits to show anything positive, so the results are most likely due to cherry-picking (reporting only the best results and not the others) after the event.

(2) Each potential link is examined by an individual t-test, leading to many opportunities for chance effects, which would be avoided by an omnibus test such as ANOVA (analysis of variance). If the ANOVA is not significant then no real differences exist between any of the signs, so the application of individual t-tests becomes pointless.

In fact Fuzeau-Braesch notes that an ANOVA test "nearly always produce p values >0.05 . Consequently such analyses are irrelevant for the purposes of this kind of study" (1997:300). It seems that by definition bad news cannot exist.

(3) Another solution would be to split the sample in half to see if any significant effects in the first half replicate in the second half. But no replication is reported, **(4)** The study purports to test astrological hypotheses but none are specifically outlined:

In other words, the author simply has carried out a series of tests and noted when they were significant, (ie an exploratory study) rather than limiting testing to examining specific questions. [But] the author has not applied the usual safeguards of an exploratory study (p.319).

Fuzeau-Braesch's response (p.320) is evasive. She claims her specific question had been about self-attribution because the existing studies were in disagreement. But she says nothing about cherry-picking or why she chose sociability scores instead of extraversion scores or why she did not attempt a replication. In her 1999 book her unsupported p values refer only to the *differences* between N=57 (or whatever) and N=524, regardless of whether the *direction* of the difference supported a particular hypotheses. In fact 49 (shown below in bold) of the 115 significant differences are *opposite in direction to that predicted by these hypotheses*, which predict positive signs = E+ P+, water signs = N+, and midway between water signs = N-:

Body	Trait	Number of students with $p \leq 0.05$ (mean $N=524/12=44$)													Sum	Total *
		AR	TA	GE	CN	LE	VI	LI	SC	SG	CP	AQ	PI			
Sun	E+	-	-	3	-	-	-	-	1	-	-	-	-	4	35 (34)	
	E-	1	1	-	-	1	-	-	-	-	-	1	4			
	N+	1	2	6	-	-	-	-	-	-	-	-	9			
	N-	-	-	-	2	-	-	1	-	-	-	-	3			
	P+	2	3	1	-	-	-	1	3	-	-	-	10			
	P-	-	-	1	-	1	-	1	-	-	-	2	5			
Moon	E+	-	-	-	-	-	-	-	1	-	-	-	-	1	20 (25)	
	E-	-	1	1	-	-	-	1	-	-	-	-	-	3		
	N+	-	-	-	-	-	-	-	2	1	-	-	-	3		
	N-	-	-	1	-	-	1	1	-	-	-	1	1	5		
	P+	-	-	-	-	1	-	-	1	1	-	-	-	3		
	P-	-	-	-	-	-	3	1	-	-	-	-	1	5		
Mars	E+	-	-	-	-	-	-	1	-	-	-	2	-	3	29 (29)	
	E-	-	-	-	1	1	-	-	-	-	-	2	-	4		
	N+	-	-	-	-	-	-	-	-	-	4	-	-	4		
	N-	-	-	-	-	-	-	2	1	-	-	4	2	9		
	P+	-	-	1	-	-	1	-	-	-	-	2	-	4		
	P-	-	-	-	-	1	-	-	-	-	2	-	2	5		
Asc	E+	-	2	-	-	-	1	-	1	-	-	2	-	6	31 (32)	
	E-	1	-	-	-	-	1	-	1	-	1	-	-	4		
	N+	2	-	-	-	-	2	-	-	-	1	-	-	5		
	N-	-	-	-	1	-	-	-	-	-	-	2	-	3		
	P+	-	1	-	1	-	-	-	1	-	-	1	2	6		
	P-	3	-	-	-	-	1	2	-	1	-	-	-	7		
Total		10	10	14	5	5	10	11	12	3	8	14	13	115	(120)	
Total opp		5	6	2	4	4	4	5	8	1	5	0	5	49		

* Table is from tables, her pp.92-187. () = total from text p.188.

The predictions ignore the traditional influence of the planet, which (given that Mars is fairly evenly divided between + and -) seems secondary to sign. Even if this traditional influence is arguable, the potential conflict between the *existence* of a difference and its *direction* should be evident – a point recognised by the referee but not by Fuzeau-Braesch. **End of comment.**

Nevertheless the study as reported in her 1999 book concludes:

We can say that the solar zodiac is remarkably confirmed by our works, even beyond what we expected. [But] our test is limited because it can only account for 38 well-defined personality traits, and it would take many others to describe an individual (p.216). Of course the above-mentioned balance sheet for the zodiac is more solid than the one concerning the aspects, and it must be emphasised that in order to validly treat the latter, a population numerically at least a hundred times larger would be necessary. Finally I owe thanks to: the late Professor Eysenck, who authorised me to translate his personality test, the late Professor Vexliard who introduced me to this method of testing, F Santoni who computerised the personality test, P Dicharry who made the computer calculations, Professor Tomassone for guiding the calculations relative to sociability, JB Denis for useful statistical contacts, and the 524 students (pp.219-220).

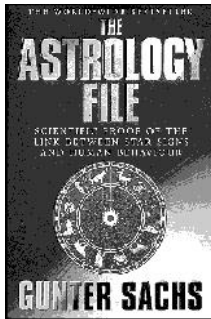
Comment It is disappointing that, despite all this help, so many fundamental mistakes were made. For example none of her versions divide the sample in half to see if the results replicate, so we have no way of telling if they genuinely differ from chance. Indeed, because her results indicate the presence of self-attribution, we have reasonable grounds for questioning any astrological conclusion based on them. Furthermore there is no reference to hidden persuaders or to the many dozens of studies of signs including Gauquelin's that have consistently shown signs to be without useful validity. This alone should have persuaded any researcher wishing to make tests to at least design them differently from Fuzeau-Braesch's. She refers to *Recent Advances* but only once (1999:28), dismissing its findings as the result of small samples (many were larger than hers), and misreporting its publisher and place of publication (p.367), which are not easy mistakes to make if you have actually read it. All of which suggest that her belief in astrology was stronger than her need to be scientific. Nevertheless to the extent that her data was painstakingly acquired, it could repay a more rigorous analysis. The 524 personality scores and birth dates are said to be available to anyone who is interested (1997:316).

7.1.1997.3 Testing Alice Bailey's ray theory of sun signs N=200

Peter Niehenke, *Correlation* 16(1), 29-31, 1997.

James David recently claimed that, using Alice Bailey's theory of "Seven Rays", photographs of

people could be accurately matched to their sun sign. I had tested similar sun-sign claims before, with negative results. So his claim was hard to believe. To test his claim I sent him about 200 photographs collected from my students, of which he rejected two-thirds as being not definite enough. His results (6 hits for 72 photographs) were exactly at the chance level of 72/12. James then repeated his test after increasing the rejection rate, and increased his hit rate to 15 for 58 photographs, which (since he now knew the answers) was not convincing. So I grouped these later results by judgement certainty. Of 45 more-certain results, 12 were hits (27%). Of 13 less-certain results, 3 were hits (23%). So there was no clear tendency for the hit rate to increase with judgement certainty. These results indicate that the theory as applied by James David has no validity. There is no justification for conducting a more elaborate test.



7.1.1998.1 Book review: *The Astrology File*

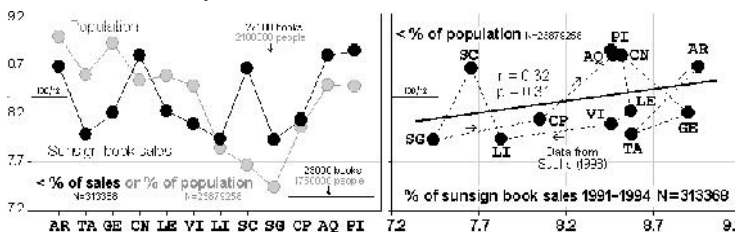
Gunter Sachs, *The Astrology File: Scientific proof of the link between star signs and human behaviour* 1998. First published in German in 1997. A best-seller that tests sun signs in 11 areas of behaviour including crime, compatibility, death, driving record, profession, and suicide, using large samples (often millions of cases) from sources such as the Swiss census of 1990. With the help of the Statistical Institute of Munich University and the head of the Institut für Demoskopie, a respected German opinion research institute, he made corrections for demographic effects and then applied a chi-squared test to the observed and expected sign totals. There were many significant differences that he saw as proving the effect of sun signs, even though they did not always support tradition. The author studied mathematics before becoming a photographer and documentary film maker with an international reputation. He is not an astrologer nor a protagonist, and his approach is largely neutral.

Sachs's style is readable and entertaining. He gives comprehensive tables and figures in support of each test. Nothing is hidden. But he claims (wrongly) that his study was the first attempt:

in the long history of astrology to examine by means of a broadly structured scientific study the possible effect of star signs on human behaviour (p.10) ... How is it possible that neither scientists, nor the powers that be, have attempted previously to get to the bottom of the age-old phenomenon of astrology? (p.210).

As a result he never cites existing studies, which often found differences opposite to his own, nor does he avoid the statistical mistakes and problems that they uncovered. This means there are many possible explanations for his results, all more plausible than astrology. Nevertheless his work contradicts the idea promoted by astrologers that astrology cannot be tested by statistical methods. He also provides interesting findings not easily available elsewhere.

For example who buys what sun sign book? Over the four-year period 1991-1994 the Heyne publishing house in Germany sold 313,368 books in its paperback *Zodiac Signs* series. The sales by sun sign and the sun sign of 23,879,258 Germans born 1950-1979 (calculated from the breakdown by month) are shown below. The data are from pp.53-54:



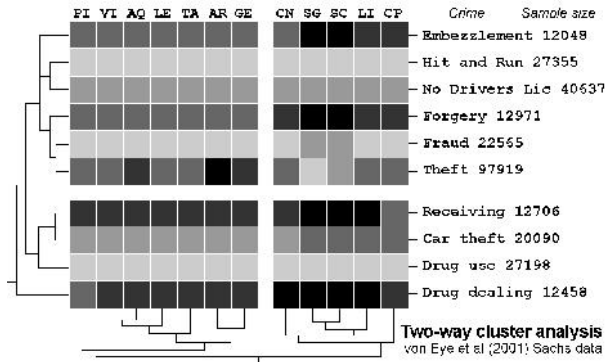
Left: Black dots show the actual book sales for each sun sign. Grey dots show the sales predicted by each sun sign population. There are many difference, for example TA sales are notably low (matching the idea of TA stubbornly not wanting to know) and SC sales are notably high (matching the idea of people wanting to know SC's secrets). The numbers are huge, so the differences are very significant, which Sachs saw as "some kind of definite correlation between being born under a particular star sign and buying astrological literature" (p.58). But people might also be buying for a sign's provocative reputation or its social desirability. **Right:** Same data but sales plotted against population. The correlation ($r = 0.32$) is not significant ($p = 0.31$) contrary to Sachs's claim,

Sachs's crime results (pp.157-172) have been re-analysed by von Eye et al, *Psychology Science* 45(1), 78-91, 2003. Crime is of special interest because it seems unlikely to be influenced by self-attribution. Sachs analysed all 325,866 cases from Swiss criminal justice statistics 1986-1994 for 25 different crimes, which when crossed with 12 signs forms a contingency table with $25 \times 12 = 300$ cells, of which 55 cells (18%) were significant $p < 0.05$ by chi-squared tests vs 15 cells expected by chance. Because some crimes had low base rates, Sachs selected the

top ten crimes x 12 signs = 120 cells, of which again 18% were significant at $p < 0.05$. Nine frequencies were higher than expected, for example drug dealing PI and forgery GE. Thirteen frequencies were lower than expected, for example drug use PI and theft TA. However when corrected for the number of tests, only one result was significant (drug dealing CP), which in a table with 120 cells is "not necessarily surprising" (p.86). The authors comment:

Note that *convictions* are analyzed rather than crimes for which the number of unrecorded cases can be very large. If entire populations are analyzed, statistical significance testing has no longer the same meaning as when samples are analyzed. [So] the status of the analyzed data as a random sample can be questioned (p.86, their emphasis).

They then present this two-way cluster analysis of the same data:



Crimes are in the rows. Signs are in the columns. At left and bottom are the cluster hierarchies. Crimes seem to form three main clusters with drug dealing forming the last cluster. Signs seem to form two main clusters more closely described by seasonality than by polarity, element or quality.

The mosaic shows the interaction between crimes and signs (darker = more). A variation in each row would indicate that a relationship between crimes and sun signs exists, but the only discernible variation is for theft. Independent tests including those by Sachs show that the smaller number of thefts for SG is within expectation. Overall there is no indication that sun signs have any effect on crime.

Another example is this re-analysis by Suitbert Ertel (abridged from *Correlation* 17(1), 44-49, 1998) of Sachs's results for 358,763 Swiss marriages and 109,030 Swiss divorces (pp.63-98):

Sachs derived $12 \times 12 = 144$ man-woman (and 144 woman-man) sun sign combinations for his 358,763 Swiss marriages, tested each of the deviations from expectancy by a chi-squared test, and claimed success. But this was an invalid approach. If an affinity exists where, say, Aries men like Leo women, then this affinity should have some correspondence with the reverse liking, where Aries women would generally be expected to like Leo men. We might even allow for an inversion, where Aries women dislike and therefore do not marry Leo men. To check if either was supported by Sachs's results, I listed the deviations given by Sachs for each combination of Aries men and non-Aries woman, and for each combination of Aries women and non-Aries man. When ranked in terms of signs, with the most popular first (AR likes this sign the most) and the least popular last (AR likes this sign the least), the results were:

	Most											Least
Aries men like	LE	TA	GE	PI	VI	LI	CP	AQ	CN	SG	SC	
Aries women like	SG	LE	PI	AQ	CP	LI	TA	GE	SC	VI	CN	

In the above table some signs such as LE and PI seem consistently liked by both AR men and AR women, others such as CN and SC seem consistently disliked, while others such as TA and SG show no consistency. Ranking signs conceals how small the differences are, thus the most or least liked sign is typically only about 6% more or less numerous than expected by chance. But is the order of liking by Aries men related to the order of liking by Aries women? This is easily answered by calculating the Spearman rank correlation ρ (rho) between the two sets of rankings, which gives $\rho = 0.18$, an insignificant value of correspondence. This is just for Aries. What of the other signs? I analyzed these in the same way and obtained the following mean rank correlations between the order of liking by men and the order of liking by women:

Sign	AR	TA	GE	CN	LE	VI	LI	SC	SG	CP	AQ	PI	AV
Mean	.18	-.13	-.15	.21	-.06	-.19	.01	.21	-.23	.63	-.25	.36	.05

Half the correlations are positive and half are negative, whereas astrology suggests they should be consistently large and positive. The highest correlation of 0.63 is individually significant ($p = 0.03$) but not when corrected for the number of tests ($np = 0.38$). The average correlation of 0.05 is not even weakly significant ($p = 0.88$). Here each sun-sign combination occurs twice, first as say AR-LE and again as LE-AR, so the 11 correlation ρ s are

not fully independent. Each isolated mistake, each glitch in the data, could therefore make itself felt on two separate occasions. To avoid this problem I applied the same Spearman analysis to the $12 \times 11/2 = 66$ pairs of unique combination AR-TA, AR-GE, ... CP-PI, AQ-PI.



The mean correlation ρ was 0.075, again not even weakly significant ($p = 0.53$). The outcome was no better for Sachs's 109,030 divorces. Altogether there is no hint of the correspondences expected if Sachs's results were genuinely due to astrology. Instead there is only noise. There are reviews of Sachs's results by astrologer Niehenke in *Correlation* 17(1), 41-44, 1998 and by statistician Basler in *Skeptiker* 11(3), 104-111, 1998. Both plus Ertel's review are at www.astrology-and-science.com. All conclude that Sachs's claims are invalid. A posthumous sequel (pictured) on events in his life ignores these comments and for researchers is essentially more of the same.

7.1.1998.2 Sun and Moon signs of 1471 Benedictine monks

Jos Verhulst, Non-uniform distribution of Sun and Moon signs in Benedictine monasteries, as submitted to *Correlation* 1998. Although not accepted for reasons given below, the results make an interesting visual exercise for researchers. Dr Verhulst is a Belgian political philosopher, anthroposophist, and author of many articles mostly on Christian and esoteric subjects with a few on lunar phase (see 8.4.7 for an earlier study of Benedictine monks) and Sun/Moon signs.

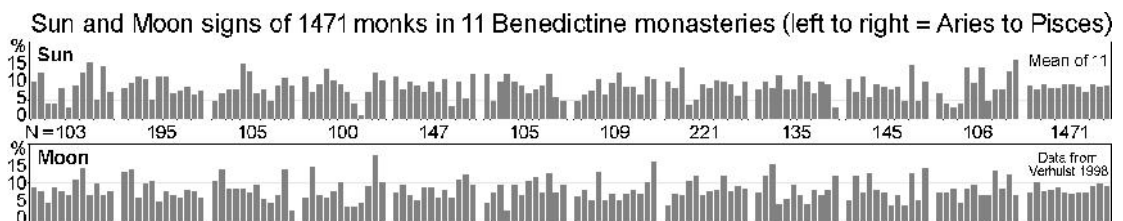


Among the data given for several thousand Benedictine monks in *Catalogus Monasteriorum OSB* 1995, eleven monasteries with at least 100 monks were listed. Verhulst (pictured) extracted their (untimed) birth data, calculated their Sun and Moon signs, found their distribution differed from chance at the $p = 0.04$ and 0.05 levels respectively, and concluded that "certain zodiacal signs are more favourable to monastic cohabitation than others".

Comment Benedictine monasteries follow the rule of St Benedict 540 AD but are otherwise autonomous. Monks follow a daily schedule of prayers, liturgy and work, typically beginning at 4am. In 2016 there were 350 monasteries and 6865 monks, average 20 per monastery. The monkish life is not for everyone, making it a good subject for astrological study. Except that the number of monks is currently declining by about 10% every ten years, which decline seems hard to explain in terms of sign frequencies. But ignore this problem:

Verhulst's approach is (1) assume sign expectancies are uniform, (2) find deviations from uniformity, (3) attribute those deviations to astrology. Obviously step (1) is invalid for the Sun, especially as the monasteries were widely scattered (four in the USA, two in Germany, the rest in Hungary, Spain, Switzerland, North Korea and Tanzania), which means their demographic influences could hardly have been less uniform. In step (2) Moon frequencies are unreliable in the absence of birth times (all charts were calculated for noon GMT), although not enough to suppress a sufficiently strong Moon sign effect. Step (3) is unwarranted unless other sources of variation have been eliminated.

Nevertheless Verhulst's results are of interest because he presents the sign distributions for each individual monastery. If certain signs *usefully* favour the monastic life, their effect should be visible by eye in each distribution. But are they? Judge for yourself. Here are the sign totals for each monastery plotted as % of the sample size, so the mean is $100\%/12 = 8.33\%$:



The distributions seem (and are) all over the place. Careful if tedious examination by eye reveals that neither the Sun nor Moon show any general similarity between one distribution and the next, so only noise seems to be present. To

be sure, some distributions are alike, thus the most alike distributions are 147,145 for the Sun ($r = 0.66$) and 100,147 for the Moon ($r = 0.82$). But others are unlike, thus the most unlike distributions are 103,147 for the Sun ($r = -0.59$) and 103,135 for the Moon ($r = -0.79$). These extremes cancel out, and the mean correlation r between all possible pairs of distributions ($N = 53$) is a negligible -0.038 for the Sun ($p = 0.78$) and a negligible $+0.027$ for the Moon ($p = 0.85$). The mean distributions for $N = 1471$ are more uniform due to their larger sample size, but effect size r for the maximum observed frequency is only 0.026 for Sun Gemini and 0.064 for Moon Taurus, again both negligible.

The mean r 's of -0.038 and $+0.027$ may be negligible but is their magnitude consistent with likely changes in sign frequency due to astronomic and demographic factors? To find out:

(1) Allocate monks to each sign at random using the same N for each monastery, (2) Multiply the totals for AR-TA-GE by F and the totals for LI-SC-SG by $1/F$, which crudely simulates a demographic wave of amplitude $F-1$. (3) Let F be 1.00, 1.03, 1.05, 1.10, 1.15, 1.20 (on this scale 1.03 is typical of sun sign effects due to the differing times spent in each sign, and 1.10 is typical of demographic waves which can reach 1.20 or higher). (4) Repeat 5000 times and determine the mean r between all possible pairs ($N=55$). The results indicate Yes:

F	1.00	1.03	1.05	1.10	1.15	1.20
Mean r	0.001	0.007	0.015	0.046	0.095	0.160

The observed $|r|$'s of 0.038, 0.027 best match the mean r for $F = 1.10$ typical of demographic waves, and for the Sun (0.038) it is at least not impossibly inconsistent with the F of 1.03 typical of the differing times spent in each sign. But this conclusion is possible only because the sensitivity and reliability have been greatly increased by the 5000 replications. Correcting each individual distribution for such factors would be futile because they would be automatically swamped by the much larger sampling errors due to their much smaller samples.

7.1.2000.1 Age of Aquarius: when does it start?

Nick Campion, *Correlation* 19(1), 7-16, 2000.

Astrologers frequently claim that the Age of Aquarius is beginning or is imminent. But there is no agreement on when it begins or how its beginning is to be calculated. Normally the Age begins when 0° Aries in the tropical zodiac precesses into the equally-sized sidereal sign of Aquarius or into the unequally-sized sidereal constellation of Aquarius. When this occurs will depend on where the boundary of the sidereal sign or constellation is. But opinions vary widely with school and astrologer. Includes a referenced list of nearly 100 dates between 1457 and 3550 that have been proposed (mostly by believers) for the beginning of the Age of Aquarius.

7.1.2000.2 Sun signs: response to an armchair invitation

Dean & Mather, Sun sign columns: Response to an invitation, *Skeptical Inquirer* 24(5), 36-40, Sep/Oct 2000.

During June-November 1996 the authors contacted several thousand astrologers and two dozen interested scientists by articles in journals; by internet postings on four astrology mailing lists and on alt.astrology; by direct mailout to astrologers, astrological organisations, and scientists (total $N=115$); and by handouts at the 1996 Astrological Research Conference in London ($N=40$), and invited their ideas for testing sun sign forecasts and delineations. The invitation was to devise tests, not to perform tests, so nobody had to leave their armchair. The deadline for replies was 31 January 1997. A total of 16 astrologers and 14 scientists responded from a total of nine countries. Perhaps the most telling comment was from Queensland philosopher Professor William Grey, one of the few philosophers to have interacted with astrologers and to have initiated a national survey of belief in astrology:

Astrologers have had plenty of opportunity to establish the validity of sun sign astrology via double-blind tests. That they have not done so is most easily explained by the hypothesis that they cannot do so. Sun sign astrology is not knowledge but epistemological hallucination [ie delusion] (p.38).

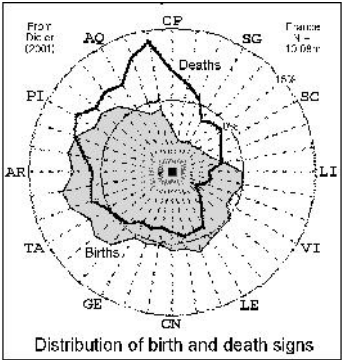
As for the tests, there was essentially no difference between those devised by astrologers and those devised by scientists, or between those devised and those already made. This outcome suggests that the existing negative verdict on sun signs is unlikely to change. The authors sent their findings to the leading astrological bodies in seven countries (AA Britain, CEDRA France,

CIDA Italy, DAV Germany, FAA Australia, ISAR & NCGR United States, NVWOA Netherlands) and called on them to declare their position either for or against the existing verdict. Because each body was known to be concerned about the public image of astrology, and had the means to make an informed declaration, they were confident of a good response. It did not happen. After two years only two bodies had replied. NCGR "prefers neither to endorse nor condemn [sun sign columns] at this time". NVWOA said "disapproval of astrology on the basis of sun signs" was not justified. The rest remained silent. But if the leading astrological bodies in seven countries can show no concern for the most consistently negative evidence in astrology, they can hardly complain if critics dismiss astrology (not just sun signs) out of hand.

7.1.2001.1 Sun signs: birth vs death N=10,081,752

Didier Castille, A link between birth and death. Published on <http://cura.free.fr/xx/18cas3fr.html>.

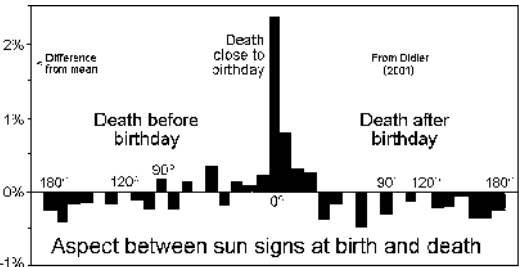
The birth and death dates for all deaths in France during 1979-1997 were obtained from the files of INSEE, Institut national de la statistique et des études économiques. For each date the longitude of the Sun at 12:00 GMT was computed, allowing a better (but obviously not totally reliable) classification by sign when the Sun changed sign. An incorrect birth date such as 30 February and 31 April was found for 216 deaths (0.002%). To avoid complications due to early deaths following birth (when the death will be artificially close to the birth date), 110359 children under one year were excluded, giving a final total of 10,081,752 deaths.



Distribution of sun signs for the 10,081,752 births and deaths. Births show a broad peak in spring. Deaths show a (not unexpected) sharp peak in winter

For each of the 144 combinations of birth and death signs, the expected frequency is readily calculated as row total x column total / grand total, for which the Obs-Exp differences were:

Birth sign	Death sign											Obs-Exp differences		Total observed	% of N
	AR	TA	GE	CN	LE	VI	LI	SC	SG	CP	AQ	PI			
AR	262	109	266	98	288	-163	-244	252	-337	-335	303	-499		899827	8.93
TA	-323	696	284	532	-119	287	146	-179	-5	-510	-252	-557		884089	8.77
GE	356	-367	401	12	153	-313	113	-311	-193	-175	121	204		846903	8.40
CN	-116	-145	614	597	33	705	-236	195	-229	-272	-527	-621		855160	8.48
LE	-212	-287	155	61	743	46	-213	95	-185	-250	-208	255		847309	8.40
VI	-177	307	-111	-361	-165	335	367	-23	-186	24	-179	169		831019	8.24
LI	-170	-392	-265	-305	-216	-32	576	223	-269	477	43	330		810943	8.04
SC	-240	203	-128	-15	-231	36	-369	658	-100	-276	191	272		775576	7.69
SG	183	44	-287	183	-437	-223	-132	116	1110	143	-568	-133		771515	7.65
CP	-99	227	-263	14	64	-206	70	-518	-34	794	285	-334		813385	8.07
AQ	263	-99	-608	-388	-290	-205	384	-395	26	336	897	77		857721	8.51
PI	272	-296	-59	-430	177	-268	-462	-113	402	45	-105	837		888305	8.81
Tot	(857,	837,	816,	825,	800,	773,	796,	823,	846,	921,	890,	890,	N = 10,	) 100	
als	(789,	843,	502,	615,	881,	889,	846,	219,	457,	273,	656,	782,	081,752	) .00	



Deaths in the same birth sign (shown in bold) are consistently high. Further analysis showed that >2%, or significantly more than expected, died within 30 days of their birthday.

Birth-death aspects by sign show a dominant peak for the conjunction, and essentially nothing for the other aspects.

The age at death rose steadily to a peak at 83, then quickly fell away to a maximum of 115.

Comment Links between birth days and death days have been widely reported and are attributed to efforts to reach a birthday before dying; and to suicide, heart attacks, binge drinking, and accidents during birthday parties. Thus the US drinking age of 21 leads to a

large increase in deaths on the 21st birthday and the day after (Carpenter and Dobkin, *American Economic Journal: Applied Economics* 1(1), 164-182, 2009). 25m Americans 1998-2011 showed a 7% excess on the actual birthday, being most pronounced at weekends and reaching 25% among 20-29 year-olds (Perfia, *Social Science & Medicine* 126, 59-66, 2015). In Switzerland a 14% excess was linked to heart attacks in women and to accidents in men (Ajdacic et al, *Annals of Epidemiology* 22(8), 603-606, 2012). Another 12m Swiss 1969-1992 showed a 17% excess on the actual birthday and was highest in the over 80s (Boyet et al, *Sozial-und Praventivmedizin* 42(3), 151-161, 1997). Similar effects can be detected in sub-groups such as the entries in *Encyclopedia of American History* (DP Phillips et al, *Psychosomatic Medicine* 54(5), 532-542, 1992). There is clearly no reason to link any of this with sun signs.

7.1.2003.1 True Confessions: don't try this test at home

A true story from an E-skeptic subscriber, August 2003.

My girlfriend's family are very smart people who believe weird things. She has a large extended family, all firm believers in fringe concepts including astrology, ghosts, and psychic powers. If I express any skepticism on these matters I am quickly stifled.

On the last birthday of my girlfriend's mother, they held a huge party. As an experiment, I found an astrology website on the internet, and printed out 30 copies of the full 12-sign horoscope. However, I changed 15 of the copies using Microsoft Word so that the readings no longer matched up with the zodiac sign. At the party, I handed out the copies and had everyone rate how accurate their own readings were on a scale of 1 inaccurate to 5 accurate. Of course I did not tell them that 15 of them were reading false horoscopes. In the end, the average score was 3.7 for the correct horoscopes, and 3.9 for the non-correct.

Afterwards I showed how the doctored horoscopes had actually got a slightly higher rating. The response was alarming. I was called a know-it-all by at least two people, was attacked within earshot by another, and was required to apologise by my girlfriend. Conclusion: skepticism about sun signs may be very rewarding but it has ruined my love life.

7.1.2006.1 A novel approach to testing sun sign forecasts N=1

Alison Gillett and Haylee Neilson. Entry (Honourable Mention) in WA Awards for Young Critical Writers, *The Skeptic* [Aus], 26(3), 18-25, 2006:22. The authors are 13-year-old high school students. What follows is largely verbatim.



We are going to test whether Zodiacs are true by surveying a willing Cancer subject [a teacher] for two half days. The horoscopes will be from *The West Australian* [the major daily newspaper]. Day 1 said:

Average Day. Feeling of boredom or dissatisfaction can be blamed on your ruling Moon. Today marks the end of a month-long phase and from tomorrow onwards you can expect more variety, greater contentment and positive feedback.

We started observing the subject from 9:00 am to 12:30pm. We could not see anything in the prediction that really stood out as something to watch for, something to really prove our point. However, we questioned our subject on whether or not they had been feeling bored or dissatisfied and they answered no! Day 2 said:

Positive Day. Moon in your sign gives the impression of vulnerability, but inner strength keeps you resilient. Latent talents or desires could surface soon and others will be stunned as the layers of your personality are peeled away.

We observed the subject from 11:30 am to 3:23 pm. Again, nothing really stood out in the horoscope prediction but we thought that the hidden talents might begin to show. However, no new talents were shown and we could not see other people being stunned by our subject's personality. It was disappointing that the star signs didn't put up more of a fight and show us some real magic, but that's that!

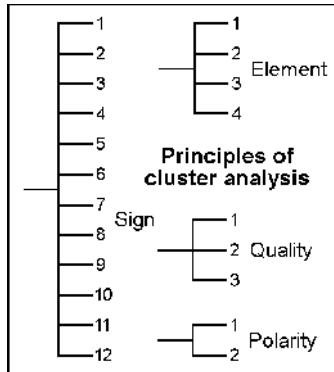
From our study, we came to the conclusion that the horoscopes don't predict the truth. It's

probably just somebody sitting in an office, with the job of pulling twelve random predictions out of nowhere. We found nothing except for the fact that some horoscopes don't actually predict anything. Weird, hey!

Comment Similar negative results are reported for the same approach in 7.1.2015.3.

7.1.2006.2 Forcing 436 students to fit sun sign astrology

M Peterson and KM Cramer. *Journal of Psychology and the Behavioral Sciences* 19, 8-12, 2006. Cluster analysis is not often applied in astrology, and hitherto not to sun signs, so this study fills an important gap in the research base.



A cluster analysis groups components by their similarity. If people are clustered by their sun sign (each roughly one 12th of the population), astrology predicts that the clusters will differ according to the things held to be characteristic of sun signs. Similarly, if people are clustered by their Big Five scores into 12ths, each 12th should contain a preponderance of the sign whose characteristics happen to match it. And the same for any other subdivision based on astrology such as element and polarity. Cluster analysis is a sensitive technique, so the match need not be perfect for an effect to be detected. For a cluster analysis of Gauquelin data see 6.12.4.

The authors applied cluster analysis to the standardised NEO-PI (Big Five) scores of 436 psychology students at the University of Windsor in Ontario (76% female, mean age 20.9 sd 6.8), forcing the generation of 12, 4 and 2 clusters for comparison with respectively sun sign, sun element and sun polarity clusters (quality was not tested because 3 clusters are not mathematically compatible with 2 and 4 clusters). Ten students with birthdays within three days of a sun sign cusp were excluded even though their inclusion made no difference to the results.

According to astrology there is a systematic clustering of personality traits by sun sign, so that individuals of the same sign, element, quality, or polarity (who by definition are said to share certain traits) should be grouped into the same Big Five cluster more often than grouped outside that cluster. But chi-squared analyses found no hint of the predicted differences:

Signs $df=121$, $p=0.70$. Elements $df=9$, $p=0.86$. Polarities $df=1$, $p=0.69$.
 df (degrees of freedom) = $(n-1)^2$ where $n = 12$ for signs, 4 for elements, 2 for polarities

In other words no sign or element or polarity appeared in any one Big Five cluster more often than in any other cluster, and (conversely) no member of any Big Five cluster was born with the Sun more often in a particular sign or element or polarity than in any other, all of which is the opposite of what astrology predicts. A comparison with births divided by season instead of by element gave similarly nonsignificant results ($p = 0.19$).

Comment As usual one might argue that other chart factors have swamped the effect of sun signs. But the sample size ($N=436$) is too substantial, the Big Five is too comprehensive, the analysis is too sensitive, and the results are too insignificant for this argument to have much weight. If the differences predicted by astrology actually existed then they would have shone through and been detected. But they simply weren't there.

7.1.2006.3 What sign crashes the most cars?

Naomi Kim, reporting for Reuters Life, Toronto, 13 December 2006, downloaded from *Yahoo! News*.

In December 2006 Lee Romanov, president of a Toronto-based company that finds you the best rate from about thirty insurance companies, announced the results of her survey of 100,000 North American drivers' records under the catchy title *Car Carma*. "I was absolutely shocked" she said. "The results are overwhelming, showing drivers of certain astrological signs are prone to getting more tickets, while others seemed destined to have accidents. I'd rather get into a car with a 24-year-old Leo than a 25-year-old Aries".

Comment The story led to a minor media sensation and a summary in *Reader's Digest*. But similar surveys already existed. In 1996 the British-based insurance management company VELO analysed 25,003 claims. In 1997 Gunter Sachs (*The Astrology File*) analysed 67,992 convictions for driving offenses taken from Swiss Criminal Records 1986-1994. In 2002 Australia's Suncorp Metway financial services group analysed more than 160,000 claims, followed a year later by an analysis of an unspecified number of claims by Australia's car insurer AAMI. What did they find? Here are the results for respectively Car Carma accidents, Car Carma tickets, VELO accidents, VELO average cost of claim, Sachs's Swiss convictions, Suncorp Metway accidents, and AAMI accidents.

Most offending sun sign: Libra, Pisces, Taurus, Virgo, Aries, Gemini, Capricorn.

Least offending sun sign: Leo, Gemini, Scorpio, Pisces, Sagittarius, Capricorn, Virgo.

Gemini, Virgo, Capricorn, and Pisces can be seen as both worst and best, depending on which survey you believe. Astrologers might expect respectively Fire (reckless) and Earth (cautious) signs to be over-represented in the above results, but they occur only 3 times vs 3.5 expected by chance, which is hardly convincing support for astrology.

For Car Carma accidents vs VELO accidents across all twelve signs, the Spearman rank correlation coefficient is -0.38, which is neither significant ($p = 0.22$) nor in the right direction (the negative value shows the results disagree more than they agree). Such disagreement is normal for such studies, simply because the sign counters do not allow for demographic variations (some months have more births than others) and astronomical variations (some sun signs last longer than others due to the Earth's elliptical orbit, a difference that has nothing to do with signs vs constellations).

There are also surprisingly strong variations due to an effect called **Age Incidence**. Take anything dependent on age such as being selected for a school football team. Those born at the beginning of the selection period will have had more experience than those born at the end of the period. Which will help their selection for the football team and also bias its distribution of sun signs. In principle the same bias will apply to anything where age is a deciding factor such as owning a driving license, moving from a juvenile prison, or being legally diagnosed as a schizophrenic. The resulting distribution of sun signs may differ from that expected by chance but it will have nothing to do with astrology.

We cannot of course escape the natural variations due to sampling. Even if we sample random numbers and rank the results, something has to come first and last – and ranking the results can make small differences appear large.

But even if we know about the above problems, there remains the near-impossibility of accurately determining the natural occurrence of birth frequencies, which are of course needed to compare with our sun sign results. It is near-impossible because they can vary from year to year, from place to place, and even within the same place, but the data needed for an accurate base rate is almost never available, see 7.1.1977.3. So counts of sun signs will always be difficult to interpret. A large enough sample (as in the above surveys) will cause apparent differences to reach high levels of statistical significance with the potential to mislead the media and the general public. This important point is further explored with examples in 8.3.3.

7.1.2007.1 Can Sun element predict accidental death? N=356

Lance Storm, *Correlation* 25(1), 5-22, 2007.

The birth charts of 33 deaths by drowning and 36 deaths by alcohol showed an emphasis on Sun in Water signs consistent with tradition, but not significantly so unless Aquarius (an Air sign) is included. No special emphasis was found for 115 aircraft deaths, 6 choking deaths, 23 space disaster deaths, or 143 tuberculosis deaths. **Comment** The idea of relating something specific like death to something general like sign triplicity seems destined to fail.

7.1.2009.1 Yes, sun sign beliefs do influence self-views N=143

Michael Riketta, Self-stereotyping and sun sign. In EP Lamont (ed) *Social Psychology: New Research* 2009:257-265. His study gives special attention to the roles of knowledge, belief, and whether subjects suspected it involved astrology.

Subjects were 75 women and 68 men living in Germany mean age 32.5 range 18-90. Over two-thirds had a high-school diploma or were college graduates. In a quiet room, in groups of 10 or 11, they were told that they would be evaluating a new personality test, for which each had to arrange in a row twelve cards bearing the descriptions of each sun sign (but without sun sign names). The cards had to be fitted to their personality, from 1 most accurate to 12 least accurate. There was no time limit (actual time varied from 4 to 40 minutes). If a subject suspected that the descriptions might be linked to sun signs – this happened in less than five cases – or wanted to know where the descriptions came from, they were told the source was a new theory that would be explained later. When they were finished, they completed a questionnaire about their day and month of birth, sex, age, occupation, whether they knew their sun sign (and if yes to name it), whether they knew the characteristic traits of their sun sign (and if yes to name up to three), their knowledge of astrology, their belief in astrology, and the extent to which they had noticed a similarity between the descriptions and sun signs.

The descriptions had been prepared by a team of the author's students from two popular astrology books, several astrology websites, and the list used by van Rooij (*Psychological Reports* 84, 541-546, 1999). Each sign had six typical traits (three positive and three negative) printed on a card one below the other with positive and negative traits in alternating order, which in English translation (which therefore may not capture nuanced German terms) were:

AR: passionate, dominant, brave, impulsive, determined, capricious

TA: family person, stubborn, realistic, materialistic, sensual, slow

GE: talkative, fickle, curious, absent-minded, versatile, ambivalent

CN: caring, touchy, emotional, moody, homely, shy

LE: generous, authoritarian, cordial, dominant, self-confident, egocentric

VI: self-controlled, frigid, tidy, perfectionist, sharp-witted, rational

LI: diplomatic, conceited, compromising, avoiding conflict, outgoing, indecisive

SC: able to work under pressure, possessive, brave, dominant, strong-minded, irritable

SG: sociable, insubordinate, generous, touchy, idealistic, arrogant

CP: down-to-earth, solitary, ambitious, severe, dutiful, hesitating

AQ: inventive, detached, freedom-loving, unpredictable, unconventional, changeable

PI: well-tempered, touchy, helpful, labile, imaginative, unassertive

Almost all subjects (97%) knew their sun sign, but number of traits named, knowledge, belief and suspicion were generally low (see table below). When dichotomised into yes/no responses in 2 x 2 tables, these four variables correlated with each other with phi's between 0.28 and 0.40. The mean rank of their own sun sign description was 5.90 sd 3.58, significantly lower than the 6.50 rank expected by chance ($p = 0.04$), showing that subjects tended to pick their own sun sign in agreement with previous studies. When the subjects were dichotomised on the criterion of interest, the differences in mean rank were nearly all in the expected direction despite small sample sizes and generally small difference in the actual criterion:

Criterion	N	Mean rank	N rest	Mean rank	p of diff
No traits named	63	6.52 sd 3.74	80	5.41 sd 3.39	0.065
No knowledge	72	5.89 sd 3.74	71	5.92 sd 3.43	0.96
No belief	74	6.42 sd 3.63	69	5.35 sd 3.46	0.074
No suspicion	110	6.12 sd 3.50	33	5.19 sd 3.78	0.19
Low on all four	40	7.03 sd 3.73	103	5.47 sd 3.44	0.019

The author concluded that the results confirmed the effect of astrological beliefs on self-views (ie self-stereotyping or self-attribution), and opposed "an astrological interpretation" (p.263). The results were in agreement with other studies where people's self-descriptions in general had been shown to predict corresponding behaviours, eg Ajzen, *Attitudes, personality and behaviour* 2005; Meehl et al, *Journal of Personality and Social Psychology* 90, 862-877, 2006.

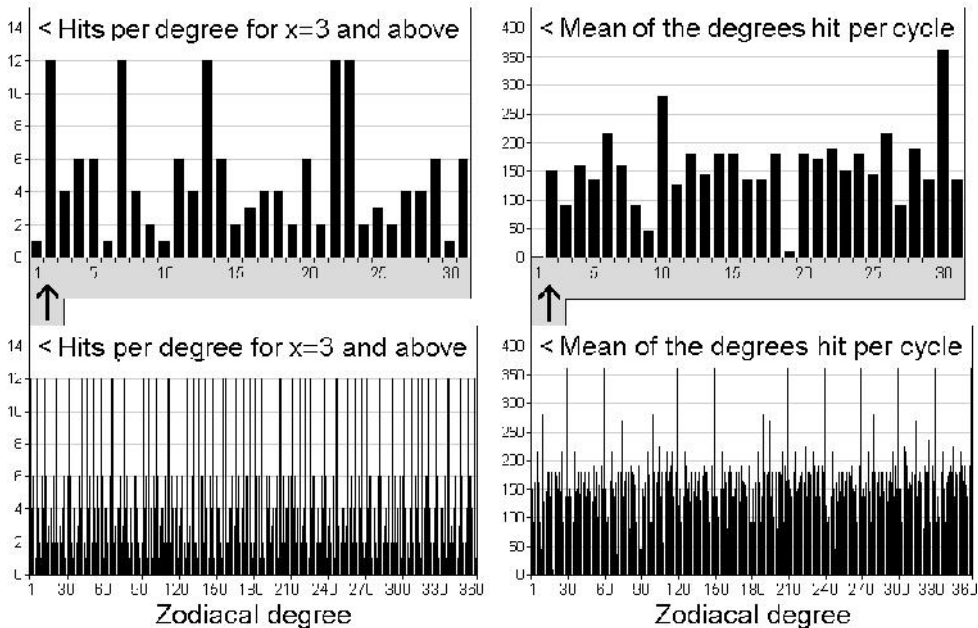
Comment Even though the subjects were generally older, better educated, and less knowledgeable about astrology than usual in such studies, a self-attribution effect was still detected, thus confirming how astrology can influence people's lives by altering their self-views. As shown in the two referenced example sources, anything that alters self-views is likely to alter behaviours as well, including behaviours like job choice, see also the end of 8.3.7. An effect due to chart factors other than sun sign may be extremely small, but in principle it may still be enough to explain occasional hits when large samples are tested. To see such hits as confirming astrology is as unwise as seeing self-attribution hits as confirming sun signs.

7.1.2011.1 New horizons in zodiacal futility

Henrike Mayer *Correlation* 27(1), 5-26, 2011. Although the study is focussed on zodiacal degrees with signs as a secondary consideration, it remains futile because signs were by then thoroughly invalidated.

I took any zodiacal degree n , where $n = 1$ through 360, raised it to the power x , where $x=1, 2, 3, 4...$, to give n^x , and then repeatedly subtracted 360 from the result to bring the answer into the range 1–360. I found that the maximum value of x ranges from 3 to 14, depending on n , after which the values of n^x start to repeat. To me this shows how the whole zodiac is joined together like interconnecting tubes. The numerical strength of each degree can now be judged by the number of hits it receives in the cyclic repetition. We can also calculate the breakdown of each sign and each degree into its component polarities, elements and qualities. Thus Aries is no longer a 100% Cardinal sign but is 37% Cardinal, 28% Fixed, and 35% Mutable, while 12° AR is a mixture of 24° LE, 18° CP, 6° SC, and 12° GE.

Comment The author provides more than 30 densely detailed tables and graphs but not the analysis shown below, which suggests that she is researching numerology, not astrology:



Left: Number of hits for each zodiacal degree before the cycle starts repeating. Each degree always has hits for $x=1$ and $x=2$, so restricting the plot to $x=3$ and above makes the differences easier to see. The **upper plots** show the first 30° in more detail. The **lower plots** show the full 360°. **Right:** For each degree, the mean of the degrees that are hit per cycle ranges from 1 (at 1° AR) to 360 at 30° of each sign. Close examination shows that the pattern is not symmetrical about 0, 90, 180, 270, or any other of the 360 degrees.

In *Correlation* 28(1), 44-45, 2012 UK astrologer Kevin Hawley points out that the n^x approach is essentially harmonics in disguise but with the disadvantages of: (1) The new n^x harmonics are linked to specific degrees (for example much of the 7th n^x harmonic operates only via 7° Aries), whereas true harmonics are independent of such degrees. (2) The approach allows

only whole degrees to be considered. (3) It unnecessarily complicates an already complicated situation. So he suggests that the n^x approach will be problematic.

A further problem is that signs are the most disconfirmed idea in astrology, so Mayer's results seem guaranteed to be futile other than as an academic exercise in numerology. Which may suggest that *Correlation* was clutching at straws to support a lost cause (signs), rather than encourage studies that could be of practical value. No comments other than Hawley's have appeared to date, suggesting that Mayer's n^x approach has been quickly forgotten.

7.1.2014.1 Sun signs and constellations vs the Big Five N=505

FK Miguel and LdeF Carvalho. *Psico-USF* 19(3), 533-545, 2014 (in Portuguese with an English abstract). The study is very well documented with nearly 60 references to the psychological and astrological literature.

Astrology says that sun signs differ in their personality traits. To find out if this is true, we administered the Portuguese version of the Big Five personality inventory via the internet to 505 subjects (70.5% female) mean age 25.6, sd 8.66, range 16 to 63. The results were analysed by the 12 sun signs of astrology and by the 13 zodiacal constellations of astronomy including OF Ophiucus. The main traits (positive and negative) of each sign were based on those given in 12 popular books and 3 websites; as expected the level of social desirability was much higher for the positive traits. The breakdown of participants by sun sign and sun constellation was:

	AR	TA	GE	CN	LE	VI	LI	SC	OF	SG	CP	AQ	PI	Total
Sign	50	51	34	38	45	33	42	49	--	32	44	38	49	505
Constellation	43	43	35	32	41	58	42	11	19	43	35	36	67	505

The distribution is fairly even for signs, but not for constellations because the time spent by the sun in each constellation is very variable, eg 44 days in Virgo vs only 7 days in Scorpio.

The Big Five personality factors and their components are:

Neuroticism 1 vulnerability, emotional distress. 2 emotional instability, mood swings. 3 passivity, lack of energy.
Extraversion 1 communication, easy contacts. 2 haughtiness. 3 dynamism, gets things done. 4 social interaction.
Agreeableness 1 kind, pleasant. 2 pro-sociality, follows social norms. 3 confidence in the honesty of others.
Conscientiousness 1 competence, awareness of needs. 2 caution, controls impulsivity. 3 commitment to quality.
Openness 1 ideas, uses imagination. 2 liberalism, new non-dogmatic values. 3 news, new situations and routines.

For each sign or constellation there were a total of $3+4+3+3+3 = 16$ possible comparisons with Big Five components. For **signs**, ten of the highest or lowest scorers were sufficiently different from their respective means to allow comparison with their astrological meanings: Six scored one hit each (AR, LE, CN, VI, LI, SC) and four scored one miss each (GE, VI, SG, AQ). For **constellations**, eight of the highest or lowest scorers were sufficiently different from their respective means: Three scored one hit each (LE, VI, CP), three scored one miss each (LE, LI, OF), and one scored two misses (VI). In each case the agreement with astrology was negligible and not significant. Signs were not measurably superior to constellations.

An analysis of variance (ANOVA) showed that every sign and constellation had people with low, medium or high scores. Some differences reached $p < 0.05$ (five for signs, four for constellations), which contradicts the idea that signs and constellations have specific traits. Even the significant differences were spurious because some were hits, some were misses, and others did not exist where expected. Many differences contradicted astrology. Thus astrology predicted Taurus *low in ideas*, Gemini *high in instability*, Cancer *high in kindness*, Scorpio *high in commitment*, Pisces *high in vulnerability*, none of which were confirmed.

The lack of control for self-attribution (which if present should have improved the results in favour of astrology) further emphasises the lack of support for astrology – previous studies had shown positive results only when self-attribution was not controlled, so participants knew what was expected for their sign. As for lack of control for other chart factors, the media and major newspapers in Brazilian cities devote space only to the sun sign, which is also true of the video terminals available in public places and transport, and of course in many astrology books. One may therefore discount the claim that other chart factors are of major importance.

Conclusion: Apart from disconfirming the idea that sun signs and sun constellations differ in their personality traits, the present study supports the clear distinction between science-based practices and those not science-based. Because the 2005 Brazilian Code of Professional Ethics for psychologists emphasises that all psychological work must be science-based, it is clear that the use of astrology to evaluate psychological characteristics should be strongly opposed and prevented. **Comment** For more tests of sun signs using the Big Five see next and 8.3.4.

7.1.2015.1 Do sun signs differentiate between people? N=34,000

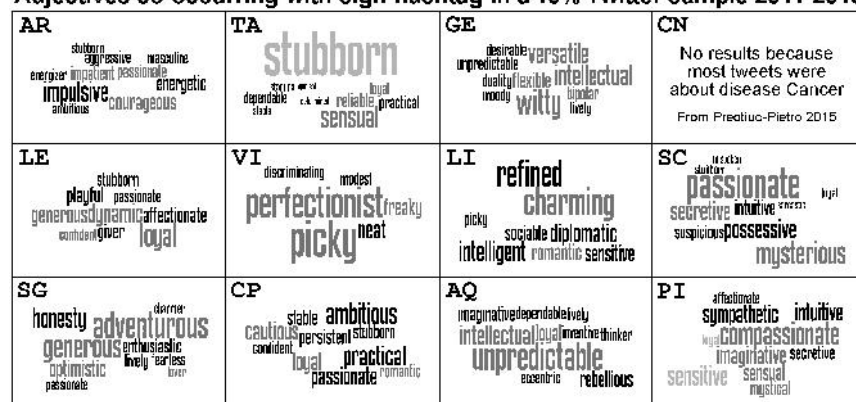
Andy Schwartz. July 2015. Differential language analysis for construct validation: Do people differ by astrological sign? www.biorxiv.org/blog/dia-on-astrological-sign-for-construct-validation. Schwartz et al 2013. Personality, gender, and age in the language of social media: The open-vocabulary approach. *PLoS ONE* 8(9):e 73791. A quiet breakthrough in research design because it taps astrological principles without assuming particular meanings. At the time Professor Schwartz was in the Department of Computer and Information Science at the University of Pennsylvania.

Schwartz's study was prompted by the results of a Twitter analysis by his colleague Dr Daniel Preotiuc-Pietro, also at the University of Pennsylvania, who described it like this:

In experiments on word usage in Twitter, I've constantly noticed some very coherent groups of hashtags and words belonging to astrology [a hashtag is a label used on social media and especially Twitter to identify messages on a specific topic]. Apparently many users post horoscope information, statements or comments and tag them using the name of the zodiac sign. So ... what are the most common traits that people use to describe each sign?

To find out, DP-P downloaded a 10% sample of Twitter data 2011-2015 and analysed it using a statistical measure called normalized point-wise mutual information, which measures how often two words (out of all possible pairs of words in the sample) occur together in the same context vs their chance occurrence, expressed as a number between -1 and +1. Thus for the word *police*, the top words that occurred with it in the Twitter sample vs chance were *officers* (0.430), *officer* (0.415), *investigating* (0.400) and *arrest* (0.383). For each sun sign hashtag the top co-occurring adjectives were grouped into word clouds as shown below:

Adjectives co-occurring with sign hashtag in a 10% Twitter sample 2011-2015



Strength and frequency are shown by size and greyness. The bigger the word in the word cloud the more strongly it is linked with the sign name vs chance, and the lighter the word (clearer in the original which uses colour) the less frequently the pair occurs regardless of strength. Co-occurring adjectives for each sign are similar to tradition, confirming that Twitter users were familiar with those meanings.

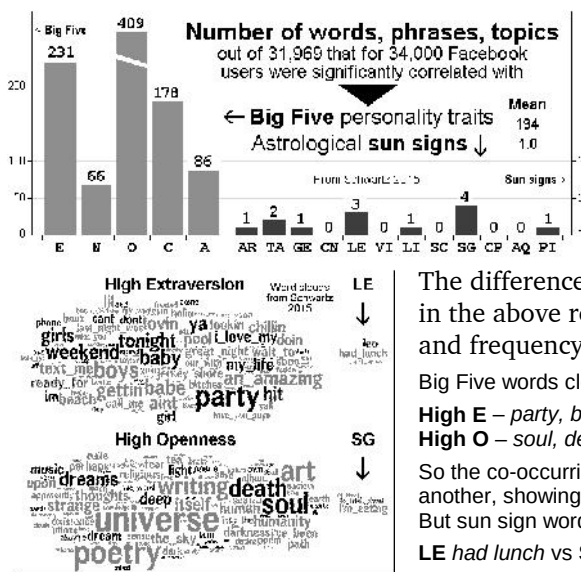
Schwartz noted that his own sign (Leo) was distinguished from other signs by adjectives like *loyal*, *generous* and *affectionate*, and that differences clearly existed in *descriptions* of sun signs. But do Leos actually differ in this way from non-Leos? Do people differ by their sign at all?

To find out, he applied a similar analysis to a sample of 46,092 Facebook users (participants in a US personality project) during 2009-2011 for whom birth dates, Big Five personality scores, sex, and Facebook updates of 1000+ words were available. The idea was to find the number of features (words, phrases of up to three words, topics such as sports, entertainment, and hobbies) that best distinguished each sign from the others, and as a control each Big Five dimension from the other dimensions, using a total of 31,969 features that were mentioned at least once in a 1% sample and which occurred together more often than expected by chance (this kept the focus on common language undistorted by uncommon words).

The Big Five dimensions are:

- **Extraversion** (outgoing, talkative, active).) Sometimes
- **Neuroticism** (anxious, depressive, touchy).) remembered
- **Openness** (intellectual, artistic, insightful).) via the
- **Conscientiousness** (self-controlled, responsible, thorough).) acronym
- **Agreeableness** (trusting, kind, generous).) OCEAN

Because each dimension is a continuum from high to low and is therefore unlike sun signs (you are either a Leo or not), it was dichotomised into high and low by rejecting subjects who scored within 1.33 standard deviations of a dimension mean, which reduced the number of subjects per dimension to about 34,000. Corrections were made to avoid distortion by gender (females talk more about astrology than males) and by the steady increase in Facebook popularity during 2009-2011 (which might otherwise create an artificial difference between earlier and more recent users when they talked more on their birthdays). Some results were unremarkable, for example people living near the coast talk more about the beach than people living inland, and people talk more about the importance of friendships as they get older. Other results were new, for example males use *my* more often than females do when mentioning their partner, and they use the definite article *the* and indefinite articles *a*, *an* more, especially as they get older. But for sun signs the results were bad news for astrology:



This plot shows the total number of words, phrases & topics out of a possible 31,969 that were significantly correlated ($p < 0.05$ after correction for the number of comparisons) with Big Five personality traits (left) and sun signs (right). Each is differently scaled otherwise signs would hardly register.

Indeed, the difference is orders of magnitude, with maxima of 409 for openness and 4 for Sagittarius.

The difference is even more extreme when the actual words in the above results are displayed as word clouds. Strength and frequency are shown by size and greyness:

Big Five words closely match each dimension's meaning, for example:

High E – party, baby, weekend, girls, tonight, boys, an amazing.

High O – soul, death, dreams, deep, music, universe, art, writing.

So the co-occurring words clearly differentiate one dimension from another, showing that people with different scores really are different. But sun sign words show no discernible match with sign meanings:

LE had lunch vs **SG** I'm eating (although **LE** does mention Leo).

So unlike Big Five dimensions, sun signs do not differentiate between people. Schwartz concludes:

For the zodiac signs, we don't see any patterns generalized across multiple linguistic features like we do with artistic interests (*openness*) or socializing (*extraversion*) ... Although no obvious language patterns emerge for the astrological signs ... the difference between 409 and 4 presents quite a convincing case that astrological signs do not effectively distinguish people by personality.

Comment Quite apart from his huge sample size, Schwartz's study is a breakthrough in research design because it taps astrological principles without assuming specific meanings and without asking subjects astrology-related questions, thus avoiding associated confounds. For more about the data recorded on Facebook see 7.1.2018.1.

7.1.2015.2 Indian astro numerology vs 84 Twitter followers

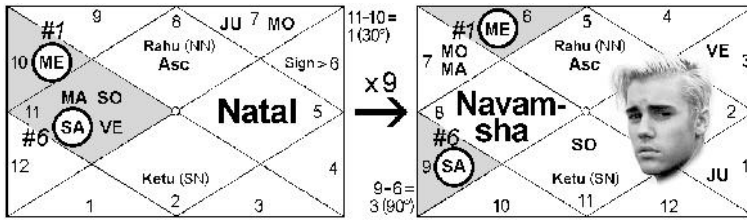
Renay Oshop and Andrew Foss, "Twitter followers biased to astrological charts of celebrities", *Journal of Scientific Exploration* 29(1), 9-34, 2015. Also featured with acclaim at the Kepler research conference January 2017 in Florida.

An aphorism in Jyotisha, the ancient Indian system of astrology, asserts that a person who has many followers can be identified using the seven classical planets and Rahu, the Moon's mean north node as follows (Ketu, the Moon's mean south node, is ignored): (1) Rank the eight by

the degree of their natal sidereal sign in descending order. **(2)** Select the first and sixth. **(3)** Followers are indicated if their signs are 0°, 90°, 180° or 270° apart in the natal chart or the navamsha chart. A navamsha chart is produced by multiplying all natal positions by nine, then successively subtracting 360° until the result is between 0° and 359°. The (Lahiri) difference between tropical and sidereal zodiacs make 0° sidereal Aries = approx 24° tropical Aries.

To test this aphorism the authors looked at the 1000 most popular users of Twitter as at July 2013 and their individual number of followers. After removing business users such as CNN, and users without reliable birth times, the result was 84 users (peak age 51 years, many born in Los Angeles) to whom the above procedure was applied. For example here are the ranked degrees for the Canadian pop singer-songwriter Justin Bieber born 0:56 am 1 March 1994 in London Ontario, who at the time had the most followers among the 84 Twitter users:

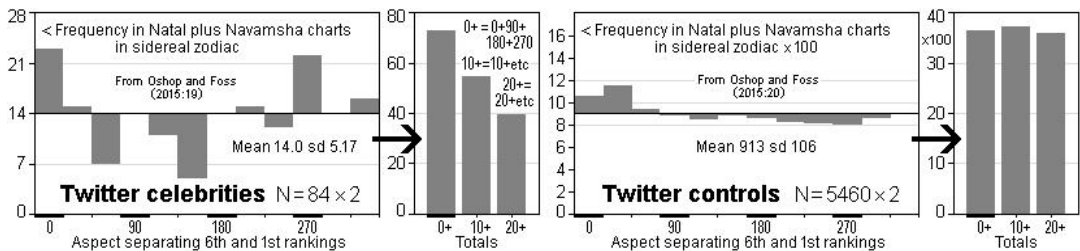
Rank	Planet	Deg	Sign	
1	ME	29.7	CP	1st (called AtmaKarakaka in Jyotisha))
2	VE	27.1	AQ	
3	NN	25.8	SC	<< because NN is always retrograde the degree to
4	JU	20.9	LI	be ranked is 30 minus (birth degree = 4.2 SC)
5	SO	16.6	AQ	
6	SA	10.0	AQ	6th (called Putrakarakaka in Jyotisha)
7	MA	1.3	AQ	
8	MO	0.8	LI	



Jyotisha charts show sidereal signs (here numbered) with the ascending sign always at top. **Left:** Bieber's natal chart with 1st and 6th positions labelled. **Right:** The navamsha chart is quite different as expected. For clarity, degree positions have been omitted from these charts.

The difference between the sign of the 1st (here CP) and the sign of the 6th (here AQ) is always counted from 1st to 6th in the direction of the signs. In the natal chart on the left they differ by one sign (30°), so the result is a miss. But in the very different navamsha chart on the right they are three signs apart (90°), so the result is a hit.

For controls the authors generated 65 sets of 84 charts whose data were picked at random from the times, days, months, years and birthplaces of the 84 celebrity charts. They rejected invalid combinations of day and month (eg 31 June) and accepted only sets where the mean (they do not explain which mean) had a probability < 0.05 of a false positive and probability < 0.10 of a false negative. Here are the results for natal and navamsha charts combined:



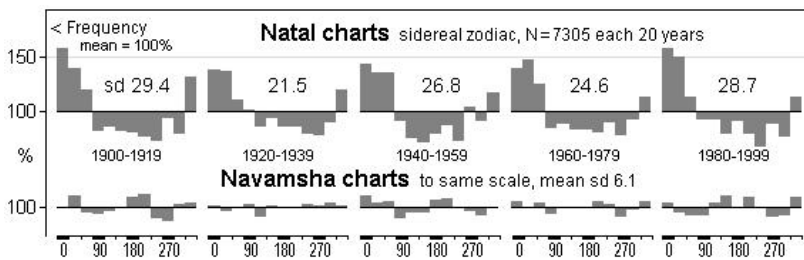
At first sight the distributions for celebrities and controls are quite different. **Left:** The highest peak for celebrities occurs when the 1st and 6th are in the same sign (0°), "suggesting that a conjunct relationship between [1st and 6th] is the most common ... relationship for celebrities" (p.19), which supports the Jyotisha aphorism. **Right:** The authors attribute the highest control peaks to "the relative proximity of Sun, Mercury, and Venus". When the two sets of totals were tested in a 2 x 3 chi-squared test, the significance level was $p = 0.0094$. The corresponding effect size (which the authors do not report), expressed as a contingency coefficient (similar to correlation r), is 0.029.

They further explore the differences with 12 pages of tests involving best-fit hypergeometric distributions, best-fit probit regression, log-log plots, derivative plots, standard non-linear curve fitting and p values expressed to 6 significant figures. They conclude that the number of followers is proportional to the number of aphorism hits, "and that the validity of cultural Jyotisha astrological maxims should be considered in light of the demonstration in this paper

of the prospect of predicting a component of the astronomy at the time and place of a Twitter user's birth based on his or her Twitter follower numbers via the application of Jyotisha rules" (ie our results suggest that ancient Jyotisha aphorisms are valid) (p.33).

Comment Before we get too blinded by science, notice that the sample size of 84 is very small for something that will be divided into 12 parts, meaning huge sampling errors. Indeed the effect size of 0.029 (apart from being close to useless) suggests that reliable observations would require sample sizes of around $N = 10/(0.029)^2 \sim 12,000$, see 8.2.5. Also there is no replication even though Twitter originally provided 1000 cases. In other words the authors' conclusion is both premature and unsound. And consider this:

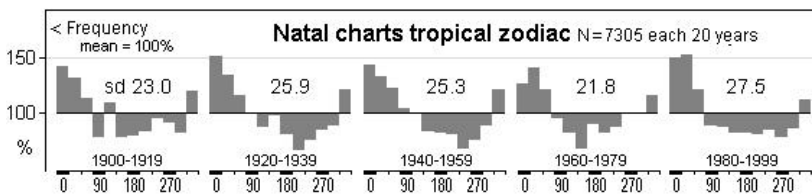
Because Mercury and Venus are never far from the Sun (maximum separation is 28° and 48° respectively), their mutual sign relationships will be dominated by conjunctions, so (as the authors briefly note) we can expect (1) the observed peaks to occur at and around 0° purely on astronomical grounds, and (2) the peaks to be less prominent in navamsha charts due to the mixing produced by multiplying everything by nine. The authors do not give celebrity results for natal and navamsha charts separately, so we cannot tell if this expectation is confirmed. They do give separate results for controls (which confirm our expectation) but it is not clear how their selection procedure might affect the outcome. However, we can explore this by applying the aphorism to sets of daily charts generated during 1900-1999, each chart being calculated for a random GMT and random place (the last affects only the Asc and MC), which when divided into five 20-year segments give 7305 daily charts per segment:



Top: In each plot the peaks at and around 0° confirm our expectation, and their general shape suggests that the authors' results are just an artifact of astronomy.

Bottom: In each navamsha plot the absence of peaks confirms our expectation.

The above standard deviations (mean 26 for natal and 6 for navamsha) show how thoroughly multiplication by nine has ironed out artifacts, an ironing-out confirmed by the consistently non-significant correlation between natal and navamsha plots. Thus for the above five plots in 1900-1999 mean $r = 0.004$ and mean $p = 0.53$. And for 1800-1899 $r = -0.213$, $p = 0.51$. The above artifacts are not the result of using the sidereal zodiac because the tropical zodiac gives very similar results despite the different degree positions and therefore their rankings:



Again there is the same concentration of peaks at and around 0° . The trough profiles are just as variable. The navamsha plots (not shown) were again without peaks, mean $sd = 7.4$.

The peaks and troughs in the above profiles are considerably larger than those in the authors' controls. Their consistency and their broad similarity to the observed celebrity profile suggests there is nothing in the authors' results that requires astrology or numerology to explain it.

The authors chose Twitter because it gave numbers of followers, whereas poll results for say politicians are said to be "notoriously fickle" (p.10). But politicians who have been repeatedly re-elected over the years would seem to attract considerably less fickleness than the transient idols of social media (did you know who Justin Bieber was?). In addition Western astrologers might well see a procedure based on ranking by degree position as numerology rather than astrology. Indeed ranking degree positions after multiplying by nine would require an accuracy that was not available to ancient sages, so this and other aphorisms based on nav-

amsha charts are highly implausible in the first place. Nevertheless the authors report that Jyotisha is "now increasingly popular globally" (p.9). For more on Hindu aphorisms see 3.6.

Comment Should we wonder how JSE referees could miss such obvious flaws? And notice how the authors' approach relies on blinding you with jargon and complexity. But is this not also true of Western astrology?

7.1.2015.3 Follow sun sign forecasts and see what happens N=2

Most critics and even astrologers dismiss sun sign forecasts as invalid by definition. Few bother to check the extent of their invalidity. Here are two checks taken from websites, one in India <https://www.quora.com/Is-astrology-true-Should-we-believe-in-it-or-not>. and one in New York <https://www.bustle.com/articles/61299>.

The first check on sun sign forecasts is by Indian critic Deepak Mehta.

He says: My sunsign is Capricorn. There are 500 million more like me. Here is the astrology forecast for me for September 2015 in *New Indian Express*. My comments are in italics:

Expect remarkable changes in your fundamental traits during this month. *What traits? What changes? Positive or negative? Isn't any change, no matter how small, always true?*

Instead of being a workaholic, you shall now spare considerable amount of time for your near and dear ones to fulfil your responsibilities and please your family. *If I go to a movie, I will subconsciously relate this to the prediction. But I probably go to a movie every month.*

The planetary combination of Rahu and Mercury in your 10th House might cause mood swings and irritate you. *As if swings are something special.*

Relations with your boss may be non-cordial as they might not approve your working style. Check your temper and do not go against the tide. *Thank you for such a valuable insight.*

This might also tarnish your image in workplace. Anyway, you shall be on cloud nine, as marital life will be blissful, this time around. *Any positive interaction or development will be taken as a sign of veracity of the prediction. Negatives will be ignored.*

You would also feel comfortable financially during the first half of this month. *Probably true for 90% of people, 90% of the time.*

But businesspersons may not achieve the desired growth. *That is the way companies work. Targets are always highly optimistic to drive growth, and are seldom met.*

A nagging illness may bother you around the middle of this month, otherwise you shall enjoy good general health. *A win either way.*

Your budget may go for a toss in the second fortnight. *Then again it may not.*

Sales revenue may also decline around the end of the month. *Because clients are busy closing their books and with other end-of-month activities.*



Mehta concludes (abridged): Notice how vague the predictions are, and how most of the statements are true of everyone. Sun sign astrologers rely on their reader's predisposition to see patterns where none exist, and to remember hits and forget misses. The forecasts work not because astrologers can actually predict or see the future, but because they understand people and are pretty good at making ambiguous statements that can fit anybody. And of course because readers want to believe.

The second check is from Jane Brendlinger, a New York writer, who in January 2015 followed her sun sign forecast for an entire month. Her comments are in italics. She came to astrology on the suggestion of her roommate, who told her:

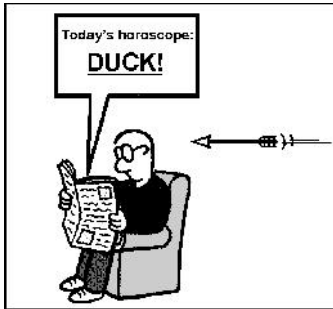
Look up Susan Miller [then New York's celebrity sun sign astrologer noted for long monthly forecasts free on her website] it's just crazy how accurate she is.

Could this Susan Miller really be the Messiah I was looking for? I wanted hard evidence of her magic powers. So I decided to live by her monthly horoscope for an entire month. Here's what Susan Miller predicted for me on certain days, versus the real-life results:

1 January. It's birthday time, when the smaller, personal planets that orbit close to earth surround you like loving little relatives, hoping that they can make any possible wish you hold in your heart come true.

My birthday has always been one of my favorite times of the year, and it's coming up this weekend. But it was hard to feel the planets hugging me and hoping my wishes would come true. Overall, January seemed like just another month.

13-14 January. One of my favorite days for you will be January 13, when Venus will be in perfect angle to your ruling planet, Uranus. ... a day that is so exciting you can barely contain yourself ... You won't expect all the wondrous things that can happen on January 14, so allow the day to unfold as you sit back and enjoy the surprises.



Perhaps I just needed to scale back these sweeping predictions to fit the realistic scope of my life. I spent most of the 14th on the Internet. In the rest of it I went to yoga, went grocery shopping, made pasta with eggplant and tomato sauce, and watched Scandal. Maybe that was a great day for me.

20 January. This new moon is so special because it will receive such comforting beams from Saturn. Saturn is so very comforting at this angle, and will help you set up a very stable plan for your future.

There was nothing that made the day stand out. No new moons, no Saturn. I woke up, went to yoga, got a green juice, sat in a coffee shop, wrote an article, watched YouTube videos and made a stir fry for dinner. My stable plan for the future? Maybe it's just this boring, risk-free lifestyle that I'm apparently cultivating here.

At the end of what was "just another month" Brendlinger concludes:

I'd seen the truth of a Mercury in retrograde (her laptop charger broke but a blizzard did not deliver the promised adversity). But where was my steamroll to success? Where was Venus, said to be making me irresistible to all men from 3 to 27 January? Perhaps astrology had escalated my expectations to an unrealistic level, and was easier to believe when things were going poorly, as when people turn to religion in their final moments. Maybe I wasn't *doing* it right. Maybe I needed to do more legwork on earth while the planets were aligning and retrograding. Maybe.

Comment As the Indian critic implied, it's all in the mind, not in the stars. See also the real-time test of 7.1.2006.1 and the comments on classroom tests in 1.8.2.

7.1.2018.1 Do sun signs correlate with Facebook usage? N=659

Ming-Shian Wu. *Correlation* 31(2), 75-84, 2018. Looks at the Facebook behaviours of 659 Taiwanese students at an unnamed university in northern Taiwan (actually Aletheia University where the author is in the Department of Digital Humanities). The potential challenge of studying belief in Western Astrology by Eastern students is not addressed.

The author suggests that testing astrology against personality scores, or by asking subjects to choose which of several chart interpretations is theirs, runs the risk that subjects may not understand the scores or recognise traits that are accurate descriptions of themselves. And tests of self-attribution have sometimes given inconsistent outcomes. Consequently:

It is clear that the validity of using astrology to make predictions on personality traits or specific actions of individuals is still controversial and open to debate (p.76).

Comment 1 But if subjects cannot recognise personality descriptions of themselves then what price psychological astrology? The problems of self-attribution disappear once sample size and effect size are taken into account, see 8.3.7. None of this invalidates his next point:

Facebook records everything that members share throughout the social networking site, and this valuable cache includes data on users' characteristics, interests, preferences and interactions between users. A number of surveys have suggested that the personality of the user is highly indicative of usage behaviours on Facebook. For example those who had low scores on [Big Five] neuroticism reported that the photo album was their favourite Facebook feature ... whereas those with high agreeableness scores were shown to use fewer page features ... Therefore, user-generated content on Facebook such as the personal profiles and posts on Facebook could be a sound source for studying the influence astrology has on personality traits and common social behaviours of the general population (pp.76-77, references for the Big Five findings have been omitted here).

To test this idea, the author obtained the consent of 659 Taiwanese undergraduate students to use their Facebook data for a study on "Personality and the use of Facebook" (astrology was not mentioned), from which a total of 19 items (personal attributes, interests, favourites) were selected for comparison with each student's sun sign. 59% were female, age range was 19 to 30, mean 20.9. Items were coded for magnitude by two independent coders, who were in 98.5% agreement or more on all items (this measure does not allow for chance agreement –

the agreement expected if each code is made at random – and therefore overestimates the true agreement, but for the present purpose it would still be satisfactory).

Tests of the 19 coded items against (1) sun sign, (2) positive vs negative signs, and (3) water vs non-water signs generally gave p values in the range 0.1 to 0.9, but two results achieved $p < 0.05$ ($p.81$), namely sun sign vs favourite music $p = 0.008$ (CP shared their musical tastes more often than AR, GE, LE, LI, SC), and positive/negative signs vs friends $p = 0.040$ (positive had fewer friends than negative, the opposite of what positive/extraverted would predict but in agreement with negative/introverted spending more time online and therefore making more online friends to compensate for their lack of offline friends). The most significant result for water/non-water signs was vs visible friends $p = 0.060$ (direction not stated).

The author concludes that the results provide weak evidence for sun signs and for positive vs negative signs, but not for water vs non-water signs (as if the difference between $p = 0.04$ and $p = 0.06$ was somehow decisive):

We believe that although Astrology [sic] can be used to determine some character traits in human beings, the impact of an individual's sun sign on their personality cannot be observed by simply analyzing the actions and behaviours shown through their Facebook account. [Nevertheless] proving other astrology theories [via Facebook usage] is worthy of further investigation ($p.82$).

Comment 2 The author does not correct the p values for the number of tests (here $12 \times 19 + 2 \times 19 + 2 \times 19 = 266$), which would immediately cancel the reported significance (ie to be genuinely significant at a p level of 0.05 would require the observed p level to be significant at roughly $p = 0.05/266 = 0.00019$), because correction:

is still a subject of considerable debate ($p.79$, citing two references dated 1990 and 2002).

The objections raised in the cited references are: (1) Correction assumes all tests support the null hypothesis, which hypothesis is never true. (2) Correction reduces the probability of a Type I error (falsely concluding an effect exists) but also increases the probability of a Type II error (falsely concluding an effect does not exist). (3) The number of tests to correct for may not be clear, for example should it include tests that were possible but not actually made? (The last may seem curious but the author may have unconsciously, or by luck, avoided results that would have been non-significant.)

But none of these objections seem sufficient to justify non-correction when 266 tests are being made, especially as powerful alternatives to simple correction exist, see 7.7.2016.3 reason 3. The second reference (RJ Feise, *BMC Medical Research Methodology* 2(1), 8-11, 2002) is much cited by researchers generally. In it Feise suggests an alternative approach:

Conscientious readers of research should consider whether a given study needs to be statistically analyzed at all. We must be careful to focus not only upon statistical significance (adjusted or not), but also upon the quality of the research within the study and the magnitude of improvement. **Effect size and the quality of the research are as important as significance testing!** Does it really matter whether there is a statistical difference between two treatments if the difference is not clinically worthwhile or if the research is marred by bias? ($p.9$, emphasis added).

Feise follows this with advice for reaching a reasonable conclusion regardless of whether any corrections have been made to p values:

(1) Evaluate the quality of the of the study and the amplitude (effect size) of the finding before interpreting statistical significance. (2) Regard all findings as tentative until they are corroborated [ie replicated]. A single study is most often not conclusive, no matter how statistically significant its findings. Each test should be considered in the context of all the data [ie all the information from relevant studies] before reaching conclusions ($p.10$).

But Ming-Shian Wu, like most of the test authors in the present book, does not follow this advice, and (together with the editor and referees of *Correlation*) seems unaware of what the studies are collectively saying, especially the controlled Facebook study with $N=34,000$ summarised in 7.1.2015.1, which alone renders his study somewhat futile.

7.1.2018.2 Signs vs extraversion using Gauquelin professionals

Kyösti Tarvainen. On the astrological polarity in extravert and introvert groups. *Correlation* 32(1), 33-46, 2018. Guest editor Courtney Roberts sees it as a "new milestone ... lowers the threshold of proof ... the entire field gains ground".

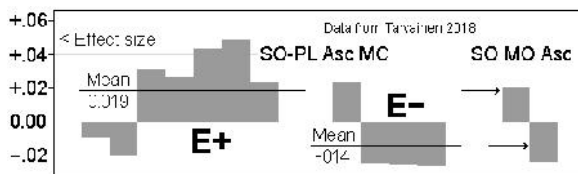
Because all positive results of tests of sign polarity vs extraversion have been explained by self-attribution (knowledge of astrology shifts our responses to a personality test in the direction consistent with astrology), Tarvainen suggests avoiding personality tests altogether by using professional groups expected to be more extraverted or introverted than average. In this case the Gauquelin professional groups, which when assessed via published articles on vocational guidance for extraverts and introverts gave the following outcomes with sample sizes:

Extraversion – actors 1407, journalists 673, liberation fighters 616, musicians 1248, pioneer aviators 392, politicians 1002, and sports champions 2144, total 7482, weighted median birth year 1896 or 1884 excluding sports champions.

Introversion – painters 1472, physicians 2552, scientists 1094, and writers 1352, total 6470, weighted year 1871.

Using factor weights of 5 (SO, MO, Asc, MC), 3 (ME, VE, MA), 2 (JU, SA), and 1 (UR, NE, PL), Tarvainen counted the frequency by polarity in each group vs the mean frequency in 1000 control groups each obtained by shuffling the birth data. The *p* value of the difference for all groups combined was 0.02 one-tailed, or 0.003 for just SO MO Asc. Tarvainen sees this as providing strong support for a link between astrological signs and extraversion.

Comment But it doesn't because he considers only *p* values, and his sample sizes are far too small to reliably measure effect sizes that are tiny even by Gauquelin standards (see 6.4.7):



Effect size *r*'s for extraversion vs tropical signs containing the indicated weighted factors for each Gauquelin group in the order listed above. Not all are consistent. Contrary to the *p* indications, effect sizes for SO MO Asc are basically no different from the means, which are useless anyway – equivalent to 51.0% hits instead of 50% expected by chance.

Furthermore the use of Gauquelin's professionals is unsafe because the effect of knowledge of astrology is obviously better addressed via subjects known to be ignorant of astrology than via subjects not known to be ignorant of astrology. Indeed, if only 1 in 200 parents misreported their child's birth data to make the heavens more in line with their wishes (see 6.10.1), it would be enough to produce such tiny effect sizes. The above result is indeed a milestone but in the wrong direction. The same self-attribution explains why Tarvainen found tropical signs to be more (uselessly) significant than signs whose start point had been shifted from 0° Aries.

In a study of self-attribution (*Personality and Individual Differences* 35, 1783-1789, 2003) German anomalist Edgar Wunder cites 8 tests of subjects known to be ignorant of astrology, which with other studies of signs vs personality led him to conclude that "a real connection between personality and astrological sun-signs can be excluded". He then tested 1700 German volunteers to see if their belief in astrology varied with sun sign. Here *belief* in astrology (a horoscope tells a lot about a person) is not the same as *knowledge* (I know my ascendant):

The mean belief scores were almost exactly the same for all signs (*p* of difference = 0.57) even when only subjects showing maximum knowledge of astrology were tested (*p* also = 0.57). This contradicted an earlier finding by Margaret Hamilton (*Personality and Individual Differences* 31, 903-914, 2001) with US psychology students (N=92) that subjects born under positive signs showed a stronger belief in astrology than subjects born under negative signs, a difference possibly due to her using students rather than volunteers and her small sample size.

Wunder concludes that belief in the accuracy of sun signs is due to a combination of what is technically known as *fundamental attribution error* (attributing our behaviour to our situation but your behaviour to your personality), *confirmation bias* (seek confirming evidence ignore disconfirming evidence), and *selective recall* (remember hits forget misses). Unfortunately much seems applicable to Tarvainen's study (which does not mention Wunder's study).

7.2 APPLICATION ISSUES Not signs (see 7.1) nor progressions (see 7.4).

7.2.1910.1 The value of astrology to the world

Alan Leo, *Modern Astrology* (New Series), 1911, 8, 140-151. Around 1910, at a symposium of Alan Leo's Astrological Society in London, members read papers on the value of astrology with a "wonderful diversity in points of view".

The symposium began with this introduction by the editor Alan Leo:

Some time since, at a meeting of the Astrological Society, the above subject [The value of astrology to the world] was taken for discussion and papers were read or speeches made expressing the opinions of various members present. To the listener, the most striking feature of this evening's discussion was the wonderful diversity in point of view exhibited by the speakers, and the difference of the methods by which they sought to show the utility of Astrology. This is illustrated in the following more or less haphazard selection from the papers which were read. The heading given to each paper is merely intended to be indicative of what seems the point of view of its author, who must not be supposed to have laid claim to the title ... for which the present writer is solely accountable.

The papers averaged nearly 600 words each. The headings given by Leo are in boldface:

For the **Recluse** astrology enables people to make the best use of time, thus advancing their own development and that of society. This ambition is universal and is found in all men.

For the **Philosopher** astrology shows the tides of fate just as astronomy shows the tides of oceans. As for a ship, to miss a tide is to miss an opportunity on which our material welfare so intimately depends. Astrology is our compass in life.

For the **Student** everyone is born into this world for a certain purpose, into which astrology provides insight beyond the ordinary senses, in the same way as the gauges on a steam engine provides insight into its remote workings. Faults are thus easily discovered and corrected.

For the **Scientist** astrology provides a personal equation, a prism for separating the components of divine wisdom so ably expounded by our esteemed President, a radiograph of our strengths and liabilities, a clue to following that portentous precept "Know thyself."

For the **Palmist** astrology seemed at first like fortune telling. Then its true nature became clear. It helps us to understand ourselves and deal with difficulties in life perhaps more clearly than does palmistry, where we may miss small faint lines that make a lot of difference.

For the **Wayfarer** astrology is about spiritual well-being. It points to a higher life and liberates us from crass materialism. Its value will be determined by the kind of people who use it. Its study fosters tolerance and compassion, which are things the world needs and might secure if kings and rulers used astrology as a national guide.

For the **Practical Man** it is too early to judge the value of astrology. It needs time to prove itself just as radium did, so it must be more widely practised to make its value more evident. Organisations such as the Astrological Society are ideal for this.

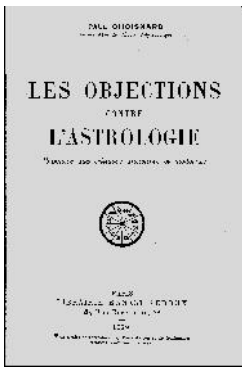
For the **Onlooker** the value of astrology to the world is more than the collective gain of individuals. It provides a universal standard, a Metric System for anthropology and philosophy. Just as we take our *Time* from the stars, we can also take our *Tune*.

Leo concludes "Surely, it may be argued, a study which arouses the zealous espousal of those whose outlook on life is so various, must merit the attention of all thoughtful people?"

Comment By today's standards the papers are wordy (wordiness being the style of the day) and devoid of the scientific insights that came three-quarters of a century later. Nevertheless, compared to modern views, they show breadth, humanity, and freshness, possibly because astrology in those days was less embattled by scientific attacks. One might even ask if modern astrologers are worthy heirs of Alan Leo. On the other hand, these eight views can also be seen as a testimony to the power of hidden persuaders (artifacts in reasoning of which we are generally unaware, see 9.7), which in those days were unknown and unsuspected.

7.2.1929.1 Cicero was wrong about time twins

Paul Choïnard, *Les Objections contre L'Astrologie: Réponses aux critiques anciennes et modernes*, Leroux, Paris 1929. Choïnard (1867-1930) wrote more than 30 books and was effectively the founder of French scientific astrology. This particular book, finished shortly before his death, attacks criticisms of astrology ranging from fatalism and lack of mechanism to precession. This summary is of Chapter 1 (pages 37-49) which attacks Cicero's criticism of time twins.



Choïnard begins by citing Cicero's argument in *De Divinatione* (see 8.9.4.7) involving differences between time twins:

Those who are born at the same moment live differently, have different inclinations, and perish by different accidents. Is this argument not strong enough [asks Cicero] to convince us that the moment of birth has nothing to do with the stars? (p.37).

Choïnard notes that this argument has been repeated many times over the centuries, but always ignoring the crucial issue, which is whether individuals born close together in time differ less than those who:

are born at distant times under different skies, while taking into account the heredity, the milieu, and all the other factors contributing to the character and destiny of man (p.38).

In other words, astrology is only one factor among many. Pairs of individuals born under exactly the same sky are extremely rare ("I personally have never found such a case" p.43), but pairs born under similar skies do show strange similarities. For example King George III and Samuel Hemmings, and his own time twin Mr P born in Grenoble five hours earlier who had married at the same age, had studied astrology for forty years and published a book on it, and whose father was in the same profession as his own father (p.46).

His own opinion, based on experience, was that persons born close together in time would show differences due to differences in heredity and environment. Nevertheless many other influences would be the same on both sides. Serious astrologers have always observed:

that individuals born in the same quarter hour and in the same country ... do exhibit non-identical but similar characteristics at different levels, as was the case for King George III and Samuel Hemmings (p.47).

Also the non-identity of people with identical horoscopes does not explain the scientific findings given in eight of his other books – that certain categories of people have more of a certain aspect in their charts than others.

Comment Ironically Choïnard's response to Cicero (that time twins have never been properly examined) fails for the same reason. Choïnard simply did not have enough examples for a convincing examination (time twins are very common but are hard to find, see 8.7.6, and the case of King George III and Samuel Hemmings is most likely not true, see 7.2.1994.3), so he had to rely on the usual opinions padded out to tedious length, here 4000 words. His last point about certain people having certain aspects was disconfirmed when Gauquelin showed it was due to small samples and lack of controls, see 6.3.3, as was Choïnard's crucial issue when time twins were properly examined – individuals born close together in time under the same sky were not more alike than those born further apart, see 8.7.7 ff.

7.2.1931.1 Famous scientists tell why astrology is a fake



Jesse F Gelders, *Popular Science* 119(3), 12-15, 112-113, 1931. Gelders (1899-1964) was a graduate of the Oklahoma school of journalism, one of the oldest in the world, and a lead writer for *Popular Science*, a monthly magazine (now every two months) founded in 1872 to popularise scientific knowledge. It has won over 58 awards for journalistic excellence.

Attacks on astrological claims have been as perennial as the claims themselves. From Cicero, St Augustine, Pico and Pope Sixtus V through to 186 scientists in 1975, they have had almost no effect. This example from September 1931 is of interest for its period (shortly before the death of Evangeline Adams) and its brief but interesting survey of objections (precession for once was not top of the list), backed by opinions from several leading astronomers who had investigated it, and actual encounters with astrologers (none are named) and their products.

Gelders' article was prompted by the popularity of radio astrologers, whose activity "has given

new impetus to the oldest brand of pseudoscientific hokum known to man – astrology”. Their appearance on radio was seen as bait for mail-order clients “mainly interested in three things – love, money, and health, in the order named”. Especially at risk were the sick who “often take their advice on questions that should be decided only by competent physicians (pp. 13-14). But as a responsible journalist Gelders still wondered if the claims could be true:



To obtain authoritative answers to these questions for readers ... I called upon a group of recognized scientists whose life work is to study the stars and penetrate the mysteries of the universe ... These men of science are unanimous in declaring that there is no scientific basis whatever for the deductions and predictions made by the astrologers (p.14).

The scientists (pictured) gave their opinions. Frank Schlesinger, professor of astronomy at Yale, said “If there were any basis for astrology, astronomers would be very glad to know of it. Some of us have gone into it. I have, and I have come to the conclusion that here is no basis for its claims. ... It so happens that I know the exact minute of my son’s birth ... the horoscope I received ... was no more accurate than if a cat had cast it”. Daniel Hering, professor emeritus of physics at New York University was another who had made a personal investigation. He found it “inconsistent and absurd”. Dr Walter Franklin Price, research officer of the Boston Society of Psychic Research, persuaded a friend to send timed birth data plus the required fee to six different astrologers, asking “shall I marry this year?”. The replies were all different and all wrong – “not one astrologer learned from the stars that the person was already married”.

Gelders also tested horoscopes on 63 psychology students at New York University, and found that any success depended on their vague wording and on saying opposite things in different places. He quotes one radio astrologer as saying “Astrology is an exact science. We can tell with precision exactly what you can expect”. But this is a gross and dangerous falsehood. Astrology is *not* an exact science. It is not a science at all. And an astrologer can no more foretell the future than you or I. As for “No thinking person doubts that the rise and fall of the tides is due to the influence of the sun and moon”, he suggests taking a glass of water into “the bright, silver moonlight, and see how much of a tide is raised in it” (p.112).

Gelders’ objections to astrology includes no known forces (even if there were, why doesn’t the child change as the forces change?); gravitational forces are too weak (and the same for reflected sunlight), planets could not work by shutting off radiations from the sky (they “have less of a chance of shutting off radiations than gnats, flying in front of a man’s face, have of shutting off the sunlight”); based on gods that “nobody believes in any more”; precession (“the constellation reserved for the feet is now in the sign that rules the head”); discovery of new planets not predicted by astrologers; and if astrology worked why don’t astrologers rule the world? He concludes “Pretending to base personal predictions on the stars does not give the practice a scientific basis. It is merely a trick which lends the world’s oldest come-on game the kind of glamour that ... still is required by good business and showmanship” (p.113).

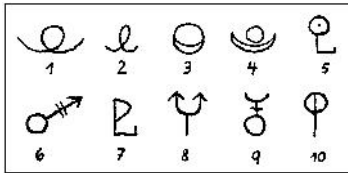
Comment In 1931 about 1 in every 200 adult Americans subscribed to *Popular Science*, more than twice the 1 in 500 that subscribe to *Scientific American* today (although digital readership is about ten times higher). In its next three issues a total of six readers’ comments appeared in its lively letters section. Two supported Gelders’ objections (“convincing”), but four dismissed them (“bunk, proves nothing”) because they focussed on fakes and ignored the real thing, which did “great injustice to hundreds of honest, educated, capable, scientific men and women” (November 1931:13). By today’s standards the response was not impressive, but

every issue was a thick one of typically 120 pages and 12 leading articles, so there was much competition for attention. And of course astrology was not as fashionable as it is today.

7.2.1935.1 Observations on the new planet Pluto

Fritz Brunhübner, *Der neue Planet Pluto: Beobachtungen und Erfahrungen* 1935. Pluto was discovered in January 1930 by Clyde Tombaugh at the Lowell Observatory in Arizona. It was named after the Greek God of the underworld. In 1932 Fritz Brunhübner was the first astrologer to present interpretations of Pluto after its discovery, which were subsequently expanded into this book. In 2006 the International Astronomical Union demoted Pluto and reclassified it as a dwarf planet, but in the face of controversy from astronomers and others they re-reclassified it as a Plutoid.

My many years of investigations into the effect of Pluto in birth charts suggest that it indicates largish stature, bushy eyebrows, robust, durable, great vitality, sensuous expression. Mentally serious, creative, brooding, dark, demanding, jealous, unforgiving but capable of great devotion. Is especially suited to the natural sciences. Often a double life is led. When afflicted it is violent and vindictive. But it is generally hard to describe because of its great resilience.



The various symbols proposed for Pluto and known to me are shown in the diagram. (1) and (2) L for Lowell enclosed in a semicircle. (3) and (4) after the Egyptian Isis. (5) Sun with a dangling L. (6) Higher octave of Mars. (7) PL for Percival Lowell. (8)-(10) Turning points. The symbols most commonly used today are variations of (7) and, in Europe, (9).

My image as "Pluto specialist" I attribute to Pluto's favourable position in my chart (conjunct Venus and Neptune in Gemini in 9th). With this constellation, I could intensively empathise with Pluto vibrations. One day I had a vision. I saw clearly that the Egyptian pyramids belong to Pluto. I could and must get more than I can publish now.

Comment Modern keywords emphasise power and transformation, all based on Pluto's connection with the underworld, but only the first is prominent in the above work. The three most common modern keywords could not be confirmed by direct tests, see 7.6.1987.2-3.

7.2.1947.1 Notes on planetary influences – but by whom?

J Gerson-Lacroix. *Notes d'expérience sur l'influence des planètes* Nice 1947. J Gerson-Lacroix was one of several pen names used by Jacques Reverchon (1909-1985) when writing about astrology, reserving his own name for more scientific work. The two could exist side by side, as in a 1957 issue of *Les Cahiers Astrologiques* that had articles from both. Later Reverchon was an associate of the Gauquelins and a critic of André Barbault (8.8.3). His book was a remarkable attempt to derive the intensity of planets empirically by the inspection of thousands of charts. But – and this is the intriguing bit – Gerson-Lacroix's results were presented later in New York by an apparently different person.



Gerson-Lacroix sets out to avoid fantasy by presenting "observations made during twenty years of almost daily experiments with several thousand horoscopes" (p.5). He looks at traditionally-accepted factors (planets, signs, houses, aspects) in the lives of people who are naturally "distinguished from the mediocre" by aptitude, personality or behaviour, an approach that he feels is "unlikely to raise any serious objections" (p.7).

But he says nothing about his charts or sources or approach. He devotes a chapter to each of the ten planets, focusing on what makes it strong, weak, or indifferent, and on its basic nature, which often disagrees with tradition. Thus traditionally sensitive and protective lunar subjects are egotistical, unemotional, vindictive, and "rarely dreamers" (p.11). His final chapter *Practical Conclusions* gives these brief general principles that differ from those found in standard astrology textbooks:

Any planet is strong in Aquarius and especially Capricorn, in houses 1 and 2 (and perhaps 3), and when it is moving faster than it did 60 or 120 degrees earlier. **Any planet is weak** in Leo and especially Cancer, in house 8 (and less markedly 6 and 7), and in square with another planet especially if that planet is faster moving (p.116).

His final chapter also focuses on much the same professions as Gauquelin focused on a few years later, but Gerson-Lacroix's findings are rather different:

Men of action – must have prominent influences from Jupiter, the Moon, Mars, and sometimes the Sun and Neptune. **Intellectuals** – Saturn or Pluto, frequently with Mars, Mercury and even the Moon. **Artists** – Venus, Uranus

and Jupiter. ... but you must be flexible and not dogmatic, because absolute rules do not exist in astrology (p.117).

Comment In 1981 Canadian researcher Axel Harvey was summarising Gerson-Lacroix's findings (personal communication 1981) and noticed that they were very similar to those attributed to Raoul E Hankar and summarised in *Recent Advances* 1977:218-221. Here Hankar was described as a French ballistics officer in the 1914-1918 war who during the next thirty years refined his observations against 5000 timed charts of public figures and derived a system empirically for assessing planetary intensity. Despite the Gerson-Lacroix book his results were said to be unpublished but were summarised in *Recent Advances* with the help of US astrologers

	DOMINANT	VERY POTENT	POTENT	DEBILITANT	DEPRESSANT
♂	♈	♉, iii	♊	♋ vi, xii	♌
♂	♍		♎ xi, ii	♏ i, ii	♐
♀	♈	♉	♊ xii	♋ x	♌
♂	♈		♊ ii	♋ iii, viii	♌
♂	♈	♉	♊ x, iii	♋ x, viii	♌ vi
♂	♈	♉	♊ ii	♋ xii	♌ vi
♂	♈	♉	♊ x, iii	♋ x, viii	♌ x, xii
♂	♈	♉	♊ x, iii	♋ x, viii	♌ x, xii
♂	♈	♉	♊ x, iii	♋ x, viii	♌ x, xii
♂	♈	♉	♊ x, iii	♋ x, viii	♌ x, xii

Al H Morrison and Charles A Jayne from their notes made during Hankar's 1957 lecture series in New York. In 1958 Morrison taught a six-session course on the Hankar system, and in 1972 he featured a modified part that he called the Hankar Crystal (a MO-ME-UR-Ascendant configuration) in *The Astrological Review*, Spring/Summer 1972: 24-27. He felt it was the best way to judge extraversion.

Morrison's hand-drawn table of Hankar's intensity assessment for planets in tropical signs and Placidus houses. The column headings from left are Dominant (dominates entire chart), Very Potent, Potent (effects are obvious), Debilitant (not casually visible), Depressant (apparently absent).

Like Gerson-Lacroix, Hankar was concerned with external visible things, not with internal hidden things. He too gave no details of his charts or sources or approach, and he too

assessed a planet's intensity by sign and house positions that differed from tradition, albeit at four or five levels (see above) rather than Gerson-Lacroix's three (strong, weak, indifferent), but which were strikingly in agreement as shown by this comparison for SO through SA:

	----- Hankar from Morrison's table -----					Gerson-Lacroix from Axel Harvey		
Planet	In these Dominant	signs or V potent	houses Potent	its external Debilitant	impact is Depressant	Strong	Weak	
Sun	**	TA 1	2	SG 12	LE 6	TA 1 2	LE 11	12
Moon	CP	4	AQ 3 10	VI LI 1 8	LE 6	CP 4	LE 7	
Mercury	**	LI 4	TA 9	CN		LI 4	CN	
Venus	PI	2	LE 12	SG 10	5	PI 2	SG 10	
Mars	TA GE		CP 6 11	CN 1 2	SC	TA GE 6 9	SC 1	
Jupiter	PI	2 3	LI	LE 6 12		PI 2	LE 6 9	
Saturn	VI CP		SC 2	TA PI 3 8		CP 2	TA PI 3 8	

** Planet is in a Hankar group whose planets are never dominant, see below.

Provocatively the only planets that could dominate a chart were those identified later by Gauquelin (MO, VE, MA, JU, SA). And if a chart included a dominant planet, that alone was sufficient to determine the chart's external impact.

Axel Harvey concluded that any differences are negligible, and that one author must have copied from the other. Which is supported by their common dependence on signs and houses – factors now known to be too invalid to support the idea that two huge studies, both lacking detail about charts, sources, and approach, could end up in such close agreement. Most likely



Hankar was another pen name for Reverchon (pictured), who in 1957 would have been 48 years old. This is supported by his association with the Gauquelins and the 1955 finding that only the visible planets had an effect, albeit not confirmed for MO and VE until some years after 1957 but early enough to prompt division into the above two groups.

Today this huge and interesting labour by Gerson-Lacroix/Hankar is rarely mentioned, which is probably for the best due to its gross lack of detail. Neither Hankar nor Gerson-Lacroix are mentioned by de Herbais de Thun in his 455-page *Encyclopédie du mouvement astrologique de langue française au XX^{me} Siècle*, probably because it was published too early in 1944.

7.2.1955.1 French medical astrology should be an illegal practice

Gérard Party, *L'exercice illegal de la médecine*. Thesis, Paris Faculty of Medicine 1955, 39 pages.

The author surveyed current writings and practices in French medical astrology but no tests were made. His conclusions (p.39) were: (1) Astrology does not offer a method of diagnosis or of therapeutic certainty. (2) The use of astrology in medicine should be regarded as an illegal practice. (3) It should be monitored with less leniency. (4) Warnings are needed in schools, on the radio, in the newspapers, and by the Ministry of National Education.

7.2.1956.1 How did you come to astrology?

Uranie [French quarterly review of astrology] 1, 38-40, 1956.

Today the answer for most people is "after reading a sun sign book". But what happened before sun sign books started to become popular in the 1930s? This short article puts the question to five prominent French-speaking astrologers who became interested in the 1920s. For most of them the answer is "after reading a popular astrology book":

Henri Gouchon became interested around 1927 after reading Alan Leo's small books that had been translated into French such as *What is a Horoscope?* In due course Gouchon became a prolific author of tables and textbooks including the celebrated *Dictionnaire Astrologique* in three volumes, later one volume, which (unusually for a dictionary) contained over a dozen statistical tables such as sign distributions and degree counts (see 7.2.1997.1).

Gustave-Lambert Brahy in the early 1920s after having his chart read. The astrology books he had seen were confused and contradictory. In 1926 he founded *L'Institut astrologique de Belgique* and in 1930 the journal *Demain*.

Edouard Symours in 1928 after reading Choisnard's *Preuves et Bases d'Astrologie*. In due course Symours founded the *Centre International d'Astrologie*.

Alexandre Volguine in 1917 after a chance visit to a Theosophical Library when he was 14. Then "when opportunity presented itself, I started without hesitation on the study and verification of astrology, abandoning everything else". Originally from Russia, in 1938 he was the founder and editor of the quarterly *Les Cahiers Astrologiques*.

Léon Lasson in 1934 after reading Choisnard. Since then he has spent an average of 2000-3000 hours a year [about 7 hours a day including weekends] on verifying astrology, with some notable outcomes see 6.4.2.

7.2.1957.1 The prenatal epoch (nine studies 1957–2009)

Jean Hièroz, *Les Cahiers Astrologiques* 68, 139-144, 1957. The prenatal epoch (the Trutine of Hermes) postulates an exact interchange between the Moon's position at epoch and the Ascendant or Descendant at birth, and vice versa. There are several methods and no agreement on what the epoch is (it is usually seen as the moment of conception).

At a 1937 conference it was said that for every 50 minutes of the day there were 27 minutes where birth (according to the epoch) would not be possible, which is contradicted by birth times in my archive of 14h30, 14h40, and 14h45. To test the matter further, I asked readers to send me relevant data, and received nine cases timed to the minute. The results were:

Method	Trutine minus Actual			
	Range	Average		
Junctin	-26 to +10	-6	)	In minutes of time
Armor	-30 to +22	-9	)	Average difference
Bailey-Persigout	-28 to +13	-11	)	ignoring direction
Ptolemy	-25 to +10	-6	)	is 14 min ± 8 N=36

My conclusion is "astrologers who use the Trutine are wasting their time. I regret this a little for myself, a little for my readers, and much for Mr Bailey who spent years studying it, but that is how it is" (p.144). Bailey (1876-1959) was the author of *The Prenatal Epoch* 1916.

Comment The traditional duration of pregnancy is ten lunar months or 270 days from the last menstrual period. Modern studies of thousands of births put the average at 278 days, standard deviation 15, with more pregnancies 3 weeks early than 3 weeks late. But it depends on the study. For example Jukic et al (*Human Reproduction* 28(10), 2848-2855, 2013 found an average of 267 days, standard deviation 10, range ±35 days, using biochemical tests to accurately time events. In any case the wide scatter denies the application of any average to individual cases.

**Rectification
of the
Birth Time**

by
Gustav Schwicker

WITH A
PREFACE BY HARRY GOLDSTERN
A NEW EDITION
REVISED BY S. F. HARRIS

Prediction III

Synopsis:
The Accidental - Lamas
The Presidential Election
Billed Stars

Will It Go Main

The greatest care must be taken concerning a rectified Radix and Conception Horoscope, small orbs of the directions, and the true symbolism of Luminaries, planets, Angles and House Cusps (*Prediction III* 1986:51).

The fundamental problem in astrology (the real starting point) has been solved [by me] in theory and practice by RECTIFICATION [his capitals], but it lacks a sufficient number of talented and experienced astrologers (p.93) ... For such a development of astrology to occur, however, we need more people who have a scientific mind, do not regard astrology as a belief system, and show perseverance and a realistic approach to the matter (p.95).

	Kennedy born 1932, 6 deaths							Peron born 1895, 5 deaths						
Frequency at orb =	0'	1'	2'	3'	4'	5'	Mean	0'	1'	2'	3'	4'	5'	Mean
N directed to N	3	4	4	1	4	0	2.3	0	1	3	2	4	2	1.7
N directed to E	2	3	2	2	1	0	1.4	1	0	1	2	0	0	0.6
E directed to N	0	0	0	1	2	2	0.9	2	2	2	1	0	1	1.1
E directed to E	2	0	1	2	3	3	1.9	4	4	3	0	3	0	2.3
Total	7	7	7	6	10	5	7.0	7	7	9	5	7	3	6.3

According to chance there should be little variation, since each minute of orb is no different

from any other minute. But according to topocentric's "dream of zero-orb astrology" there should be a peak at zero orb. But no peak is visible. So what frequencies are to be expected? In directions the motion is uniform, and the expected number of contacts between N points in chart A and N points in chart B is given in *Recent Advances* 1977:293 as:

$$\text{expected number of contacts} = (N^2 - M^2) \times A \times 2 \times D / 360$$

where M = number of points between which aspects are ignored (here house cusps), A = number of aspects, and D = orb in degrees. Since there are 2 techniques x 2 directions = 4 comparisons for each death, the expected number for each death is 4 x the above. Inspection of Marr's lists show that the theoretical maximum values of N, M, A are not attained, possibly to save listing space. His actual values suggest an expectancy of 2'-3' for each entry in his table vs the observed mean of 1,75'. Again, there is no support for anything clearly beyond chance.

Back at the pre-natal epoch, the idea cannot possibly be valid. Identical twins share the same epoch, so (absurdly) their birth charts must be identical even though their birth times are different. In polar regions some degrees neither rise nor set, so no interchange is possible (and no births can occur) when the Moon is in those degrees. Thus births in the Norwegian city of Tromsø at 69N42 are "impossible" on 91 days a year, but in 1951 (population then 11,000) there were 64 births on those days. In response UK astrologer Ronald Davison comments:

Such objections, I feel, are too clever by half! What such objections do bring into focus is the fact that the set of rules ... need to be modified (*Astrology* 40(3), 70, 1966). [ie he doesn't want to admit that the rules might be useless]

Nevertheless direct tests have been made. In 1953 UK astrologer Margaret Hone altered by five minutes the times of ten births (all full-term, all normal, all timed to the minute) which seven astrologers rectified by the prenatal epoch (*Astrology* 27(2), 48-50, 1953). The results showed that rectification increased the error in more than 2 out of 3 cases. Results equally as accurate could have been obtained by choosing any time within 20 minutes of the time given. Epoch Moon and Ascendant within 3° of the 28 lunar mansion cuspal degrees counted from 0° Aries are said to indicate the native's sex. But for 70 UK and 70 Canadian exactly timed births, many timed by stopwatch, the predicted sex was correct in 34 and 36 cases, or exactly chance. Several hundred more cases gave the same result (Murphy, *Astrology* 22(2), 62-64, 1948). In his 1990 book *Astrologers, Kings, Politicians and Others* Alexander Marr gives his rectified times for six British monarchs from Queen Victoria onwards plus Prince Charles, each exact to the *second* (pp.96-126). The average difference from the recorded times (he does not give the times but for British monarchs the times can hardly be in doubt) is 13 *minutes*. Australian astrologer Doris Greaves made three little-known but quite remarkable experiments:

I have studied astrology for forty-three years and have borne three children to try to prove the pre-natal epoch theory. This experience has made me totally opposed to rectifying a chart by this method (*CAO Times* 4(4), 7, 1980).

In 1993 the Finnish astrologer Kyösti Tarvainen computerised the epoch rules and tested them against three sets of charts: 85 timed to the minute, the same 85 with times generated at random within 24 hours, and 460 timed to the nearest 5 minutes. For each set the average rectification error was 18 minutes, whereas the average geographical error due to assuming that conception (whose location was unknown) occurred up to 250 km from the birth place was only 1 minute, so "this rectification method seems not valid" (*APP* 9(1), 26-28, 1993). When the same method was applied to a set of 1440 control births for every minute of time during 6 May 1987 in Helsinki, it gave 28 (not 1440) rectified birth times, implying that birth could not occur at other times, which "is in contradiction with the biological reality" (p.28).

Bailey's complicated instructions (*The Prenatal Epoch* 1916) have been condensed into simpler tables by UK astrologer Michael Wackford (*Correlation* 27(1), 27-38, 2009), who cautions:

Those who encounter Bailey's PNE within astrological software are advised that some programs will not always produce epochs that accord with his other rules (p.29). ... while it [PNE] can often confirm an accepted birth time with stunning accuracy, there are also too many cases where it simply does not work. Many fixes have been tried – most notably, Baileys "Law of Sex" – but all have failed to make the thing behave as expected and required (p.34).

7.2.1959.1 A sobering message for palmists from Mark Twain

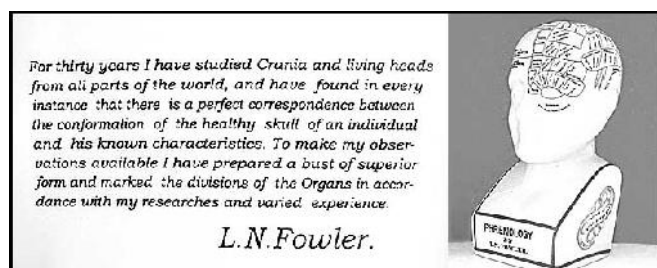
From *The Autobiography of Mark Twain*, Harper & Brothers, New York 1959:66-67. Equally sobering for astrologers. Twain (1835-1910), America's most famous literary icon, was a humorist who travelled widely to obtain material for his writings. His *Adventures of Huckleberry Finn* (1884) is held to be one of the masterpieces of American fiction.

In about 1896, when Twain was en route by ship to Europe, his right hand was photographed by William T Stead, an English newspaper editor and a pioneer of investigative journalism. Later in London Stead sent copies to twelve palmists asking for an estimate of character. He did not say whose hand it was. Estimates were duly received and Stead published six or seven of them in *Borderland*, a magazine he founded in 1893. Twain comments:

By those estimates, I found that my make-up was about like anybody else's; I did not seem to differ much from other people; certainly in no prominent and striking way – except in a single detail. In none of the estimates was the word humor mentioned – if my memory is not mistreating me – except in one; in that one the palmist said that the possessor of that hand was totally destitute of the sense of humor (p.66).

Nine years later the president of Twain's publishers made prints of Twain's left and right hands and sent them to "six professional palmists of distinguished reputation" in New York. He did not say whose hands they were and asked for an estimate of character. Twain comments:

History repeated itself. The word humor occurred only once in the six estimates and then it was accompanied by the definite remark that the possessor of the hands was destitute of the sense of humor (p.67).



Inscription on Fowler's phrenology bust.

Earlier in London he had received the same estimate when he visited (under a false name) the famous phrenologist Lorenzo Fowler, see 7.2.1998.6. Twain finally concludes:

Now then, I have Fowler's estimate; I have the estimates of Stead's six or seven palmists;

I have the estimates of [the New York] half-dozen; the evidence that I do not possess the sense of humor is overwhelming, satisfying, convincing, incontrovertible – and at last I believe it myself (p.67).

7.2.1970.1 Jonas's astrological birth control and sex selection

Dr M Vojta, *Cesk Gynekologie* 35, 38-40, 1970 (original is in Czech). The author is a working Czech gynecologist. His story is followed by our overview of Jonas's claims that are now known to be wrong and totally without foundation.

On Czech bookstands recently appeared a blue booklet by Dr E Jonas, *Girl or boy – a natural regulation of conception*. This publicity for an "astrobiological method of birth control and sex selection" has forced me to make comment. Despite several appeals from specialised Czech gynecological institutes, Dr Jonas did not provide documentation to support the credibility of his booklet. Yet it claims to provide families with optimal fertile days, the timing for viable children, and information to allow abortion and infertility calculations. An application form is attached to the booklet, you just fill it out and agree to pay 100 crowns [then about \$US14].

It says that, based on 1600 women, the reliability of this new biological phenomena is 98.5%. It says the relation between ovulation and procreation is governed by recurrent phases of the moon. However, in most women ovulation occurs about 15 days after the first day of menses, subject to fluctuations in the length of the cycle. And the Jonas "barren" period (to our best knowledge) often coincides with the period when the woman is most fruitful!

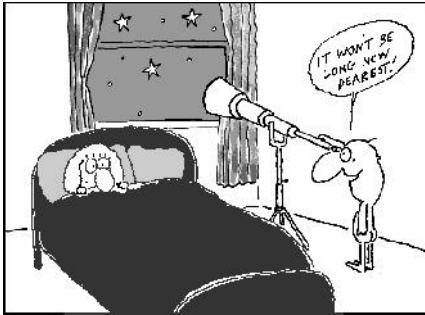
The fact that our Bratislava clinics have sterile females who cannot be helped by complex treatment is also relevant to the promise for infertile women to attain a viable child, because for such claims Dr Jonas offers no proof. Many infertility issues today do not have known treatments, without which it is illegal to promise pregnancy. In short, the claims of Dr Jonas (re fertile days and the more infertile days) are contrary to all scientifically based facts about human fertility.

Comment That was in 1970. Today we know from in vitro fertilisation studies that Jonas's claims are simply wrong. Nevertheless interest continues on the internet. So this comment is a long one. It includes material on Jonas abridged from *Recent Advances* 1977:477-482.

From studies said have been inspired by an ancient Assyrian-Babylonian aphorism and to have ultimately involved 30,000 cases, the Czechoslovakian psychiatrist Dr Eugen Jonas claimed that the human female has two fertility cycles. One is the normal ovulation cycle, the other is an astrological cycle which reaches a peak each time the transiting Sun and Moon reach the same angular relationship (± 15 degrees) as in the woman's natal chart. Jonas said that the latter is responsible for 70-85% of all pregnancies, and claimed that appropriate abstinence results in 98%-effective birth control. Jonas also claimed that the tropical sign position of the Moon at conception indicates the sex of a child (male for alternate signs beginning with Aries, otherwise female) irrespective of the cycle when the child was conceived. In two blind trials involving 100 cases each the sex accuracy was said to be 94% and 87%.

Above is from S Ostrander S and L Schroeder *Astrological Birth Control* 1972, and Jonas E ed, *Chapters of Scientific Astrology*, Bratislava 1969 (16 articles in Czech with English summaries on pp.83-92 but not very informative).

As reported in Dr Vojta's article, Jonas's work led to considerable controversy. Unfortunately further work was banned by the Communist government in 1970 and access to the original data was not possible. So the field became dominated by confusion and lack of evidence.



In the *Astrological Journal* 9(4), 2-3, 1967 the editor John Addey had misgivings about Jonas's ideas because they seemed contrary to established gynecological practice and to the observed male and female qualities of the signs. But to assist discussion the issue was supplemented by a 16-page booklet *The lunar cycle in relation to human conception and the sex of offspring* by London psychologist F Rubin, which was said to be based on interviews with Jonas and others. Jonas had stressed that his cycle is independent of the

menstrual cycle, but Rubin found many conflicting views (p.16). Readers complained about the booklet's vagueness and confusion. Then in 1980 Jaroslav Mixa, a personal observer of Jonas's work from the beginning, wrote that Rubin never spoke to Jonas but compiled his booklet from newspaper accounts (*CAO Times* 4(2), 40-46, 1980). Mixa adds that Jonas:

was a prima donna who covered all his plans with ostentatious and fantastic statements, always certain of himself although mild mannered and sensitive, unable to tolerate personal criticism. ... [He] did not behave as a man with normal critical faculties would, and I did then view him as having a megalomaniacal tendency [ie constantly seeking power and personal glory] (p.44).



Jonas never provided supporting data when asked (which was often), his published examples contained frequent mistakes, and his claims were contrary to experience. When invited to predict the sex of 73 cases for which the necessary data were known, he did not respond. For three months from October 1969 the newspaper *Pravda* ran weekly articles in its Saturday magazine in which Jonas and his ideas were severely criticised by doctors. In March 1970 Jonas's research and business offices were closed by the Czech government (p.43).

Dr Eugen Jonas born 6 Nov 1928 in Czechoslovakia. His death with no details and no date (but c.2017?) is reported by his website www.centrumjonas.com.

Relevant medical data

Jonas was led to his theory by the high failure-rate of the traditional rhythm method of birth control widely used in Czechoslovakia and Hungary. He felt that its unreliability could be explained only by an independent astrological fertility cycle. But explanations already existed:

(1) No woman is perfectly regular. (2) Ovulation generally occurs only once per cycle, usually around mid-cycle but it may occur at unusual times. (3) The safe period allows (hopefully) for possible variations in ovulation time but not for prolonged viability of sperm. Some put the limit at 24 hours but actual tests of 44 couples found significant action after five days in 20% of cases and even longer in 5% (Draper 1972:36). (4) Too much depends on the need for regular abstinence and attention to calendars and calculations, especially where standards of education are low.

In most cases there is only one ovulation per cycle, which is incompatible with the two fertility cycles proposed by Jonas. So Jonas suggested that the astrological ovulation was triggered by intercourse. Triggering effects have been clinically observed but they are rare (Guttmacher et al *Birth Control and Love* 1970). Hence his claim that they are responsible for 70-85% of all conceptions (or 3-4 times the number of normal conceptions) is not plausible.

The distribution of gestation periods has been widely studied and can be biased due to the induction of labour. Butler and Bonham (*Perinatal Mortality* 1963:116-117) analysed all births occurring during two weeks in the UK in 1958. Nearly 16,000 births were involved, of which probably 5-10% were induced. The results for normal live births were:

Weeks	%	Weeks	%	Weeks	%	Weeks	%	
<29	0.4	33	0.5	37	4.4	41	19.7	) Weeks are counted
30	0.2	34	0.6	38	9.7	42	8.9	) from the first
31	0.3	35	1.2	39	21.1	43	2.7	) day of the last
32	0.4	36	2.2	40	26.8	>44	0.9	) menstrual period

Their results show that about 4.0% of births occur on the expected day, and 3.8% on the day two days before or after the expected day. 40% of births occur within ± 5 days of the expected day, ie in a total range of 11 days. These figures may not apply to other countries and do not apply to induced births (which are generally designed around the expected date and should therefore cluster more closely).

Tests of Jonas's theory

The main obstacle to validation is the determination of the conception time. Even if the time of intercourse is known, conception may not occur until hours or days afterwards, hence until IVF there was no way of knowing the conception time (and hence the Moon position) to the required level of accuracy. So Jonas's theory was essentially based on unavailable data. Even if the theory was right, the same objections apply to its application. In rare cases, such as the rape of a virgin, the conjugal visit of a prisoner, or a soldier on 24-hour furlough, doubt is minimised provided that the time and date have been recorded and not left to memory.

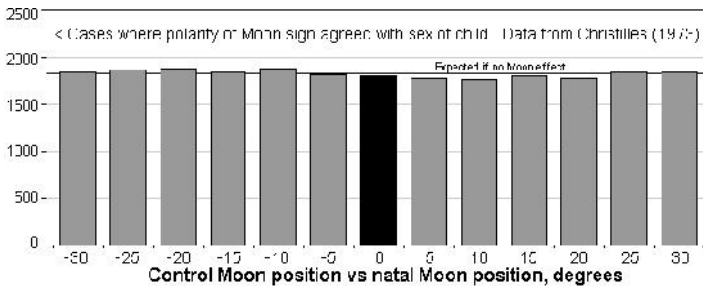
Some workers claim to have confirmed Jonas's findings. Thus Gustav Schwickert in Austria (*Rectification of the Birth Time* AFA 1954:83) says "the Moon-phase theories ... have already become repeated facts" and claims 100% success with sex-predetermination in 60 cases. No details are given. But most independent studies have not confirmed Jonas's findings, for example by HD Miller, *Lady I Have Your Number* 1972, 43 pp, by Doris Greaves in Australia, by Margaret Millard in the USA, and by a group from the *Kosmobiologischen Akademie Aalen* in Germany. Reinhold Ebertin had checked more than 50 charts sent to him by Jonas and found many were wrong (all above comments by personal communication). Nor has it been confirmed during IVF treatments by direct observations made available to Australian astrologers with access to early IVF work (*Federation of Australian Astrologers Journal* 3(3), 9, 1973).

In a 3-year study involving 500 women, Kimball and Kautz (unpublished work 1974-1977) found that the Jonas theory was mostly invalid. Detailed questionnaires were sent to over 5000 Northern Californian women who were either pregnant or had just given birth. Of the first 1000 returned, 400 were selected for normalcy of birth and for reliability in the estimated date of conception. In addition, from about 3000 women seeking therapeutic abortion, 100 were selected who had conceived from an isolated instance of intercourse at a known time and date. According to Jonas the Sun-Moon angle at the time of conception should show a strong correlation with the Sun-Moon angle in the woman's birth chart. But none was found. When the sex of the child in the 400 cases was compared with that predicted by the Moon

position at conception. the accuracy was not significantly better than chance (50%).

In the USA, Rosenblum and Jackson (*The Natural Birth Control Book* 2nd ed 1976:32-33) found that when Jonas's sex-predetermination theory was applied to goat breeding involving 3-4 births a year, the results for the first two years were 100% correct. But the results for the third year were 100% wrong.

If sex correlates with the Moon sign at conception then a large number of consecutive births analysed by sex should reveal a distinct modulation at the 6th harmonic of the Moon's zodiacal cycle. However each day only those 4% of births which occur on the expected day will generate a signal; the rest will generate noise. This means that to give an adequate signal/noise ratio many hundreds of births a day are needed (such rates occur only in the largest cities such as London or New York) and even then there is no guarantee that the effect could be detected. That said, no such studies have been reported. However:

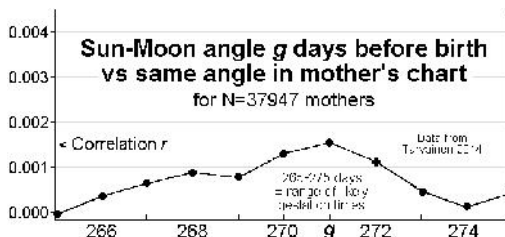


WE Christilles studied 3650 timed births during Jan-Mar 1950 in San Antonio TX. He compared sex with Moon polarity at birth when Moon position was artificially varied by computer over ± 30 degrees. By Jonas's theory the Moon sign at birth should be sufficiently linked to the Moon sign at conception to show a peak at 0° . No peak was discernible (*Astrological Review* [USA] 45(1), 36-37, 1973). Calculation took 45 min, data entry 22 hrs.

Convincing evidence against Jonas's sex-determination theory is provided by fraternal twins. Most fraternal twins are probably conceived within hours of each other. Hence for each conception pair the Moon is much more likely to be in the same sign than in different signs, so the theory predicts that same-sex fraternal twins should greatly outnumber opposite-sex fraternal twins. But their numbers are much the same (J Linney, *Multiple Births* 1983:100).

More recently Kyösti Tarvainen (*NCGR Research Journal* 4, 23-32, 2014) ran a test of Jonas's theory using data from Gauquelin's heredity experiments. If a birth occurs via the astrological cycle, the Sun-Moon angle ($\pm 15^\circ$) measured g days before a child's birth should be the same as that in the mother's natal chart, where g is the gestation period normally taken to average around 270 days. The actual period will depend on the individual mother, on whether the child is her first, and will be unknown. But it will normally fall between 265 and 275 days.

So for each value of g between 265 and 275 days, Tarvainen calculated the correlation r between the Sun-Moon angle (0° - 359°) g days before a child's birth and the Sun-Moon angle in the mother's natal chart for 37,947 mothers in the Gauquelin heredity data:



If Jonas's theory is correct, the observed correlation should be substantial. Thus if $275-265 = 10$ days is the maximum error in g (which corresponds to about $360^\circ \times 10/29.5 =$ about 120° in Sun-Moon angle), independent computer simulations in which the mean difference between Sun-Moon angles can vary by up to 120° should return a mean correlation of around 0.2. But the correlations observed by Tarvainen are much too small (around 0.001) to offer support for Jonas, which of course agrees with the evidence from IVF studies.

Although the above correlations are vanishingly small, the sample size is so large that they reach substantial significance – an example of p arising from noise as discussed in 7.7.2016.3. By the same token no particular meaning can be attached to the shape of the plot.

Jonas vs prenatal epoch Inspection of a list of ten birth times and intercourse times recorded by astrologers who planned their families by the prenatal epoch some 50 years before Jonas's theory shows that the sex of the child did not correspond to the Moon sign at

the time of intercourse in four cases (Shaw, unpublished work c.1930 bequeathed to the AA). In four cases the Moon was in $<10^\circ$ of a sign at the time of intercourse and was therefore probably in the same sign at the time of conception. The results were exactly chance:

Intercourse	Moon	Sex of child	
		observed	predicted
2300 24 Sep 1865	9 AR	male	male
2300 3 Jul 1915	7 AR	female	male
2310 26 Jun 1927	3 GE	male	male
2045 19 Mar 1928	2 PI	male	female

According to prenatal epoch theory there is an exact interchange between the Moon's position at conception and the Ascendant or Descendant at birth. According to Jonas's theory the Moon's sign at conception indicates sex. Hence according to both theories combined, males will have only positive signs rising and females will have only negative signs rising. No such effect is observed, hence at least one of the theories is wrong.

7.2.1970.2 Estimating the start of the astrology boom

Paul Colombet, *L'Astrologie* 11, 176-177, 1970.

Early in 1970 the total sales of *Zodiac*, the French language collection of twelve individual sun sign books by André Barbault and published by Le Seuil, reached one million copies. Aries led the total sales with 90,000 copies, followed by Scorpio and Aquarius with 86,000 copies. In last place were Sagittarius and Capricorn with 76,000. During the previous two years, Scorpio sold most (6137 in 1968 and 7853 in 1969) while Sagittarius sold least (5417 in 1968 and 7151 in 1969). Also a remarkable increase in yearly sales has taken place – 49,502 in 1967, 69,438 in 1968, 90,455 in 1969. On a smaller scale there was a similar increase in the sales of André Barbault's other two books published by Le Seuil: *De la psychanalyse à l'astrologie* sold 292 copies in 1967, 546 in 1968, and 606 in 1969, total sales to date 6000 copies; *Le traité pratique d'astrologie* sold 533 copies in 1966, 1085 in 1967, 1543 in 1968, and 1574 in 1969, total sales to date 13,000. So one may wonder if 1968 could be seen as a kind of birth year for interest in astrology. It seems that a similar increase occurred with the Dutch edition of the *Zodiac* collection, also a bestseller.

1968 also introduced, from several sources, the commercialization of electronic astrology. The *Astroflash* operation in France has now issued nearly half a million birth charts complete with interpretations, which helps to enhance popular astrology at a higher level. There is an equal division of demand between the two sexes. Nearly a third are 20-29 years old, and more than half are 17-39 years old. Few are 50+ years old and almost none are 60+ years old.

7.2.1972.1 True vs false *Astroflash* horoscopes

Michel Gauquelin and Jacques Sadoul, *Les Trois Faces de l'Astrologie* 1972:79-80.

Twenty educated persons were asked to rate two *Astroflash* computer horoscopes, one true and one false. Horoscope A (true) was for their actual date of birth. Horoscope B (false) was for a date chosen at random. The subjects had to pick the most accurate horoscope.

Result: 9 picked true as the most accurate, 11 picked false. The most common comment was "Both look like me".

To provide a comparison, another 20 educated persons were invited to give their opinion on the accuracy of their own *Astroflash* horoscope.

Result: 13 said it was accurate, 3 were undecided, 4 said it was not accurate.

The results are consistent with the work of psychologists. Whatever his background, a person tends to find hits in vagueness, see 9.9.6. So his testimony or "personal validation" cannot be taken as support for astrology. But this result does not condemn astrology, anymore than curing a patient by a placebo condemns medicine. For more on *Astroflash* see 6.4.6.

7.2.1972.2 The rise and rise of midpoints

Reinhold Ebertin, *The Combination of Stellar Influences*. 2nd English edition 1972. Midpoints were used in medieval times and probably earlier. In modern times they were little used until revived in Germany by Alfred Witte (1878-1941), who founded the Hamburg School. Witte (pronounced Vitt-uh) was a ballistics officer in the German Army in the 1914-1918 war. He derived his method by applying astrology to events on the battlefield. After testing various related groups of aspects he found that those based on repeated division of the circle by two were more effective than those based on repeated division by other numbers. So he adopted only 180, 90, 45, 22.5 ... aspects and introduced the 90° dial in which the four quadrants of the zodiacal circle are superimposed, making all multiple-of-90° aspects appear as conjunctions, and all odd-multiple-of-45° aspects appear as oppositions.

With Friedrich Sieggurun he introduced a total of eight hypothetical planets and established the system known as the Uranian System or Hamburg School. It uses aspects between primary points (eg planets) and midpoints to make "planetary pictures type 1", aspects between midpoints and midpoints to make "planetary pictures type 2", and antiscions (positions reflected around the 0° Cancer-Capricorn axis), effectively doubling the number of factors.

The average chart generates some thousands of factors, and the Uranian astrologer is said to find his way through the maze by intuition. Witte's system aroused much opposition in Germany and elsewhere when it was first announced (Ebertin sees its claims as "without substantiation and without proof ... therefore beyond any discussion" p.28). Today, despite a small hard core of followers, most astrologers show no interest in it other than its use of midpoints as promoted in the Ebertin system.

In Germany in the late 1930s Reinhold Ebertin (1901-1988), son of well-known astrologer Elsbeth Ebertin (1880-1944), adopted many of Witte's techniques including use of midpoints and the 90° dial. But he rejected houses and hypothetical planets, used graphical ephemerides, downplayed sextiles and trines, reduced orbs, distinguished between psychological, biological, and sociological outcomes, and suggested probable manifestations. He explains some of his innovations, and his approach to previous difficult areas, as follows:

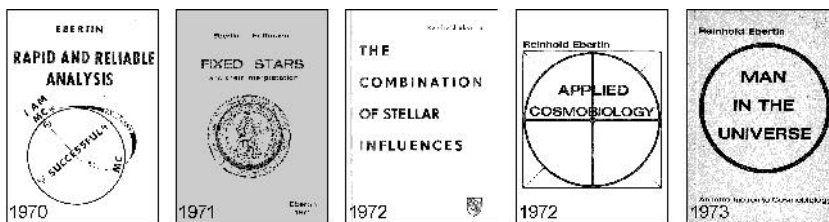
Whereas one can read more or less prescriptive rules often longwinded as regards every single aspect in the more old-fashioned astrological textbooks on interpretation, the various elements of interpretation concerning the stellar bodies have been combined together in this work. Thus a combination of Sun and Moon means: "Spirit and Soul, conscious and unconscious influences, vital power and feeling, Man and Woman". The following psychological correspondence can be derived from the foregoing definitions in a positive sense (+): harmonious character, inner balance, and in a negative sense (-): inner discontentment, unbalanced behaviour etc. The signifying symbols + and - have been chosen purposely in order to avoid the terms "favourable" and "unfavourable", the use of which is becoming more and more obsolete in modern astrology. Hitherto, squares and oppositions have been termed unfavourable and sextiles and trines favourable. However, experience has shown that such a usage is not always correct.

I have attempted repeatedly to explain the difference in such a way that sextiles and trines signify a state of things, whereas squares and oppositions signify an action or an event. ... Now many a reader may ask the question under what circumstances are we to use the positive interpretation and under what circumstances the negative interpretation. Such a valuation depends on the integral examination and judgement of the complete natal chart ... In addition, he must perceive at which developmental stage the individual is at present and what situations could mean conflict. This kind of immediate picture can be made of the individual not only from conversation, but also from his handwriting, life history, his behaviour, or from psychological tests (pp.13-14).

In Ebertin's system a midpoint (or "half-sum") is a point midway between the ecliptic positions of any two of ten planets, Ascendant, MC, and Moon's node. A midpoint between A and B is written A/B. If X is at the midpoint it is a *direct* midpoint, written $X = A/B$. If X is in a multiple-of-45-degree aspect to the midpoint it is an *indirect* midpoint, and a square is written $X \square A/B$. The orb is generally 1.5°.

The system is known as *Cosmobiology*, a name originated by the Austrian physician Dr Friedrich Feerhow and later used by the Swiss statistician Karl Krafft. They felt that astrology had too many outmoded traditions, so a new name was needed for an approach based on more scientific foundations.

Cosmobiology soon became known for its differences from ancient astrology. In 1940 the first of a continuing German series of annual *Cosmobiological Yearbooks* was published, followed by specialised journals. By the 1970s a wide range of textbooks were available in German, French and English, most of them printed by Ebertin's own printing house Ebertin-Verlag in Aalen. Here are some examples:



Some of the English translations available in the 1970s, all printed and bound by Ebertin-Verlag in standard A5 size. Fixed stars were not routinely used, but by popular request *Fixed Stars* gave interpretations for 73 stars, notably stating that "practice shows that declination [which for most stars is large] does not appear to matter at all" (p.11).



The Ebertin-Verlag offset printing and publishing house in Aalen, 70 km east of Stuttgart, Germany, in 1976.

In *The Combination of Stellar Influences* each combination of the thirteen primary points (10 planets, Moon's node, Asc, MC) was given an interpretation in a standard format of two pages for each midpoint making a total of 156 pages, here illustrated by this abridged example:

Mercury/Saturn

Principle: Depth of thought

Psychological Correspondences: + Logical. – Shy. C (for conjunct) Obstinate.

Biological Correspondence: + Blocked nervous system. – Relation to speech and hearing.

Sociological Correspondence: + Thinkers, philosophers. – Dishonest people.

Probable Manifestations: + Sure advancement in life. – Difficult life.

Mars at midpoint: + Quarrelsome. – Treats others badly.

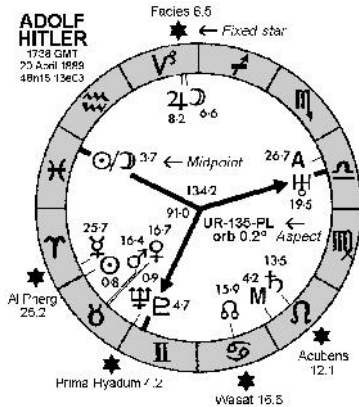
MC at midpoint: + Focussed on own ideas. – Thinker, traveller.

The interpretations were initially based on symbolism and were then refined via feedback from users, a feature that is almost unique in astrological book publications. They were first published in German in 1940, in English in 1960, then revised (for the last time) in English in 1972. Inevitably some midpoint interpretations were studied more than others, but by 1972 each was backed by at least several cases. Unusual in an astrology book, but common in most Ebertin books including this one, is a scholarly introduction and a review of related (albeit non-scientific) studies. However, the use of midpoints increases the number of aspects to be considered from about 10 in a traditional chart (orb 8° for major aspects) to about 60 in an Ebertin chart (orb 1.5° for all), which are reduced to a manageable number by (1) giving greater weight to exact midpoints, and (2) accepting only indications that are supported by at least several other aspects. Ebertin points out that:

Whereas the Hamburg-School of Astrology rests almost entirely upon the interpretation of the planetary pictures, neglecting the traditional aspects at the same time, such a procedure is just as partial according to our modern findings as if one ignores the mid-points or half-sums and judges the aspects only. Numerous investigations and experiments have proved that the simultaneous use of both half-sums [mid-points] and aspects leads to successful results. Moreover the inclusion of a third interpretative factor [mid-points] also restricts the number of possible interpretations, thus leading to a more exactly defined statement as to the correctness of the interpretation (p.27).

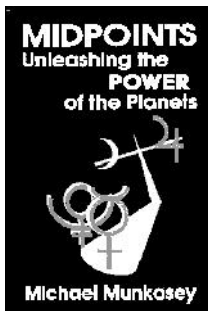
Because of its clarity and systematic presentation, *The Combination of Stellar Influences* has become one of the most definitive modern sources of planetary interpretations, and is often rated as the top astrology book of all time. Following the death of Reinhold Ebertin in 1988, his son Dr Baldur Ebertin took over as leader of the Ebertin school, but later left in order to concentrate on his clinical psychology and psychotherapy practice.

Comment Any midpoint is like a hypothetical planet – there is nothing physically there. Nevertheless the Ebertin system is widely used in Germany and has been increasingly adopted elsewhere. But "popular" is not necessarily the same as "accurate", and in this case opinions are far from unanimous. Thus traditionalists insist that traditional methods, if properly understood, need no extras, while cosmobiologists insist that rejecting much of tradition (such as houses) is desirable. An example often quoted to show the superiority of the Ebertin system is Hitler's chart, but traditionalists argue that such superiority is an illusion:



Hitler's chart midpoints vs tradition. The birth time is not known with certainty (several have been proposed), but the one shown is commonly used. At first sight by traditional methods Libra rising (Ascendant is denoted by A), Sun in Taurus, and Moon conjunct Jupiter are hardly compatible with Hitler's ability for tyranny and destruction. The close sesquiquadrate (135°) between Uranus and Pluto is exactly descriptive of Hitler but it would not normally be considered because it applies to many other charts. However in this case both planets are at the Sun/Moon midpoint with orbs of 0.8° and 1.0° and thus become central to the whole chart. Is this a win for midpoints? No, because as UK traditionalist and historian David Ovason (pen name of Fred Gettings) points out, "the secret of Hitler's horoscope lies in the [five] evil fixed stars that manifest their influences through it" indicating "violence, malevolence and destructiveness ... violent nature ... intense determination ... violent disposition ... a violent life and a violent death" (*History of the Horoscope* 2005:221-222). Here the average fixed-star orb is 0.6°, range 0.1°–1.4°. Average declination (ignoring N or S) is 18°, range 22N to 23S.

But there are no controls or probability calculations. A difference in Moon position of $\pm 1^\circ$ would not unduly affect the above arguments including the effect of fixed stars, yet during the corresponding time interval of ± 2 hours more than 600 surviving male births would have occurred in 1889 in Western Europe alone, all with the above signifiers. So these signifiers are hardly decisive, especially with a sample of $N=1$. A better comparison would be the performance of midpoints vs tradition in matching tests, but no advantage due to technique (any technique) has been found, see 8.4.



In 1991 US astrologer Michael Munkasey built on Ebertin's brief blunt descriptions to produce wordy milder versions (which with the permission of Baldur Ebertin were in the same Ebertin format) in his *Midpoints: Unleashing the Power of the Planets* (ACS).

7.2.1972.3 On meeting an astrological twin

Al H Morrison, *The Astrological Review* Winter 1972-1972:5. *The Astrological Review* (published by the Astrologers' Guild of America) was founded in 1929. Because of its interest the text below is verbatim and unabridged.

I am in conversation with a friend in the rear of a long, narrow antique shop. The door opens with the usual jingle of an old bell. We look, and lo, in walks my double. His build is mine, his gait is mine – instantly I am uneasy, hostile. By what right has this stranger to duplicate me? By the time he has walked to where we are, he is clearly annoyed at finding me, his double, sitting there, duplicating his mannerisms, posture, voice. He forgets what he came in to tell my friend, begins struggling to cope with the shocking experience of meeting an astrological twin. We can literally feel each others' minds, feel each other marveling at the likeness, and we both feel invaded, discovered.



Al H Morrison at the 1977 AA Conference.

A telepathy link springs abruptly into working reality – we verbalize to discipline the exchange into semantics, and to cater to our mutual friend and his concern at the encounter. We say the same things in the same way spontaneously – and the harder we try to avoid duplicating each other, the stronger is the fact and the greater our dismay. We dress very much alike, have the same dental condition, share similar scars, share identical personal habits – have had essentially similar life experiences with events

at identical dates. I am born in Arkansas, he in Missouri, on almost the same meridian at almost the same minute. The discrepancies between our charts are obviously very slight. He is an antique fancier with a hobby of astrology – I am an astrologer with a hobby of a few cherished antiques.

The startling duplication of physique and behavior apparently comes from an identical ascendant (the latitude difference is compensated for by a slight difference in longitude and time, so that the very small discrepancies between the two charts are in details other than rising degree). We talk for a couple of hours to get to the bottom of this very uncomfortable experience, make amenities, exchange addresses (just in case), and part. It has been three years now. There is no need or urge to pursue the acquaintance.

Comment Al H Morrison BA (1916-1995) was the erudite editor of *CAO Times* (journal of the then US Congress of Astrological Organizations), an uneven but always interesting paste-up of articles, letters, cuttings, and reprinted snippets, originally published four times a year, later "at uneven intervals, no specific dates, there may be one issue per year, or 5 or 6" (the actual average for 1977–1985 was two per year). When the 186 scientists doubted astrology as unwarranted speculation, he felt that "grant money and cogent fairly-made observations could set the doubt at rest" (*CAO Times* 3(2), 41, 1977). But a better start might be a cogent fairly-made investigation of these two astrological twins. If his account is true, it is not merely remarkable, it is one of astrology's great missed opportunities.

7.2.1972.4 On the practice of astrological consultation

Fritz Riemann. Über die Praxis astrologischer Beratung. *Zeitschrift für Parapsychologie und Grenzgebiete der Psychologie* 4, 207-221, 1972. Riemann was an important and experienced psychotherapist in Munich. He used astrology, and here he provides a counselling-based picture of German astrology in the 1970s including its benefits and dangers.

Astrology is facing a renaissance. And behind this new-found interest there is a need for something not available elsewhere, namely an expansion of consciousness through symbolism. But as practiced today astrology is not taken seriously. Therefore astrologers will have to develop new approaches, decide things like their official training and educational background, and (most crucially) decide what a chart can or cannot reveal. This will take much time.

Since astrologers have no accepted role such as doctor, judge or priest, they are guided only by the vague expectations of their clients, who usually do not know what the astrologer can offer but expect an oracle. This makes it possible for an astro-counsellor to behave like an omniscient when the aim should be to help clients achieve self-insight:

It is precisely the knowledge of the horoscope, in addition to that of the environment and circumstances, that can make us more just and tolerant in the judgment of others, and allow us to be particularly clear about the fates that exist. By comparison the psychotherapist is easily in danger of seeing only the neurotic in the patient (p.211).

People come to me in crises of various kinds – career, family, important decisions. Help can begin very early as when describing to parents the interests and talents of their children. But marriage counselling is usually more problematic. The astrologer should never give advice and should be aware only of the indications from the individual charts and their comparison.

To me astrology has a special advantage over other counselling methods:

Here, through the 12 signs of the zodiac alone, we have the opportunity to convey an understanding of various types of experiences that can greatly enrich our understanding of others and thus our human tolerance, an understanding that otherwise can be completely lost via expectations, disappointments and misunderstandings (p.213).

In other words if we want to view a person as holistically as possible (the aim of every psychotherapist) we cannot do so without knowing their horoscope. On the other hand:

It is a fact that even today many astrologers are irresponsibly advising on every aspect of life. They have no medical, psychological or counselling training. They believe they can do without any specialised knowledge and can pronounce on anything and everything just from the horoscope. They have read a few astrology books but merely pass on their rules and recipes. These people have contributed a lot to astrology getting a bad name (p.214).

In my experience astrology works, but failure to demonstrate this scientifically is due to single chart factors being considered and not the whole chart:

Instead of an isolated "Sun-Saturn conjunction" or "Jupiter at MC", there is only the chart of a Mr X in which these and other factors – all with their individually different contexts – must be considered together (p.217).

Why? Because each factor's symbolism is general only, and to make sense for the client it has to be combined with everything else (not just chart factors), for which there are no recipes.

In a crisis people want to understand themselves better. Difficulties need to be weighed and considered from all sides, and here the client is helped if he can be shown what speaks from his chart for or against a particular decision – provided we can translate the chart in a way he can understand, which is not always easy. Otherwise when combined with standard psychotherapeutic work great therapeutic potentials can be achieved:

If it really comes to a renaissance of astrology, we have to relearn astrology in many ways. We must descend from the pedestal of magical prophecy and the proclamation of destiny to the level of simple conversation – which, by the way, is much more difficult. Conversation using astrology will probably become part of a future psychotherapy (p.219).

Comment Riemann implies that astrology not only works but is also true, which was a problem not then recognised due to lack of scientific tests and the usual evasions, see 4.8.1-2. His emphasis on conversation and qualifications accurately predicts current practice. But 50 years later there is no evidence that astrology is being widely accepted as part of psychotherapy.

7.2.1973.1 From a consideration of rulerships to a new theory?

Arthur Mather. A unifying concept in astrology. Originally from *Astrological Journal* 15(1), 25, 1973, later updated in 1980 (unpublished). The summary below includes a summary of rulerships from *Recent Advances* 1977: 203-214.

Traditionally each sign is ruled by a planet that shares its nature, for example Aries (assertiveness) is ruled by Mars (energy). So Mars is stronger in Aries, and conversely weaker in the opposite sign or *detriment* (here Libra, indecision). Each planet also has a sign (or sometimes a degree) called *exaltation* where its positive qualities are emphasised, while in the opposite sign called *fall* its negative qualities are emphasised.

Ancient allocations

These rulership ideas are usually attributed to Ptolemy, whose *Tetrabiblos* c150AD allocated planets to signs by matching their nature with the appropriate dry/wet/hot/cold combination of the Mediterranean climate and hence with the corresponding sign. Thus Saturn (then the coldest and most distant planet) was allocated to Capricorn and Aquarius, sun signs of the northern winter. The Sun (always the hottest body) was allocated to Leo, sun sign of the northern summer, and the Moon (the other light) was allocated to Cancer, the other summer sun sign. The rest were allocated according to their distance from the Sun. In other words the allocation of rulerships was largely based on the physics of heat and distance.

The allocation of exaltations is very ancient but seems unconvincing, for example Mars is exalted in Capricorn and Saturn is exalted in Libra. Four signs (GE-LE-SG-AQ) do not appear in either exaltation or fall. And exaltation degrees do not have opposite fall degrees (so they are not like degree areas which often exist as pairs 180° apart, ie as an axis, for example 28-29 Leo-Aquarius used to be quoted in some text-books as indicative of astrological ability). Their modern use is declining.

The allocation of rulerships according to distance also occurs in the old idea of planetary hours, which are not clock hours but 1/12 of the daytime period for day hours, and 1/12 of the nighttime period for night hours. Planets are allocated to the hour in reverse order of distance, namely SA-JU-MA-SO-VE-ME-MO, with repetition of the sequence as needed. The planet ruling the first hour gave its name to the day (SA-Saturday, SO- Sunday, MO-Monday, MA-Tuesday, ME-Wednesday, JU-Thursday, VE- Friday), which naming is more obvious in French (MA-Mardi, ME-Mercredi, JU-Jeudi, VE-Vendredi). But there is now no connection

with distance and thus with rulerships. Furthermore, although the duration of each planetary hour was not unreasonable at the latitudes known to Ptolemy, they become absurdly short at higher latitudes, see 6.10.2.

Modern developments

Today sign rulerships require reallocation to accommodate the trans-Saturnian planets, and in the southern hemisphere they need to be reversed to match the reversal of the seasons on which the tropical zodiac is based, at least in theory. This is undeniably awkward, so it is not surprising that the old rulerships and exaltations of tradition are subject to vigorous dispute. For example according to Alexander Volguine (*The Ruler of the Nativity* 1973:26), proposals for the sign ruled by Pluto include Aries, Cancer, Scorpio, Sagittarius, and Pisces. Indeed, it is not hard to find astrologers whose experience has led them to embrace rulerships (any rulerships), nor astrologers whose experience has led them to reject all rulerships (*Recent Advances* 1977:204-207 gives specific examples). Surely empirical tests would sort this out?

Alas, tests offer no improvement. For example two leading techniques that claim to measure planetary strength are Volguine's, based on over 1000 charts and more than 40 years of work, and the Church of Light's astrodynes, based on 30 years of work by an army of students from around the world (Church of Light, *Astrology 30 Years Research* 1956). Each claims a sound empirical basis, each involves rulership criteria specifically rejected by the other, and each gives different results (*Recent Advances* 1977:207-208).

Johndro's hierarchy

Because 10 planets do not fit 12 signs, many alternate systems have been proposed. Those using hypothetical planets might seem to have an advantage except their hypotheticals do not agree, see 4.6.1. A major advance (*A New Conception of Sign Rulerships* 1929a) was claimed by its author L Edward Johndro (1882-1951), considered by some to be the leading technical astrologer of his time. He had abandoned traditional sign rulerships but was still convinced that sign rulerships were fundamental to astrology. During 20 years of research:

scores of rulership schemes were evolved, tested and abandoned in turn ... upon evidence of their breakdown (p.4).

His final system was a hierarchy of rulers and sub-rulers in which Mercury through Pluto (with repetition of the sequence as required) were allocated to each 45°, 15°, 7.5°, and 3.75° sector of the zodiac beginning at 0° Aries. A planet was then interpreted via the four planetary rulers of the degree it occupied using the list of planetary keywords given in his *The Astrological Dictionary and Self-Reading Horoscope* 1929b. Which at first sight might seem more promising than most, except he points out that his system must be changed:

if at any time planets of size are discovered beyond Pluto (1929a:5). [As several have been, see Sedna 7.2.2004.3]

But at the time he claimed that his new system offered the last word in accuracy and:

unlimited vistas ... At first you may make ... [delineations] that do not apply to you. Try changing a ... [key] word here and there for another given under the same planet and you will find it fits you perfectly (1929b:37,28,41).

Since his system generates for each planetary aspect well over 10,000 keywords, of which we are to choose only those that perfectly fit the facts, it is hard to disagree (1977:210-212).

Rulerships revisited

Today the consistent lack of evidence for the validity of signs suggests that rulerships will be a waste of time, at least factually. But I (Mather) suggest they deserve another look in case we have missed something. After all, the classic allocation was made when only five planets were known in addition to the two lights (Sun and Moon), so a simple doubling up of the signs allocated to each planet quickly gave the sequential match required:

	1-----	2-----	3-----	4-----	5-----	6-----	7-----	8-----	9-----	10-----	11-----	12
Sign:	AR	TA	GE	CN	LE	VI	LI	SC	SG	CP	AQ	PI
Planet:	MA	VE	ME	MO	SO	ME	VE	MA	JU	SA	SA	JU

The allocations were determined by symmetry about 4-MO and 5-SO

But the match was spoilt by the discovery of three planets beyond Saturn (UR in 1781, NE in 1846, PL in 1930), which led to ongoing arguments about what ruled what. The total was now eight planets and two lights, which needed two more for an exclusive match. But rather than explore the various conflicting suggestions (of which the most popular was to cheat by adding UR, NE, PL as joint rulers of AQ, PI, SC), we should first look at the planets as they go outwards from the Sun in alternating sign polarity. As seen from Earth, this gives:

5 SO-LE(+) 4 MO-CN(-) 3 ME-GE(+) 2 VE-TA(-) 1 MA-AR(+)

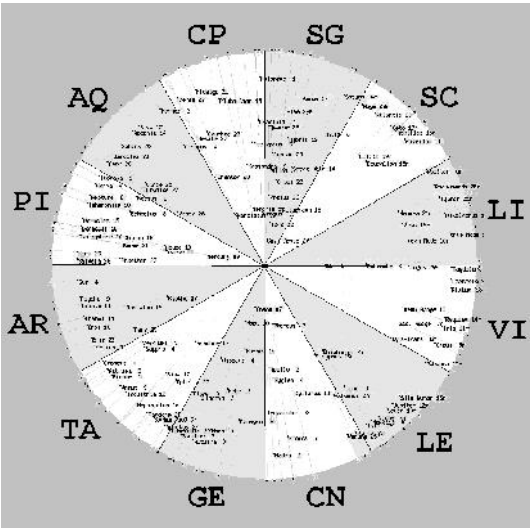
thus accounting for all signs LE through AR. So far so good.

The next step from Mars MA-AR(+) to Jupiter JU-PI(+) does not alternate in polarity, but this is easily fixed via Bode’s Law and the asteroids as first proposed by Maurice Wemyss (pronounced Weems) in his *Wheel of Life or Scientific Astrology* (Volume 3 c.1929). Adding the asteroids (here AD, a “nowhere but everywhere planet”) then gives this alternating sequence:

12 AD-PI(-) 11 JU-AQ(+) 10 SA-CP(-) 9 UR-SG(+) 8 NE-SC(-) 7 PL-LI(+)

the match of AD to PI being appropriately like a shoal of fish. Continuing on as per Wemyss, JU is matched to AQ(+) and UR to SG(+); SA-CP(-) is of course traditional; and the trend beyond UR matches a watery NE to the water sign SC(-), and ruler of the underworld PL to LI(+) portal to the lower half of the zodiac. But what can be matched to the remaining VI?

The same trend matches VI to a body beyond PL, an area that from the 1940s was held to contain bodies too far apart to have condensed into planets. Later named the Kuiper Belt (here KB), it is now thought to contain more than 10^5 bodies over 100 km in diameter. The resulting 6 KB-VI(+) and its opposite 12 AD-PI(-) both match signs with a scattered planetary identity, while KB with harvest-time VI matches the symbolism of toiling to gather a scattered harvest.



There could of course be arguments for using a single body from the asteroids or Kuiper Belt, but where could this reasonably end?

This asteroid chart with 1000 of the $>10^5$ known asteroids shows the futility of trying to include every known small piece of cosmic rock. [Chart was added in 2017]

Astronomically both asteroid and Kuiper Belt bodies are dynamically stable, whereas the Centaurs (including Chiron) are dynamically unstable and are therefore a temporary group between JU and NE that is not an integral part of the solar system. So these and the more distant Oort Cloud of $>10^{10}$ cometary bodies (also dynamically unstable) could be seen essentially as no more than comets – ie as disturbing interlopers with their own agendas.

The proposed re-allocation of rulerships is unorthodox. But it preserves SO in LE and MO in CN, and the symbolism is much more appropriate than might at first appear. For example just for starters look at the planets in opposite signs – the awkward challenge of matching unlike planets to the same sign is absent, they include precisely all the planetary pairs designated as upper and lower octaves of each other, and there are some striking physical correspondences mostly not present in the traditional rulerships as indicated below:

	1-----7	2-----8	3-----9	4-----10	5-----11	6-----12
Sign:	AR LI	TA SC	GE SG	CN CP	LE AQ	VI PI
Planet:	MA PL	VE NE	ME UR	MO SA	SO JU	KB AD
Physical	Small	Circular	Anomalous	Outshone	Largest	Many minor
corres:	wrt SO	orbits	astronomically	by SO+JU	bodies	objects

The planetary series may now be refitted to the signs to yield the equivalent of detriments, exaltations, falls, and other symbolic correspondences, all of which could be worth exploring. Indeed all allocations may have a symbolic message of some kind, and each individual chart may even have its own set of rulerships and exaltations based on where its own ruler occurs.

Merits of rulerships

As previously mentioned, other rulership allocations have been claimed, depending on the criteria used. For example the Indian system mostly follows tradition except it incorporates the Moon's nodes. As do the Ram and Witte systems except they incorporate hypothetical planets, whose mutual disagreement is enough to reject them. Systems that use minor bodies such as individual ADs or KBs would be more realistic but would require an explanation as to why their companion bodies were excluded. In the end any system of rulerships reduces to an untested exercise in conceptual thinking designed to pave the way for trial by experience.

Those who consider any such conceptualisation faulty or mere fruitless invention are justified in rejecting the idea of rulerships entirely. But those who prefer tradition should not forget the problems created by the newer planets. The merits of this new proposal are **(1)** astronomical authenticity, **(2)** a consistent astrological symbolism, and **(3)** an underlying unity leading to possible conceptual insights. For example:

Given the striking correspondences, one can ask whether the signs possess basic qualities that are reflected in the planets, or is it vice versa? Since the number of planets can presumably vary freely, it might seem that planets come first and signs follow. But the story need not end with planets and signs. A comparison of this new planetary series with the sequence of aspects may offer, to some at least, a revelation into the real essence of astrology:

Harmonics

Aspects, or harmonics as John Addey and Peter Roberts accurately described them, also form a series with an alternating positive and negative character (eg 60-90-120). So their harmonic numbers invite a comparison with the planetary series, with the following obvious possibility:

	1	2	3	4	5	6	7	8	9	10	11
Planet:	MO	ME	VE	MA	AD	JU	SA	UR	NE	PL	KB

with SO being either 0 (the source of everything) or 12 (corresponding to the 12 sun signs).

This correspondence, for those still following the argument, suggests there is a common thread based on number quality that links planets, signs and aspects, which in turn leads to the fundamental question: Was Pythagoras right in saying all numbers have an innate quality? Or was Aristotle right in saying they did not? The provocative answer is that both might be right. When it comes down to the purely material and practical level Aristotle is undoubtedly correct. But numbers may strike chords in our inner selves in the same way that music does with its various harmonies and harmonic relationships. This could make astrology soul stuff, able to talk to our inner being not just symbolically with our inner eyes but perhaps musically with our inner ears as well.

Comment

Despite the controversy surrounding rulerships, their role in chart interpretation by those who accept them should not be underestimated. Thus the ruler of the rising sign is singled out to be "the chart ruler" and will be held to show the native's characteristics and destiny according to its strength and house position. The nature of events in planetary directions, traditionally held to be shown by both the directed and receiving planets, will often seem:

to derive more strongly from the houses ruled or from the signs or houses occupied, than from the intrinsic nature of the planets themselves (Ronald Davison, *The Technique of Prediction*, revised edition 1971/1990:137).

So, for those who accept rulerships, any proposals for change are hardly trivial.

This new approach suggested by Mather was first formulated by him many years ago. Today

the consistent lack of evidence for the validity of signs is impossible to ignore, at least factually. But for those who do not need astrology to be true the above unification might eliminate unproductive conflicts in the existing system – conflicts that can upset the help that clients get from a chart reading. For example a client seeking clarity would not be helped by persistent ambiguity. All being well the result would be not only a smoother chart interpretation and synthesis but also perhaps the only honest and productive way forward in the light of test results – a good example of how symbolism that inspired the past can resolve problems in an unfolding future. It might even claim to be one path to a brave new astrology.

7.2.1975.1 Trait words and astrology's glorious future

James Williamsen. Issues in Astropsychology I. *Cosmecology Bulletin* Number 3, 1-12, 1975. The aim is a dialogue between psychologists and astrologers that will lead to a scientific understanding of human behavior. But that was in 1975. Psychologists today would say they already have a good understanding without any need for astrology.

Williamsen starts by emphasising that astropsychology as a science is long overdue:

We have a very long road to travel ... Basic issues are unsettled. Not only do psychologists and astrologer communicate poorly with each other, but there is also a growing heap of ill-founded criticism and half-baked experimentation which seriously threatens any constructive efforts. To complicate matters further, the rapid growth of both humanistic psychology and person-centred astrology has, in my opinion, made the ultimate objective even more remote by providing yet another series of special vocabularies and concepts to hide behind (p.1).

He then gives examples of the different ways different astrologers use trait words:

Charles Carter's *Encyclopaedia of Psychological Astrology* 1954 determines via case histories the chart indications for various traits, for example heavy afflictions to MO ME VE and JU indicate dishonesty. In contrast his *Zodiac and the Soul* (1968) attempts to derive the meaning of traits from first principles. Traits are ending points not starting points as in the first book.

Jeff Mayo's *Planets and Human Behaviour* 1972 accepts as a definite theory what Carter only implies, namely that each planet has a distinct link with behaviour rather than with traits, which are then merely a way of describing behaviour. For example he links the Sun with self-integration, which activates a desire for power or the urge to organise, at which point (and only at this point) do trait words become relevant for describing the behaviour.

Different again is Sakoian and Acker's *Astrologer's Handbook* 1973. Unlike Mayo, they do not explore theories of solar principles but cut to the chase. Thus Sun in Cancer = sensitive, Sun afflicted in 9th = eccentric religious beliefs, Sun square Uranus = leaders of groups.

In short, their use of trait words varies according to (1) quality of the evidence used to relate trait words to chart factors (high for Carter, low for Sakoian and Acker), (2) quality of the theorising used to relate one trait with another (high for Mayo, low for Sakoian and Acker).

But it is very different in psychology. Here the traits that are applied to people have had their validity and reliability objectively tested by many (often very many) independent researchers. The result is reliable evidence, which is generally absent in astrology. Williamsen suggests:

This betrays the *real issue* behind psychology's dismissal of astrology. It is not that "astropsychological tests" (if there are any) are demonstrably unreliable according to measures acceptable to psychologists. This simply has *not* been demonstrated. The real issue is, *how should reliability be established and measured* [in astrology, so the] measures are comparable to those applied in psychological factors? (pp.10-11, his italics).

Here Williamsen's concern is not to answer such questions by correlating Moon square Saturn (said to indicate dishonesty) with scores on valid tests of dishonesty, or by correlating Mercury conjunct Saturn (said to indicate cheating) with scores on valid tests of cheating, but how to generate a viable astrological hypothesis that links dishonesty with cheating:

Suppose ... that in 25% of Moon square Saturn nativities, Saturn conjunction Mercury was also observed. Would this imply that about 25% of dishonest individuals were also cheaters on tests and 75% were not? (p.11).

Williamsen points out that such speculations allow no conclusions. But they do suggest the benefits that could be obtained by bringing psychologists and astrologers together:

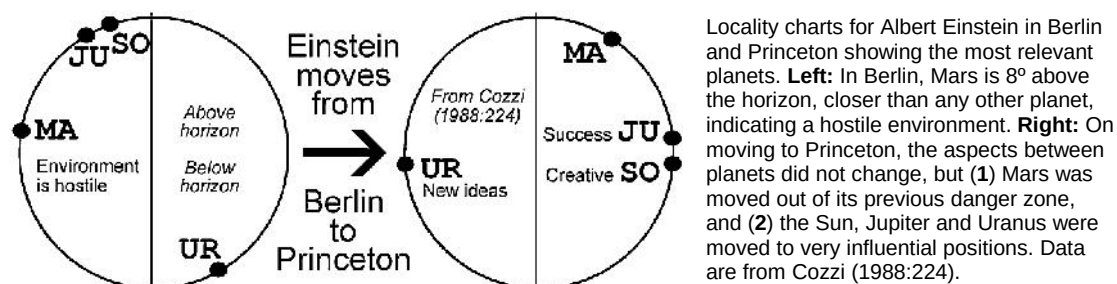
Instead of elusive hypothetical entities like traits or potential behaviors – things which keep ... psychologists awake at nights – we may someday have much less elusive horoscopic patterns which, in turn, correlate with observable astronomical factors on the one hand, and with observable human behavior on the other (pp.11-12).

Comment In 1975 such views might have received a standing ovation from astrologers. Today they reveal the problems caused by advances in research, and by someone dealing in technical areas outside their speciality – notice how Williamsen is more interested in creating a theoretically consistent system (which is typical of mathematicians) than in starting with observations and building on them. But his approach was unproductive, for it assumed that astrology could deliver in ways that hundreds of tests have now shown to be beyond hope.

7.2.1976.1 Can astrology indicate the best place to live?

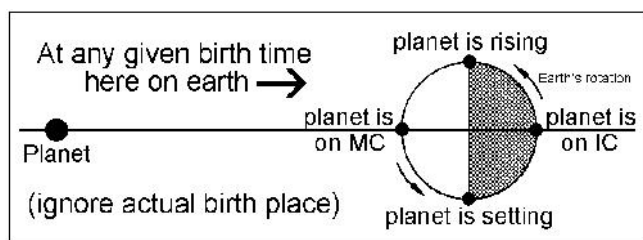
Steve Cozzi, *Planets in Locality* 1988. And Jim Lewis and Kenneth Irving, *The Psychology of Astro*Carto*Graphy* 1997. The Astro*Carto*Graphy map was developed in 1976 by US astrologer Jim Lewis (1941–1995). Such maps were not a new idea but their calculation was impractical before the advent of computers.

A birth chart that is re-calculated for a *new* location but the *same* birth time is called a locality chart. It will have the same planetary sign positions but with entirely new house positions that are said to show how the new location will affect its owner. In effect a new location re-orders the planetary influences through new house positions, as in this example:



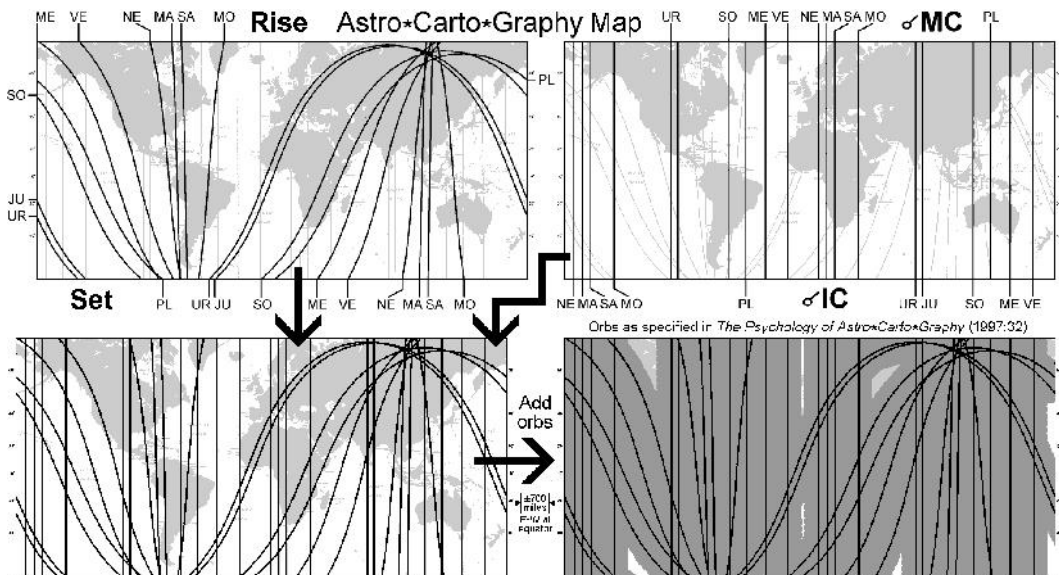
Positions in a birth chart are normally shown projected on to the ecliptic measured in degrees from 0° Aries. But positions in a locality chart are normally shown projected on to the local horizon plane (ie what you see when you look out the window) measured in degrees from true north, ie in azimuth, so they are truly local. Each location requires a separate chart.

An Astro*Carto*Graphy map extends the locality idea to include all possible locations on earth in one chart, which of course is a massive advance in convenience. The principle behind the calculation of Astro*Carto*Graphy maps is shown in the diagram below:



Astro*Carto*Graphy maps. For any given birth time, locations can always be found where a given planet is rising-setting (not the same as conjunct the Asc axis unless it has zero latitude) or conjunct the MC-IC axis. When joined by a continuous line, the result is an Astro*Carto*Graphy map. It has to be drawn in right ascension because by definition azimuth applies only to a single location.

In principle charts for re-located births are ideal for research on aspects, orbs and symbolism via people who have lived in many places. But in practice they are much less than ideal due to flexibility of the symbolism (it is not hard to relate any planet to any event) and the number of contacts. Thus an Astro*Carto*Graphy map shows all rising-setting positions and all conjunct-MC-IC positions, a total of 40 lines. If each line is made to show its E-W orb of ± 700 miles ($= \pm 10^\circ$ at the equator) as "determined through experience and through feedback from users" (Lewis & Irving, *The Psychology of Astro*Carto*Graphy* 1995:33), almost no area escapes, see diagram below. For an orb of $\pm 7^\circ$ everywhere, Cozzi comments "When an area seems blank on the map, it really isn't; there are *always* other aspects" (1988:152, his emphasis).



Astro*Carto*Graphy map for the US Declaration of War against Britain 6 July 1775. Rise-set positions for the ten planets (top left) and conjunct-MC-IC positions (top right) are combined (bottom left). The orbs of ± 700 miles are then added (bottom right). This natal chart has six planets (ME, VE, NE, MA, SA, MO) in an arc of 70° , so the plotted lines should be more concentrated than usual, thus leaving more unoccupied space than usual. But even here almost no area escapes. Which is not unexpected because $40 \text{ lines} \times (700 + 700 \text{ miles at the equator}) = 56,000 \text{ miles}$ or $2.25 \times$ the Earth's circumference. So hits are unremarkable. Original map is from Lewis and Irving 1995:94-95.

In principle the opportunities for research extend well beyond people who have lived in many places. For example the planetary lines in your own locality chart can be extended from the centre of your house to intersect with your possessions, allowing instant on-demand testing. Steve Cozzi (1988) explains:

Why do the pipes always leak in the west bathroom and not elsewhere? Why do the dogs always knock over the garbage cans on the north side of the house? Why do certain appliances work in one place and not another? ... There are any number of occurrences in your home and workplace that are difficult to explain unless you can view your environment in a new way. ... After all, what could be more down-to-earth than relating planets to rocks, trees, rivers, hills, and buildings (with the objects and fixtures within them)? (pp.30-31).

For example the Moon line is said to be good for plants, the Venus line for togetherness, the Mars line for activities, and the Saturn line for empty areas (p.47). Links with geomancy and feng shui are evident. **Comment** Despite the marked ease of testing, we could find no controlled tests. Astro*Carto*Graphy is a registered trademark (Lewis and Irving 1997:335).

7.2.1977.1 Gouchon on how to improve astrology

Henri Gouchon, *Kosmos* 7(4), 32-44, 1977. Paper read at the International Symposium on Astrological Research, Paris 1974. Gouchon (1898-1978) was a leading French astrologer whose encyclopedic *Dictionnaire Astrologique* was published in three volumes 1936-1940 with a supplement in 1946, and updated in one volume in 1975.

After many years of reflection and experience, I suggest that to improve astrology we need (1) to get rid of all parasitic ideas whose basis cannot be demonstrated, and (2) to assemble existing experiments to see what they are telling us, for they are certainly numerous but unknown to most astrologers. A parasitic idea can arise because we can almost always find something in a birth chart to provide justification, deluding us into thinking we have made a discovery. Such ideas will pollute astrology and discourage progress by their contradictions and failures. The worst ideas are those that have no apparent foundation in tradition. An example is hypothetical planets, for which I have never found solid evidence. Another is midpoints, which may surprise you, so here is a demonstration:

I once published the natal positions for 21 victims of plane crashes. My aim here was to test

directions, not midpoints, so their use here is not pre-selected. First I calculated the midpoint between Mars and the other malefics Saturn, Uranus and Pluto. I then counted the transits making a dissonant (0-90-180) aspect to these midpoints with an orb of 3°. As a control I did the same for imaginary midpoints moved 10° back from the real midpoints. In both cases I had to ignore the Moon because the death times needed for calculating its position were not available. My results showed that real hits were no better than control hits:

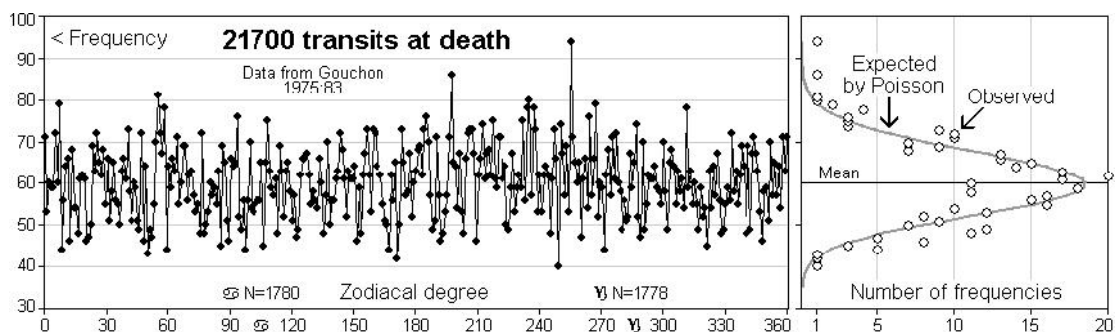
Transits to	MA-SA	MA-UR	MA-PL	SA-UR	
Real hits	10	13	13	10	) In each case 12-13 hits
Control hits	10	12	9	15	) are expected by chance

The only difference in the right direction between real hits and control hits is for MA-PL, but when repeated with an imaginary midpoint moved back 20° instead of 10°, the control hits increased to 13, making the difference disappear. Of course one cannot make a conclusion based on such a small sample, but the results do not encourage further tests. Until I see proper controlled tests with results to the contrary, I consider midpoints to be a heresy. Also I have never succeeded in finding justification for determining planetary strength by exaltation, fall, peregrination [ie added influence due to a special position], and even sign and house rulerships. As for sample size, I think it may be possible to obtain good results with relatively few horoscopes if they are very specific. Thus when Gauquelin examines military men he has to ignore the various motivations that lead to a military career (family influence, temporary

popularity, wish to see the world, desire to fight, liking uniforms) and these are naturally indicated by different factors in the horoscope. To assist the improvement of astrology, my *Dictionnaire Astrologique* (which will reappear at the end of 1974) contains many statistical counts.

Comment Unknown to Gouchon, his point (2) on the need "to assemble existing experiments" was already underway in *Recent Advances*. As for midpoints, Ebertin's famous system had then been in use for nearly 40 years, so a scholar like Gouchon might have been aware of any "proper controlled tests with results to the contrary". His own updated 670-page *Dictionnaire Astrologique* was published in January 1975 and made

frequent reference to earlier French statistical work. Examples are 61 accidental deaths, 52 years of aspects, 10800 celebrities, 100 clairvoyants, 40 directions, 52 fixed stars, 40 lottery winners, 50 marriages, 54 nodes, 3600 planets in signs, 434 retrogradations, and 21700 transits at death. Gouchon does not analyse the results statistically, nor cite important non-French studies such as Vernon Clark's, which lessens the value of his pioneering work. When plotted by zodiacal degree his 21700 transits at death vs a Poisson distribution look like this:



Left: 21700 transits at death from transiting Mars-Saturn-Uranus-Neptune-Pluto to natal Sun, and vice versa, from the table in Gouchon's *Dictionnaire Astrologique* 1975:83, orb 1°-2°. The difference Cancer vs Capricorn (due to the Sun staying longer in Cancer than in Capricorn) is small but in the right direction. **Right:** The observed distribution of frequencies generally conforms to a Poisson distribution, which is the expected distribution if death dates occur at random. There are scattered deviations that could be due to variations in the sample but there is no systematic trend that would point to a link between death and transits. The Poisson test is not valid if the rate (here the death rate) varies over time, but this could not be checked because Gouchon gives no details of his sources.



7.2.1977.2 A lesson from palmistry

Ray Hyman, *The Zetetic* 1(2), 18-37, 1977. Reprinted in *Skeptical Inquirer* 27(1), 20-30, 2003 and other places, with important details in *Would You Believe It? Mysterious Tales From People You'd Least Expect* 2017:99-105. A lesson for every astrologer.

Psychologist professor Ray Hyman began early in magic:

For my seventh birthday, my father gave me some simple magic tricks. I practiced these tricks many times and then performed them for show-and-tell at my school. ... Soon, I was performing magic shows for different groups and functions. I was convinced that I would become a professional magician (2017:99). [Photo is at age 20]

To provide variety he added a memory act, a hypnosis act, and other novelties. By the time he was a teenager he was doing mentalism rather than magic because it was more popular and paid better. He soon discovered that cold reading was even more popular, and to exploit this he considered adding various divination systems including astrology (but it was too complicated), Tarot, and numerology (both of which seemed implausible). He was about to abandon the idea when he discovered a book on palmistry, which seemed a much better bet because the human hand has led to skills that make us the planet's dominant life form:

I went to the library and borrowed every book they had on palm reading. I read about the interpretations of the lines on the palm, the shape of the palm, the relative length of the fingers as well as the phalanges, the size and resilience of the mounts, the meaning of the different patterns of fingerprints, the texture and color of the skin, the shape and markings on the fingernails, and the size of the knuckles. I learned as much as I could about palmistry and then announced that I was open for business (2017:101).

He spent the next six years (aged 17-22) working as a professional palm reader. He knew that palm readings contained vague statements and general descriptions that applied to everyone, but they could also be very specific:

Almost all palmistry texts provide guidelines for locating and dating concrete events that have happened or will happen. During a reading, I might notice a break in the client's heart line, which occurs at a location corresponding to thirty years of age. According to palmistry theory, this break indicates either a serious heart problem or an unfortunate break up of a romantic relationship. A break in the client's headline at approximately ten years of age could be interpreted concretely as damage to the head (such as a concussion) or as a psychological trauma. Such dating of concrete events can be done for each line on a person's hands (2017:101).

He was astonished at how frequently his clients validated these concrete statements. Indeed, he could not recall a single client who failed to confirm the accuracy and helpfulness of his readings. It seemed like clear evidence for a genuine connection between signs in the hand and the life of their owner. Especially as his readings were based on what tradition said about the lines, shape of the fingers, mounds, and other factors. It was nothing special:

My clients consistently praised me for my accuracy even when I told them very specific things about problems with their health and other personal matters. I even would get phone calls from clients telling me that a prediction that I had made for them had come true. Within months of my entry into palm reading, I became a staunch believer in its validity. My conviction was so strong that I convinced my skeptical high school English teacher by giving him readings and arguing with him (2003:21-22).

Later, when he was enrolled as a journalism major at Boston University, he was sternly told by the Psychology Department's head that palmistry was a pseudoscience and that he was taking people's money under false pretences. In response he gave the head a short hand reading, which was received in silence. A few weeks later he was summoned to give a longer reading: "Tell me more" said the head. As a result Hyman continued to read hands for money.

Thus far it could be any astrologer talking about astrology, where they read birth charts and subsequently become staunch believers in astrology's validity. As in Hyman's case, their personal experience seems totally compelling. But this is not the way to test a reading. Hyman then did something every astrologer should do but rarely does except by accident:

A well-known mentalist and trusted friend persuaded me to try an experiment in which I would deliberately read a

client's hand opposite to what the signs in her hand indicated (2003:22). He proposed that if the client's heart line indicated that she does not like to reveal her emotions, I should instead tell her she displays her emotions freely. If her head line showed that she was intuitive, I should tell her she is logical and rational. If her fate line says that she will have one career throughout her life, I should tell her she has had many different jobs and will continue to keep changing her career path (2017:103).

Hyman felt this could be unethical, but he trusted his friend, so he decided to give it a trial. His next client was a lady who had received readings from many other palmists:

After the usual chit chat, I began the reading. Her head line indicated she was intuitive. However, I told her she was rational and logical. Her heart line indicated she expressed her emotions openly, but I told her she hides her emotions from others. Her sun line indicated she was artistic and inventive. Instead, I told her she was practical and conventional. ... When our session was over I asked my client what she thought of the reading. To my surprise ... She was astonished by my accuracy. Everything I had said was spot on and she insisted that this was, by far, the very best reading she had ever experienced! (2017:103-104).

So he carried out more experiments, always with the same outcome:

I realized that my striking accuracy about "concrete" incidents was much less specific than it seemed at first. My readings allowed for a variety of possible interpretations by the client. The break in the heart line could indicate either a literal physical problem with the client's heart or a metaphorical "break up" of a relationship of some kind. If the client didn't recognize any such event, I could check the other lines to see if something else was indicated at that time. For example, I might find a marking on the headline that also corresponded with that same date. I could say that the difficulty might instead deal with a problem with the head or even some sort of confusion. In this manner, the number of possible ways to be correct about a "concrete" incident in the client's life was multiplied enormously (2017:104).

A close parallel with astrology will be obvious. Especially as Hyman had taken each successful reading as evidence for the validity of palmistry. Without his experiment with reversed hand readings he might never have discovered that success said nothing about palmistry's validity. So he stopped reading palms for money. What he had uncovered were the hidden persuaders including cold reading that can make a birth chart reading seem so compelling. Earlier Hyman (*The Zetetic* 1(2), 18-37, 1977) had made these comments about astrology:

The recent controversy ... over the scientific status of astrology probably is irrelevant to the reasons that individuals believe in astrology. Almost without exception the defenders of astrology with whom I have contact do not refer to the evidence relating to the underlying theory. They are convinced of astrology's value because it "works". By this they mean that it supplies them with feedback that "feels right" – that convinces them that the horoscope provides a basis for understanding themselves and ordering their lives. It has personal meaning for them (p.19).

Every system – be it based on the position of the stars, the pattern of lines in the hand, the shape of the face or skull, the fall of the cards or dice, the accidents of nature, or the intuitions of a "psychic" – claims its quota of satisfied customers. The client invariably feels satisfied with the results. He is convinced that the reader and system have penetrated to the core of his "true" self. Such satisfaction on the part of the client also feeds back upon the reader. Even if the reader began his career with little belief in his method, the inevitable reinforcement of persuaded clients increases his confidence in himself and in his system. In this way a "vicious circle" is established. The reader and his clients become more and more persuaded that they have hold of a direct pipeline to the "truth" (p.20).

Breaking the vicious circle by inverting the reading should work for every system.

Comment But former astrologer Geoffrey Dean was not so sure. He routinely offered a substantial refund if his chart interpretations were wrong, yet no refund was ever claimed. And it seemed unlikely that clients would accept wrong chart readings when they could get a refund. Nevertheless, to find out, he used volunteers to test birth charts that, unknown to them, had been altered to reverse their meaning. If the authentic chart had Sun square Mars (meaning *impetuous*) the reversed chart had Sun trine Saturn (*cautious*), with the Sun sign remaining the same. In this way extraverted indications were substituted for introverted, stable for unstable, tough for tender, ability for inability, and so on. Such charts allowed the reading to proceed normally without the need for pretence. Only charts that could be adequately reversed were used. Each subject rated each statement as correct only if both meaning and strength were correct. The outcome was clear: Reversed charts (mean 97% hits N=11 subjects) were accepted as readily as authentic charts (mean 96% hits N=11 subjects), see 7.2.1987.4. The "vicious circle" was broken. Dean immediately gave up reading charts for money.

7.2.1978.1 Unethical astrologer at work

HG Verhoef, *Tijdschrift Astrologie* 1(4), 12, 1978. This is a true story.

The astrologer turned in his chair and faced his client. "Sir, you are lucky not to have been born one day earlier, otherwise your natal Sun would have been conjunct Antares and you would be either blind or in a wheelchair". To the scared client he added "This year your progressed Sun will be in 4th house opposite Pluto in 10th house. Your father will die soon". (He didn't). The forecasts continued, good and bad. But the client had brought a list of exact dates that showed the forecasts were either wrong or some years early. Undismayed, the astrologer announced that the birth time had to be adjusted. But only 10% of the adjusted forecasts were accurate. The astrologer's fee was 275 guilders, then half the average weekly wage. There are similar stories about this astrologer. Such actions are highly unethical, almost criminal, and place the whole profession in disrepute. We refrain only from naming the astrologer.

Comment Unethical actions like these led Rudolf Smit in 1977 to form the NGPA (Nederlands Genootschap van Praktiserende Astrologen, the Dutch Society of Practising Astrologers). Its code of ethics, greatly condensed, reads: Members must have ability, integrity, and a willingness to help each other and to handle attacks on astrology. When interpreting a chart a member should not moralise, claim infallibility, be judgemental, make decisions, predict bad events, be sensational, or enter into areas (eg medical) in which the member is not qualified. The member must maintain client confidence. In the *Australian Astrologers' Journal* 5(3), 23-25, 1981, the Dutch astrologer Marguerite Brose comments:

This Ethical Code is interesting not only because it differs somewhat from the Code adopted in Australia [which is based on the UK Faculty of Astrological Studies code and essentially says be professional, be honourable, uphold the good name of Astrology] but also because it is imbued with the spirit of service and humility, that should be the guiding principle of every astrologer who presumes to give astrological readings to the public (p.23).

7.2.1978.2 Using chart interpretations in counselling

Mary Cummings, Melinda Smith, Kristi Lovick, Paul Crosbie, *Kosmos* 8(2), 5-26, 1978. This study from the University of Montana explores the public acceptance of astrology, and tests the validity and usefulness of chart interpretations.

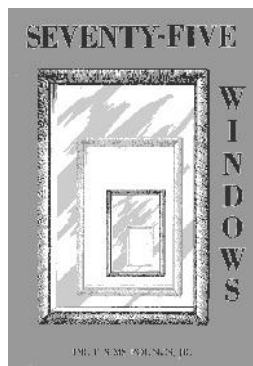
In **Part 1** a questionnaire survey of 220 university students showed that 91% had been exposed to astrology (eg via newspapers and books), and that 36% would visit an astrologer if one was available. The students most receptive to astrology were those not majoring in science or business, who agreed that traditional counselling was valid, and whose parents and friends were receptive to astrology. In **Part 2** twelve subjects working blind had to pick their own from three chart interpretations based on date, time, and place of birth. The authentic chart interpretation was rated 1st, 2nd, 3rd by 4, 7, 2 subjects vs 4, 4, 4 expected by chance [4, 7, 2 does not total 4, 4, 4; the text suggests it should be 4, 6, 2]. The average rating on a six-point scale (1 *Extremely descriptive* to 6 *Extremely non-descriptive*) was 2.46 for authentic charts and 2.56 for the controls. Neither result was significant although the small difference was in the right direction. In **Part 3** each of the twelve subjects was given a personal one-hour reading of their own chart followed by a questionnaire to determine its usefulness. Nine subjects rated the reading as very accurate, and rated chart interpretation as very useful in counselling. The other three rated the reading as moderately accurate and chart interpretation as moderately useful in counselling. The researchers noted that readings were effective in eliciting personal and other information from the subject, more than could be obtained in a conventional interview. Conclusion: chart readings are a useful but not necessarily accurate counselling tool. Moreover, the counselling relationship rests not on the accuracy of the reading but on the counselling skill of the person doing the reading. **Comment** For more on this point see 10.3.

7.2.1978.3 Medical astrology and 250 cases of low blood sugar

Dr F Sims Pounds Jr, *Seventy-Five Windows*. AFA 1978.

Over 18 years the author collected 250 timed cases of low blood sugar confirmed by hospital

tests, discarding a further 300 cases with insufficient data. Their analysis was performed by Neil Michelsen and the ACS computer. The title came to the author while half asleep, and is symbolic of most of the book (it was written in 1975).



The author felt intuitively that the signature for low blood sugar should involve Venus and Jupiter with "manipulations" by at least Mars and the outer planets. To test this idea Neil Michelsen generated six controls for each case using the same year and hour of birth, but with a random date, making a total of 1500 controls. Tests involved sign and house position, angles, aspects (with various orbs), harmonics, midpoints, Gauquelin rise-set sectors (in 2-, 4-, 12-, and 18-sector systems), nodes, declination, latitude, all in both zodiacal longitude and right ascension. However "no clear-cut factors emerged" (p.57). The only significant result that replicated (in this case when divided into am and pm) was Saturn above and below the horizon:

Location					--Above--		--Below--	
	Above	Below	am	pm	am	pm	am	pm
Low blood sugar	148	102	70	78	53	49		
Controls	727	773	348	379	400	373		
p by chi2	0.002 df=1*			0.02 df=3				

*By χ^2 test without continuity correction. With continuity correction $p = 0.003$.
But all above significances disappear when corrected for the number of tests.

The distribution of angular separation between planets and nodes was sometimes significant. But it was inconsistent and probably arose by chance from the large number of factors studied. The chart signature confidently and intuitively picked by the author was not supported.

7.2.1979.1 Two matching tests of 19 astrologers

Wout Heukelom, *Tijdschrift Astrologie* 2(2), 12, 1978 and 3(1), 24-25, 1979.

Four birth charts (dentist, businessman, painter, engineer) were matched to their owner's profession by 19 members of the NGPA (Dutch Society of Practising Astrologers). The breakdown by number of hits was as follows. Note how observations for 3 hits do not appear because if there are 3 hits, the 4th must also be correct, giving 4 hits not 3 hits:

Hits	4	2	1	0
Observed number of astrologers	7	8	2	2
Number expected by chance	0.8	4.8	6.3	7.1

These results are strongly positive. However, the birth charts had been provided some years previously by a professional astrologer, and it seemed likely that they had been selected because they fitted traditional ideas. For example the businessman had Sun and Mercury in 2nd house, indicating a life dealing with money. So it was decided to repeat the test with the same NGPA members but with a new unselected birth chart for each of the four professions. 17 members responded. This time nobody scored four hits, and not many scored two hits (the number expected by chance is 4.3). The outcome was so disappointing that the exact hits were not recorded. The result illustrates the need to avoid bias due to prior selection.

7.2.1979.2 Is there a future for astrology?

Malcolm Dean, *Cosmology Bulletin* 8&9, 20-30, 1979. The author is a Canadian broadcast journalist who helped found the Toronto Guild of Astrologers, which later merged into Astrology Toronto. More importantly he was then the editor/publisher of the monthly newsletter *Phenomena* founded in 1976. It brought together historical, humanistic, psychological, statistical and scientific issues related to astrology, which here shape his views of astrology's future.

The author starts with this pessimistic view of life in the 1980s:

electronic media and communications are leading us inexorably into a world dominated by the commercial dictates of the statistical average. Illiteracy is encouraged by the hypnotic practice of spending many hours focussed on a television screen, the only function of which is to encourage the viewer to participate more fully, and less consciously, in the prevailing economic and philosophical order. Perfect fodder for the ... consumer society (p.21).

In this dismal world the status of astrology is scarcely advanced beyond what it was in ancient Greece. Its innovations have not succeeded in raising its maturity, resolving its disagreements, or preventing its stagnation. There is almost no concern for developing astrology as a whole, in the way that there is concern for developing astronomy as a whole. Here the problems can be seen by comparing modern astrology with modern astronomy:

The rich variety of publications, clubs, professional organizations, teaching posts, and specific fields of interest within astronomy illustrates how a science depends upon various "organs" within its body to maintain its health. Without historians of astronomy, and their various journals, much of ancient astronomy *as well as astrology* would be lost. There are astronomy clubs and magazines for children, young adults, laymen and professionals. There are clubs devoted to specific aspects of astronomy and its allied crafts such as optics and telescope making, time-keeping, mathematics, cosmology, various types of celestial phenomena, and so on (p.22, his emphasis).

Whereas astronomy involves many things, astrology is practically only about horoscopes. Its historical, theoretical and empirical areas are only now starting to emerge in specialised journals, but related areas such as cycle research and biometeorology are still a foreign country.

When in 1977 astrology's full extent was approached in the critical review *Recent Advances in Natal Astrology*, the book became "a topic for diatribe, opinion, and criticism, but damned if anyone will actually act on its implications" (p.23). The author feels that pop astrology need have no fear of the future. But scholarly astrology and its scientific validation will not survive unless they receive active encouragement from hitherto indifferent practitioners, not just the dedicated few who seek to understand the whole field.

Comment The latter included the author and his excellent newsletter *Phenomena*, but it was insufficiently supported and folded after five years, which 35 years later seems like a prescient statement about the future of scholarly astrology and its scientific validation. Of the journals then emerging, nearly all of those that specialised in theoretical and/or empirical issues have

folded, see 5.21. Historical issues remain a viable area, but for how long? Cycle research and biometeorology are still poorly explored. The similarity with a pseudoscience is compelling.

Top The collective folding of research-oriented astrological publications extended even to those generously supported by independent means such as Richard Nolle's *StarTech* and Michael Erlewine's *Matrix Journal*, *AstroTalk*, and *ACT Newsletter*. Despite their very significant content, the interest in research (or maybe the prospects of success) was insufficient to support them. Re lack of funding, see 2.3, 6.2.4, end of 7.7.2018.1, and Erlewine's comments near end of 8.8.6.

Bottom By contrast, publications dedicated to the uncritical promotion of astrology and its value are amply supported, as in this quarterly newsletter founded in 1982 and still alive.

ACT NEWSLETTER No.1
INFORMATION COOPERATIVE

Greetings!
Thank you for your interest in ACT, astrological Conference on Techniques, and ACT related functions. Since it's been been with us before and some of our old friends, an especial welcome to all those ACT & SA members. For those of you who are new, a few words about our story.

All the same time, this newsletter is being established to provide more frequent communication between ACT people. This is our first issue. We hope you enjoy it and will contribute ideas and articles.

IDEA CYCLING
This may suggest for this newsletter will be something a little different. We will be presenting interesting

offer are viewpoints, opinions, comments, etc. What you read the with, think about it for a day or two and send us a letter while the subject is hot.

We don't want our newsletter to take forever getting out. That's why we agree to only send out a letter once a month. We'll be happy to be a little rough and ready. What we need is frequent communication.

ASTROLOGICAL CONFERENCE ON TECHNIQUES
C/O MICHAEL ERLEWINE 315 HANSON AVENUE B'G KAPUS, MI 49307 616/96 2863

Straw Poll — — — Make Your Opinion Count! (see last page)

AFAN NETWORK NEWSLETTER

VOLUME NO.1 ASSOCIATION FOR ASTROLOGICAL NETWORKING OCTOBER 1987

PANEL PROPOSED ON ASTROLOGY AND SCIENCE WORLD NEWS Coming Soon... **AFAN AUSTRALIA**

Early in May a poster appeared around Toronto announcing a series of "Astrological Network News" (AFAN) in a format called "It's Not From The Sky: The Puzzle of Astrology" which was

Federated of Australian Astrologers - Perth Branch sponsored this and the following two newsletters. Special thanks go to Coordinator Geoff Ayden for his help in this above-coverage unit.

7.2.1979.3 Publications from a PhD thesis on belief in astrology

Graham Tyson. *The Social Psychology of Belief in Astrology*. PhD thesis, University of Witwatersrand 1979, 260 pages. This item illustrates the publications (N=5) that can arise from work done for a PhD thesis on astrology, and provides brief abstracts (briefer than the original abstracts) to allow comparison with the style of the article summaries in this book, all of which were specially written by the compilers.

Thesis brief abstract A full summary is at 7.6.1979.1

The evidence is strongly against the claims of astrology. But the generality of the birth chart, its appearance of being specific, its general favourableness, and people's predisposition to believe, make it almost inevitable that astrology will be seen as accurate.

Associated publications

Astrology or season of birth: A split-sphere test. *Journal of Psychology* 95, 285-287, 1977. Pellegrini's (1973) finding of a strong correlation between astrological birth sign and Femininity scores on the CPI could not be confirmed for 615 South African college students. Both the claimed astrological and season of birth influences on personality are therefore rejected.

Occupation and astrology or season of birth: A myth? *Journal of Social Psychology* 110, 73-78, 1980. For 10,313 university graduates in South Africa there was no link between birthdate and career. It seems that neither astrological nor season of birth factors influence choice of career (17 references).

People who consult astrologers: A profile. *Personality and Individual Differences* 3, 119-126, 1982. Sixty-seven clients of two astrologers were compared with 136 controls. The clients tended to be female, aged 30-39, and maritally marginal. The clients were also well-educated. The variable that explained the most variance was stress, followed by political control and religiosity. It seems that consulting an astrologer is often a response to stress arising from a lack of social skills (28 references).

Why people perceive horoscopes as being true: A review. *Bulleting of the British Psychological Society* 35, 186-188, 1982. Most people with an astrological chart reading perceive it to be an accurate description of their personality. Acceptance is increased by generality, perceived specificity, favourability, personality variables, and belief in both the procedure and the astrologer (21 references).

An empirical test of the astrological theory of personality. *Personality and Individual Differences* 5(2), 247-250, 1984. Fifteen female university students and a family member or close friend were unable to pick which one of five chart readings was theirs. The astrologer's ratings did not correlate with personality test scores, self-ratings, or peer ratings. However, the latter three measures showed good agreement, median $r = 0.50$ (9 references).

Comment For casual readers a published abstract (if there is one) can vary from useless ("various issues are discussed") to quite useful as in the above examples. But for researchers important details may be missing, which is always a problem with abstracts. Thus the first one does not tell us what Pellegrini 1973 is (it was an article in *Journal of Psychology* 85, 21-28, 1973) or what CPI is (it stands for *California Psychological Inventory*), which may still leave you none the wiser; and the last one does not tell us who made the chart readings (it was a professional astrologer with ten years of experience who was paid for her work) or what they consisted of (each was 8 typed pages and astrological terms were omitted). Which is why all summaries in this book are specially written to provide researchers with the information they might need to assess the work, whereas the ordinary reader may well see them as boring, too detailed and too technical. But hopefully not totally incomprehensible. Let us know.

7.2.1980.1 Putting oracular astrology to the test

Richard Nolle, Letter in *Mercury Hour* #25, 39, April 1980.

Astro-Dice are three 12-sided dice (made by several companies) that when rolled give a house-sign-planet combination. Richard Nolle, book reviewer for *Horoscope* magazine, says "it sounds



like heresy but I have seen it work" (*Mercury Hour* 25, 39, April 1980). US astrologer Tracy Marks calls it "an extraordinary oracular device which really works" (promotional flyer for Astro Dice 1980). Similarly, Sophia Mason's 1994 book *Card Reading for Astrologers* uses a regular deck of cards spread in the formation of a horoscope, using 12 houses and a centre card to qualify the reading. "You will find the outcome and accuracy of each card

reading uncanny in their results" (from Mason's book list). **Comment** But unless dice or cards are deliberately manipulated or have an innate bias, they can be shown to conform to chance. If astrologers can invest what is known to be chance with meaning, we should not be surprised that actual charts can also be seen to contain meaning even if none genuinely exists.

7.2.1980.2 Schäck/Hof chart method for N is not useful

Martin Boot, *Tijdschrift Astrologie* 4(2), 5-9, 1980.

A test of the little-known method of chart interpretation given in the 1968 book *Rationale Astrologie: Rechnerische Deutung des Horoskops. Nach dem naturwissenschaftlichen Test von*

Diplomphysiker Dr. phil. W. Hof by German astrologer Elisabeth Schäck [Rational Astrology: Arithmetical Interpretation of Horoscopes based on the Scientific Test of Dr W Hof]. Essentially each planetary nature (divided into four types derived from graphology) is said to be given by totalling the number of signs that the 10 natal planets and Moon's node are away from the sign ruled by each body, which sign depends on whether the body is direct or retrograde. Also involved is a 12th body whose calculation is not clearly explained. Thus the total for the Sun is said to indicate the person's emotional stability N or neuroticism. The author applied the method to 84 representative subjects born 1909-1978 (39 male, 45 female) and calculated their totals for the Sun. The results indicated that:

- 9 were stable vital (emotional, strongly instinctive, reliable).
- 38 were unstable vital (artistic, weakly instinctive, unreliable).
- 36 were stable rational (scientific, spiritually sick, unreliable).
- 1 was unstable rational (abstract, spiritually healthy, reliable).

The author concludes that neither the distribution of results nor the interpretations make much sense, so the method is of little value. C Kuypers in *Wetenschap & Astrologie* 5(1), 18-19, 1981 agrees that the method is not clearly derived, but says Boot cannot assume that the distribution should be close to random for each of the four types. Boot agrees (p.19), which is why he has made a further test (see next summary).

7.2.1981.1 Schäck/Hof method fails test of 100 subjects

Martin Boot, *Wetenschap & Astrologie* 5(1), 15-17, 1981.

The Schäck/Hof method (see above) was applied to the birth charts of 50 artists and 50 scientists, all taken at random from *Who's Who*. The distribution of results was 5-20-23-2 and 8-26-15-1 respectively, both similar to the 9-38-36-1 obtained above, and both contrary to the known large difference between artists and scientists. This confirms that the method is of little value. Editor Wout Heukelom (pp.19-21) notes that planets alone, sampled over a suitably large time period, will give the expected distribution of results, but Schäck/Hof have not investigated this, nor have they described how their four types can be independently measured. It might therefore be more useful to test methods that have involved independent measures, such as Jack Chandu's *Kosmo Diagnostic Analysis System* based on Jungian typology (said to be 75% accurate, which means that results still require the "finishing touch of the astrologer").

Comment No independent test of Chandu's system has appeared in print but links with Jungian typology are tested in 7.1.1993.1.

7.2.1984.1 Use of astrology in counselling

Anonymous, *AinO* 8(2), back cover, 1984. Summary of a 1983 draft of 56 pages prepared by Geoffrey Dean and collaborators with 87 references. Now of mainly historical value in showing what a literature search could uncover.

They find that: (1) Astrology is an effective tool for counselling because it provides a good focus for discussion, is highly personal, and creates good rapport. (2) At least 18 different ways such as Barnum and placebo effects can persuade clients that astrology works, none of which require astrology to be true. (3) Blind trials show that clients are not able to distinguish between authentic and control interpretations. A pilot study of 22 adult clients found that interpretations were equally well accepted when the charts were deliberately reversed, for example when Sun square Jupiter was replaced by Sun trine Saturn, which shows that authentic charts are not essential to the counselling process. (4) Astrological counselling is best described as a projective technique, with a clear distinction between its potential therapeutic value and its lack of factual validity. **Comment** All points are still valid today.

7.2.1984.2 Applying logarithmic time to astrology

AT Mann, *Life Time Astrology* 1984. Astrology is necessarily highly symbolic, so why should it always view time as linear?

People can perceive the passage of time differently depending on circumstances, but in general it seems to speed up as we get older. So we have less time to experience the passage

of time. US astrologer Tad Mann symbolically fits the three stages of human life described by the Swiss psychologist Jean Piaget (gestation, childhood, maturity) to a logarithmic scale of

Mann's symbolism		Reality	
One lunar month is 29.531 days		?	
↓ 29.531 days →		10000 lunar months	
9		810 years	
8		Maturity	
7	1000 lunar months	10000 lunar months	
6	77 years	81 years	
5			
4	Childhood	Childhood	
3	100 lunar months	100 lunar months	
2	7.7 years	8.1 years	
Asc			
12	Gestation	Gestation	
11	10 lunar months	10 lunar months	
10	9 months	9.7 months	
9		?	
↑		1 lunar month	
House cusp		29.531 days	

10, 100, 1000 lunar months based on one month = 28 days as in the left diagram. But the fit is inexact – one lunar month (the period between successive new moons) averages 29.531 days, not 28 days, giving the periods shown on the right.

Mann then transfers the former periods to the birth chart, with conception at the cusp of the ninth house, birth at the Ascendant, and maturity lasting from the cusp of the fifth house until death at the cusp of the ninth house again, as shown on the far left of the diagram. A person's age determines their position on the birth chart circle, against which natal aspects can be read, and also transits corresponding to any point in life.

Comment When drawn in Mann's beautiful orthogonal format, the logarithmic *chart* (p.47) is visually mesmerising, like a 3D mandala. But the logarithmic *idea* is problematic because by definition there is no origin (ie zero) to match the start of life. Nor is there a clear fit to the majority of humans whose gestation is not exactly ten lunar months (see 8.5.5), nor will

1000 lunar months fit the variety of human lifespans during history, nor (if the logarithmic principle be taken to its logical conclusion) can there be a fit to the unbounded periods before and after the nominated 10, 100, 1000 periods. It is here that Mann sees the period following death as *Transcendence* (p.47), and fits it between the 9th and 12th houses previously occupied by 10 lunar months of gestation but now apparently lasting for 10,000 lunar months. Here his symbolism has overcome any difficulties raised by physics. In effect the problematic mysteries of his approach are conveniently explained by other mysteries.

Mann has developed an approach to age-related chart interpretation that is very different from Ptolemy's approach to the "seven ages of man" in his *Tetrabiblos*, where the ages are ruled by the Moon (babyhood), Mercury (childhood), Venus (youth to age 22), Sun (early manhood), Mars (later manhood to age 56), Jupiter (full maturity), and Saturn (years remaining from age 69). But Mann has assumed that both the natal and logarithmic charts are valid without making any attempt to verify this empirically, or even to suggest how this might be done. Instead he hides behind a smokescreen of science (for example by comparing his logarithmic spiral to the DNA spiral, which of course is not logarithmic) while extending his speculations into the afterlife and reincarnation, the last in connection with Buddhist beliefs. In short Mann makes many unproven assumptions without supporting evidence, which unfortunately reduces his otherwise ingenious approach to just another exercise in speculation.

7.2.1985.1 Resolving the disagreement on fixed stars

Felix Jay PhD, *Astrological Journal* 27(3), 140-144 and 27(4), 207-214, 1985. A scholarly study.

The author starts by quoting the surveys in *Recent Advances* 1977:246-253) that reveal wide disagreement over number, aspects, orb, declination, and influence. Vivian E Robson's 1923 book *Fixed Stars & Constellations in Astrology* lists 110 fixed stars "that have been mentioned in astrological literature" (p.106), orbs range up to 7.5° (effectively 9.5 – 2 x magnitude, p.103) for conjunction and opposition, and declination is of doubtful relevance (p.93). Ebertin-Hoffman's 1971 book *Fixed Stars* lists 73 fixed stars, and says that orbs should be "no more than 0.5°" (p.10), only the conjunction should be used, and "practice shows that declination [which for most stars is large] does not appear to matter at all" (p.11). Jay comments that the use of Robson's large orbs "leads to absurdity" because it produces so many contacts that "it is possible to confirm practically everything" (p.211). Jay has no desire to enter the debate on

symbolism versus statistics, but feels that "observation and the collection of data are permissible in any field of human thought" (p.142).

Jay begins his research with an ephemeris of 1353 fixed stars, including 55 nebulae and clusters, and 1000 reasonably reliable horoscopes. He does not study aspects with Pluto or house cusps, nor directions, transits, midpoints, or horary indications. He studies aspects to the Moon and angles only if the birth time was not in doubt. The orb is generally 0.5°. He concludes that some but not all traditional claims have been confirmed: "declination may be ignored and it is latitude [distance from the ecliptic] that matters", and stars with a latitude over 40° N or S should be "treated with the utmost caution" (p.144). A planet's magnitude has no effect, but stellar effects increase with magnitude (ignore anything under magnitude 4.6), and decrease with latitude (p.209). Generally only conjunctions are effective. Parallels of declination are "most powerful" (p.214). Overall the stars "form a kind of back-cloth" to the natal stage drama which "on some occasions overshadow the drama itself" (p.214).

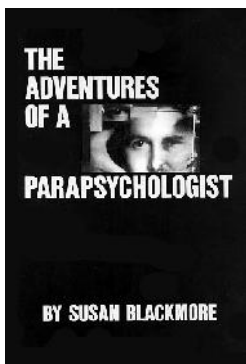
Comment Jay does not say, but his study must have taken a year or more of time. By astrological standards it is a worthy investigation of a difficult area. By scientific standards it is a useful pilot study with well-chosen criteria, but its lack of controls and lack of probability calculations make the results difficult to interpret. Thus probability calculations show that Robson's orbs for his 110 stars cover 333° of a chart's 360°, making it $333/360 = 92.5\%$ certain that every planet will be conjunct a star, whereas Ebertin's orbs for the same 110 stars cover 94° of a chart's 360°, making it $1 - (266/360)^{10} = 95\%$ certain that at least one of the ten planets will be conjunct a star. So we must ask why the effect of such a pervasive presence has not been noticed by working astrologers (who generally do not use stars despite insisting that only the whole chart will do). And if stars are valid, shouldn't their midpoints also be valid? (100 stars generate about 10^4 midpoints, or one for every two minutes of longitude, which even in astrology is clearly absurd.) None of the few statistical tests of stars have shown convincing evidence of their validity (from *Recent Advances* 1977:251-252).

7.2.1986.1 Ambiguity gives the appearance of validity

Martin Boot, *AinO* 1(1), 34-39, 1986.

Again and again research into astrology has failed to support its claims. This is probably because the chart symbolism is so ambiguous that astrologers can fit it to any situation, thus giving the appearance of validity even when none exists. Therefore research needs a new approach that differs from those usually used in psychology. That is, we have to investigate how symbols work. Guidance can be obtained from the use of symbols in art and literature.

Comment The author does not suggest specific investigations.



7.2.1986.2 A lesson from Tarot cards

Susan Blackmore, *The Adventures of a Parapsychologist* 1986:61. And recycled personal communications 2014.

First some Tarot background from Fred Gettings (1937-2013). He was a British Yorkshire-born art historian and prolific author of books on art history, occult topics, and astrology. His books include *The Hand and the Horoscope* 1973, *Fate and Prediction: An Historical Compendium of Astrology, Palmistry & Tarot* 1980, the scholarly *Arkana Dictionary of Astrology* 1990, and (under the pen-name David Ovason) *History of the Horoscope* 2005. The Tarot section in *Fate and Prediction* is detailed, referenced, and backed by a huge experience. He comments:

The Tarot pack is a set of cards which may be used either for divination, or as a philosophical machine for answering almost any kind of question put to it by a medium or someone familiar with its powerful symbolism. ... As a technique for looking into the future, the Tarot set offers possibilities not contained in other predictive methods. It is virtually unique in that anyone may learn to use it after only a few weeks of study, augmented by a little experience; though of course, as with all arts, many years of study and practice are necessary before full proficiency may be attained. ...

Indeed, the most important single practical virtue of the Tarot is that it offers excellent opportunities for those who do not have the time or inclination to study occult matters deeply, but who nevertheless wish to acquire a working technique by which special symbols may be manipulated, with a view to contacting the subconscious levels within the self. ... The essential difference between the Tarot and, say, astrology as instruments of divination is more than merely one of convenience; it is also a question of scope (p.155).

By which he means that one chart underpins mostly everything whereas the Tarot requires a fresh spread each time (its meaning depends on the order of the cards as much as on the individual cards). Re learning time, role of the subconscious, and books, he comments:

It is extremely unlikely that anyone would be able to interpret horoscopes usefully and accurately without at least three or four years' careful study of astrology: on the other hand, it is possible to learn how to operate the Tarot cards after only a few weeks' study and practice (p.156). In the ordinary way, that is to say in an ordinary state of consciousness, man is not able to make contact with the world of his subconscious – nor can he see the world as it really is. ... In its methods the Tarot resembles all great divinatory techniques, such as the Chinese *I Ching*, which use sticks; the Arabic *Geomancy*, using stones; and the ancient, world-wide astrological systems, which use complex symbols and numbers.

In technique, however, the Tarot remains splendidly isolated, by virtue of its intrinsic simplicity as a divinatory method. This by no means implies that the cards themselves are simple, for they are in fact extremely complex ... the pregnant symbols, glyphs and graphic structures constantly bewilder the historian and surprise the diviner, yet never fail to enchant the laymen (p.159). There are very many books dealing with the Tarot, most of them extremely bad, many of them harmful (p.292).



Gettings sees the Tarot as divination rooted in the human subconscious (and astrology as celestial influences p.320). But in her 1983 book *Le Tarot Psychologique: Miroir de Soi*, Canadian psychotherapist Dr Denise Roussel dismisses the role of divination. She sees the Tarot as using only the projections of the client, not the clairvoyance of the reader (p.148). The client shuffles the pack, lays out 13 cards face down, reverses one at a time, and focuses on each revealed image in a context set by the card position. Here are examples of Roussel's card positions:

1 = chief concerns. 2 = same but hidden. 4 = what is beneficial. 5 = what is difficult.

Clients end up seeing themselves and their problems in a new way. The same card can evoke different responses in different clients. So it is the client who personalises the cards and gives them meaning. In other words the whole exercise rests on projection, which is more potent than it may seem. Roussel comments:

After having made more than five hundred psychological tarots, I do not remember a single occasion where a significant and strong bond could not be established between the image presented and the put question (p.249).

The assumption is that we project our private feelings and needs on to the accommodating Tarot vagueness and reveal them in our responses. If asked what we see in these images, and we see only violence, then we might be judged antisocial and in need of treatment. However, what we project may not reflect our enduring personality but merely our artistic skills or the film we saw last night. So the assumption is open to doubt. Nevertheless Tarot cards are obviously impersonal -- a point easily demonstrated by their failure to show the same pattern when dealt twice. But the cards seem personal because Tarot symbols are not arbitrary. They were chosen for the responses they evoke, and over time they have gained a huge richness and depth. So almost anyone can look at the cards and find a reflection of their own situation. Much the same could be said of astrology (and graphology, palmistry, phrenology, tea leaves, etc). Projection certainly works! Nevertheless Tarot readers generally insist (with Gettings) that some paranormal process or subconscious divination is involved. Now over to Blackmore:

Parapsychologist Susan Blackmore had a reputation for being an excellent Tarot reader. She was a firm believer, and had used the cards for herself and others for nearly eight years:

And time and time again the cards had impressed me. Something interesting was obviously going on. I wasn't quite sure what, but there was something. ... the main thing was that I believed the cards worked (*The Adventures of a Parapsychologist* 1986:61).

Blackmore began to think she might have genuine psychic gifts. So like psychologist Ray Hyman in 7.2.1977.2 she did something every Tarot reader should do but never does. She devised:

a simple experiment to test whether the Tarot cards work normally or paranormally. ... There were two sessions. Each of the ten subjects had two readings, an "ordinary" reading and a "test" or controlled reading (p.63, the subjects were volunteers from one of her parapsychology classes).

The *ordinary* readings were made by Blackmore sitting with each subject:

After the reading was over they had to rate it on a scale from 1 (totally incorrect) to 7 (totally correct). Since there was one card representing the future, most of them felt they couldn't give a score of 7. Most of them put 6! (p.63).

The *test* readings were made without Blackmore seeing the subject. Instead an assistant sat with each subject in a quiet room, and asked them to do what they would normally do for any Tarot reading, namely relax, think about themselves, shuffle the cards, and cut them three times with the left hand. The assistant then laid out the top ten cards, recorded their order, and coded it with a letter (A to J). The codes and subjects' names were kept separately in a safe place. In due course the ten coded card orders were given to Blackmore, who:

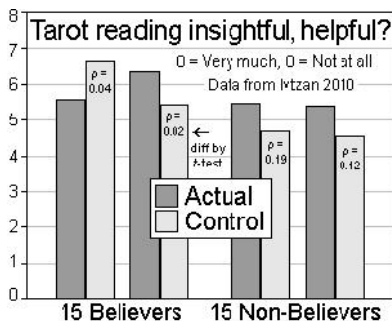
found myself a quiet, uninterrupted evening and set myself to do the ten readings. I sat quietly in my study at home with my old worn and beloved pack of cards. They were the same cards [my assistant] used – the only time I have lent them to anyone else. I took the first list of ten cards, imagined I had someone sitting there with me, and laid out the cards. I went through in my mind, just as I would in an ordinary reading, what all the cards meant. Then I wrote it down as clearly as I could and went on to the next. Later on I typed up the ten readings and gave each of them a number (1–10). I made a list of which number related to which letter and kept that sealed in an envelope (p.64).

Later the subjects met as a group. They had to read all the test readings, rate each one as they had for the ordinary readings, pick the one they thought was theirs, and put the rest in order from best fit (1) to worst fit (10). According to chance the average position should be 5.5 but it was actually much better, namely 4, a statistically significant difference. But the statistical test assumed the ratings were independent, whereas the subjects knew each other, so their ratings might not be entirely independent. It seemed a rather trivial objection. Nevertheless Blackmore repeated the test with subjects who did not know each other.

This time the results were no better than chance. But perhaps paranormal effects could not be captured using subjects with no particular interest in the Tarot. So again Blackmore repeated the test, this time by mail using interested parapsychologists as subjects. It all went well:

except for the results; they were just about at chance level. These special subjects were unable to pick out their own reading from among all the others (p.70, for details *Journal of the Society for Psychical Research* 52, 225-244, 1983).

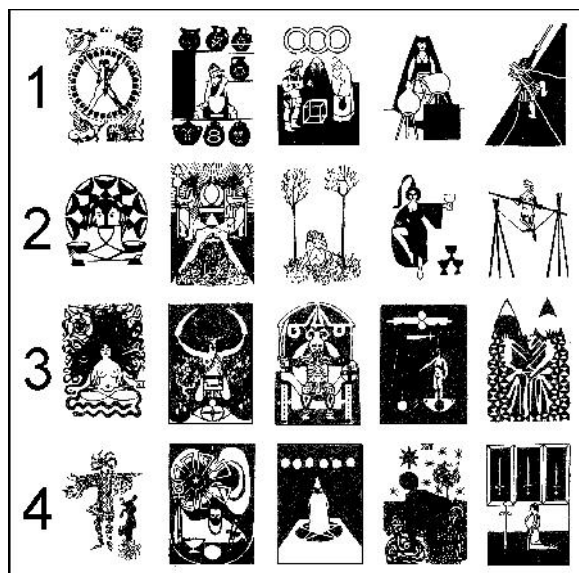
The early success of Blackmore's Tarot readings indicated that she was cold reading without even trying. The shuffling, layout, and rich Tarot traditions had nothing to do with it. Nor did subconscious processes. The cards were just a misdirection, clouds in which to see faces.



Itai Itzhan, an experienced Tarot reader, disagrees (*Exploring possible direct effects of PK upon the environment*, PhD thesis, University of London 2010). So he made 2 tests each of 30 students (mean age 23; 7 and 8 were male) divided by Thalbourne's Sheep-Goat test into 15 paranormal believers and 15 non-believers. Test #2 used a fresh pack of cards to avoid possible artifacts from wear marks on card surfaces. Each subject shuffled the pack, dealt five cards face down in a diamond layout, and left the room. An assistant dealt a control layout from the bottom of the pack, placed it left or right at random, then carefully repositioned both layouts. The subject returned with Itzhan, received a reading for each layout always starting on the left, and rated each for insight and helpfulness. Conflicting results (see diagram) supported Blackmore.

Similar results had been reported earlier by US psychologist Andrew Neher for tests in which subjects were unable to identify their own Tarot readings better than chance. He concluded:

there is no adequate evidence in support of paranormal processes in [Tarot] readings ... However, this does not mean that readings are worthless; ... viewed as tools for the projection and understanding of the content of our own unconscious, readings can be very useful (from his *The Psychology of Transcendence* 1980:242).

**Try this for yourself**

Although a great variety of themes can be readily linked to a single image, the reverse process of deciding which image best fits a variety of themes is much more difficult. The figure shows four rows of Hurley Tarot images (from Roussel 1983:116-117) that are linked to these four themes:

A Achieve. **B** Be organized.
C Comprehend. **D** Seek pleasure.

Which row of images is the best fit to each theme?
 Answer according to Roussel is at the bottom of next page.

Comment It seems likely that the I Ching may also depend on projection. In 2012 French I Ching practitioner Anael Assier with 16 years of experience attempted to predict the odd-even roll of a die when shaken at least five times in an opaque container before witnesses in a remote location under blind conditions. Of 150 predictions 50 were indefinite and 57 were

hits, not significantly different ($p = 0.10$) from the 50 hits expected by chance (effect size $r = 0.10$). From www.zetetique.fr/index.php/ in 2016.

7.2.1987.1 Use an interactional approach with clients

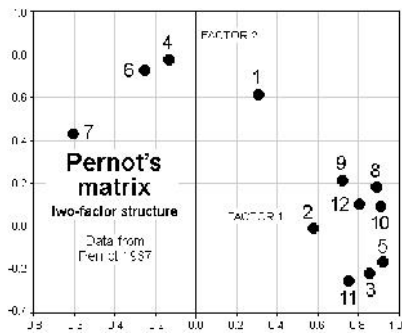
Frans Pernot, *AinO* 2(2), 32-40, 1987 and 3(1), 21-35, 1988 and 3(2), 18-33, 1988. See also next summary.

Astrology has no physical explanation. Current investigations are unsuitable because they focus on personality and ignore situation. So chart readings for clients should use an interactional approach: **(1)** The client describes himself and his situation in his own words. **(2)** The result is compared to the birth chart to give the client insight into his personality and problems. **(3)** Solutions are worked out. The author accepts that this interactional approach does not allow a clear test of astrological claims. Nevertheless it allows a test of the benefits experienced by the client. **Comment** Essentially through seeing faces in clouds.

7.2.1987.2 An approach via self image, outer image, situation

Frans Pernot. Read at the 6th International Astrological Research Conference, London, 20-22 Nov 1987. Details from the conference report *Correlation* 7(2), 2-8, 1987:7 and author's conference handouts. Based on his thesis *Blueprint for an astrological model of the personality*, University of Nijmegen, Netherlands.

It is remarkable that most empirical research offers no support for the claimed links between psychological and astrological factors. Why should this be? To me it is because such research does not do justice to the complexity of astrology. For example planet-sign-house-aspect combinations have traditional meanings that go well beyond trait theories of personality, that is, they *potentially* have more explanatory power. So I suggest relating astrology not to traits but to the interaction of three components – person (self-image), personality (outer image), and situation – which then relate directly to planet (how I see myself), sign (how others see me), and house (the situations in my life). It suggests a totally new way of using birth charts to help self-development. The first step is for you to generate positive and negative scores for the interaction in your birth chart between **(1)** each house principle as experienced by you, and **(2)** each sign principle as experienced by you. For example if I estimate the score between my 5th house and Libra to be 5+ and 1–, it means I estimate they have 5 agreeing principles and 1 conflicting principle. The next step is to discuss the resulting 12×12 matrix of scores with your astrologer to gain knowledge of yourself. **Comment** Similar models have been proposed by others. What makes this one different is the involvement of numerical scores in a 12×12 matrix to keep everything on the rails. The author gives an example of a completed 12×12 matrix of scores, together with the correlations between each item. But he does not make



the obvious next step (factor analysis of the correlation matrix). When this is done it reveals a two-factor structure that equates to E (eg activity, talk) and N (eg anxiety), which respectively explain 75% and 25% of the variance:

Pernot's 12 items (here identified by the related house numbers) break down into two clear factors. Factor 1 equates to E and Factor 2 equates to N. The items cluster close to the ends of the axes, confirming the explanatory power of the two factors, except for item 7 ("I want more freedom in relationship to my partner") which is between the two but is still distant from the origin. Thus the links with E and N are generally strong.

The above result does not support the idea that the complexity of astrology has any advantage over the simplicity of E and N, let alone over the Big Five. If the 12 sign-dynamics or 12 house-dynamics were real attributes of people instead of astrological imaginings, they would shine through in factor analyses of human behaviour, ie they would point to the presence of 12 factors. Large numbers of such analyses have been reported but with no hint of support for 12 factors. Unfortunately the author does not test his idea, so it becomes yet another astro speculation left hanging. Indeed, the sheer complexity of astrology may get in the way of genuine self-knowledge. But it need not get in the way of research because there are standard approaches for dealing with such complexity, for example by testing major factors before minor, or simple factors before complex.

7.2.1987.3 Horary astrology is unreliable

Martin Boot, *AinO* 2(2), 26-29, 1987.

Horary predictions are unreliable. For example, according to precisely applied textbook rules, not a single house should have been sold worldwide in recent weeks, but I know of at least two houses that were sold locally in that period. **Comment** For follow-ups see 7.2.1988.3-4.

7.2.1987.4 Testing clients face-to-face with reversed charts

Geoffrey Dean, Does Astrology Need to be True? Part 2. *Skeptical Inquirer* 11(3), 257-266, 1987 and unpublished notes. A common argument by astrologers against statistical tests is that an astrologer's belief in astrology is not well served by looking at *groups of people* instead of *individuals*. Regardless of that argument's validity, this study is one of the few that looks at individuals and uses a unique approach. This summary includes other relevant studies.

My study consisted of having each of 22 subjects (5 male, 17 female, mean age 31, range 21-43) rate the accuracy of an extremely concise interpretation of their birth chart. The 11 test subjects were adults paying for a chart reading (I was working as a professional at the time). The 11 controls were volunteers recruited by ads in the local occult magazine offering free readings in return for their help. All had reliable birth times, had completed the EPQ, were similar in social status and interest in astrology, and were previously unknown to me.

Each interpretation was based solely on interplanetary aspects because these generally have clear meanings, can be weighted in strength according to exactness and angularity, and are considered by many astrologers to be the most important factors in the chart. For example, US astrologer Rob Hand says "They usually speak the loudest and yield the most reliable results" (*Horoscope Symbols* 1981:25-26). Other chart factors were covered by the controls.

Each interpretation consisted of: **(1)** A list of major aspects and orbs (maximum 5°, or 1° if between planets beyond Jupiter), mean 9 per chart, range 7-14. **(2)** Their individual meanings expressed as adjectives or short statements based on a synthesis of reputable texts (Carter, Davison, Hone, Mayo), mean 22 per chart. **(3)** Their opposite meanings made similar in social desirability, mean 18 per chart. **(4)** Major aspects that were unambiguously *not present* (thus

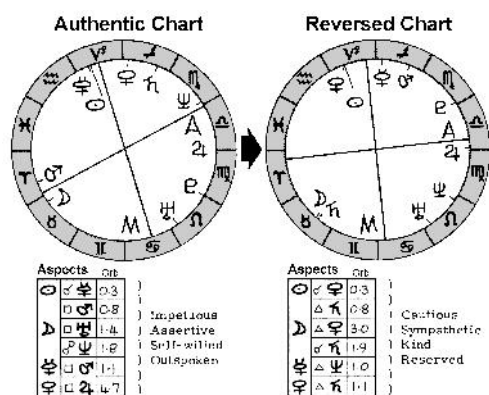
The **Tarot themes** that (according to Roussel) best fit the images are ABCD = 1342. Expect to disagree. Akansha Dutt (*An Examination of Archetypal Inference in Tarot Symbolology*. PhD thesis, Chicago 2013) asked 50 subjects to rank the best 3 of 12 archetypes (Caregiver, Creator, Destroyer, Fool, Innocent, Lover, Magician, Orphan, Ruler, Sage, Seeker, Warrior) to each of the 22 major cards. Each card was matched to typically 7 top-ranked archetypes.

MO-UR would not qualify if VE-UR was present), mean 3 per chart, range 1-5, plus meanings, mean 9 per chart. As an example of the style, the meanings for Mars conjunct Uranus were:

Meaning: impatient, mind of own, disruptive (total 3 items)

Opposite: patient, easily led, not disruptive (total 3 items)

The strength of these indications would then be strong, average, or weak, depending on the aspect's exactness and any associated angularity. The strength was explained verbally, and the subjects were instructed to score a hit only if both the meaning and strength were correct. The categories (*X*, *opposite X*, *not present*) were labelled so the subject knew which was which.



The subjects were led to believe that the chart interpretations were authentic. In fact, only test subjects received interpretations based on their actual charts. The control subjects received interpretations based on what I call "reversed charts".

A **reversed chart** is one made to be as opposite to the actual chart as possible. It has the original sun sign and angles to avoid suspicion, but has reversed indications made by juggling the planets to change key aspects, as here where Sun square Mars (indicating impetuous overactivity) becomes Sun trine Saturn (cautious control) and Moon square Uranus (wild) becomes Moon trine Venus (kind, obliging). In this way extraverted indications are substituted for introverted, stable for unstable, tough for tender, ability for inability, and so on.

The use of reversed *charts* is preferable to using actual charts with reversed *interpretations* because it allows the reader (in this case, me) to proceed normally without the need for pre-tense – an important consideration in a face-to-face situation. Some charts are too ambiguous to be adequately reversed, so such cases were not included among my 22 subjects.

Each subject came separately for their session, which took place informally in a pleasant book-lined room typical of the average astrologer's office. Each session consisted of:

(1) Presentation of the chart together with an explanation of how it works and the need to test it rigorously before its indications can be accepted. For control subjects this testing was presented as the object of the research. (2) A rating by the subject of their interpretation. Barnum effects and other sources of judgement error were explained and used to justify the format. In each case I took the subject through the interpretation word by word, explaining the principles behind each factor, clarifying any words that were not clear, and making sure they rated each word or statement. Rating was on a 3-point scale correct/uncertain/incorrect. To make the test as rigorous as possible, an item was rated as correct only if both meaning and strength were correct.

(3) The subject then reviewed their ratings as a whole to resolve any uncertainties and any internal conflict (this was to conform to the dictum that no factor be judged in isolation), and made whatever changes were necessary. Most subjects changed nothing, the rest changed only one or two ratings. At which point the rest of the reading (which was why they came) could proceed. I made no attempt to hurry the session, which generally lasted one to two hours. All subjects found the rating procedure to be simple and straightforward, and all seemed well satisfied with their readings. For example one test subject revealed she had previously undergone nine months of psychiatric treatment, and had learned less about herself during that time than during half an hour of chart discussion, as a result of which she voluntarily doubled the fee.

In this test the meanings were made as clear and concise as possible, and half the charts were made as wrong as possible. According to astrology the reversed charts should have been conspicuously wrong. But the reversed charts were rated just as highly as authentic charts:

Charts	Items rated by 11 subjects	Number* of hits	Hits %	Range
Authentic	261 meanings	250	96	90-100
	213 opposites	25	12	0-37
	81 not present	15	19	0-62
Reversed	214 meanings	207	97	90-100
	186 opposites	29	16	6-22
	117 not present	23	20	0-50

*Item was a hit if correct and a miss if uncertain or incorrect.

The outcome was much the same when only ratings involving angularity were considered. Five subjects in each set of 11 had a high or low score on at least two dimensions of the EPQ. A comparison between the EPQ scores and ratings showed that, as expected, extreme scorers were more resistant to rating themselves as the opposite. Nevertheless it was still surprisingly easy, and overall the ratings by extreme subjects were no different from those by non-extreme subjects. It was especially easy with high P subjects, most of whom identified with being low P, probably because low P (gentle, altruistic, tender-minded) is more socially desirable than high P (domineering, self-interested, tough-minded). More on social desirability below.

The relationship between the above ratings and categories was extremely strong:

Rating	Meanings	Opposites plus Not Present	
Correct	457	92	
Incorrect and uncertain	18	505	phi=0.80 p=10 ⁻¹⁵⁰ df=1

In fact the results were so consistent and clear-cut that plans for further tests (which required a full day's work for each subject) were abandoned. However, before we can believe these results, we have to be sure of two things: (1) That my personal presence did not bias the subjects' ratings. Fortunately this can be checked against an earlier published study of mine involving similar ratings done by mail, ie in my absence, and therefore free from such bias (*Recent Advances* 1977: 39). In this study the average hit rate indicated by 44 subjects was 95%, or almost exactly the same as the 96% in the present study. So any bias was not appreciable. (2) That the results cannot be explained by other chart factors, such as signs and houses, or by subjects preferring desirable descriptions (generous, serious) to undesirable ones (extravagant, grim). A close look at the individual ratings shows this to be the case. The interpretations below are verbatim but have been condensed where necessary to fit the space:

AUTHENTIC CHARTS

Subject agreed with this (= meaning of aspect actually present)	And disagreed with this (= meaning opposite to aspect actually present)	Aspect actually present*
Self-willed, pig-headed, tense	Calm, diplomatic, not tense	SO-UR
Imprudent, extreme, restless	Restrained, not restless	MO-JU
Erratic, lacks confidence	Calm, confident	MO-UR
Confused, overly imaginative	Methodical, not imaginative	ME-NE
Active, overly scattered	Patient, persistent	MA-JU
Irritable, disruptive	Even, not disruptive	MA-UR
Forceful, overdoes things	Moderate, not forceful	MA-PL

*All are hard aspects and all are exact within 3°.

According to astrology their effect should be strong.

REVERSED CHARTS

Subject agreed with this (= meaning of aspect supposedly present)	And disagreed with this (= meaning of aspect actually present)	Aspect actually present*
Well-directed, organized	Impetuous, overactive, scattered	SO-MA
Considerate, self-effacing	Forceful, self-centred	SO-PL
Mind separate from feelings	Mind linked to feelings	MO-ME
Emotionally reserved, calm	Outgoing, moody	MO-JU
Restless mind, innovative	Methodical mind, cautious	ME-SA
Steady mind, overcautious	Restless mind, scattered	ME-UR
Cautious, well-directed	Impulsive, scattered	MA-JU

*None have contrary indications by sign, house, or aspect elsewhere in the chart. All except MO-ME are hard aspects and most are exact within 2°. According to astrology their effect should be extremely strong.

The authentic examples show that *unpleasant* interpretations can be accepted, suggesting that belief in astrology can be stronger than social desirability. The reversed examples show that unambiguously *wrong* interpretations can be accepted, suggesting that the belief itself can be stronger than any astrological effect. So what do these results tell us?

Reversed charts and cognitive dissonance

The subjects clearly believed that their charts provided true descriptions of themselves even when, according to astrology, the descriptions could not have been more wrong. This finding is consistent with Niehenke's results for aspects vs questionnaire responses for 3290 subjects (7.6.1987.4), Neher's results for numerology, palmistry, Tarot, and the I Ching (8.6.8), Blackmore's results for Tarot (7.2.1986.2), Dlhopsky's results for numerology (*Skeptical Inquirer* 7(3), 53-56, 1983), Hyman's results for reversed palmistry interpretations (7.2.1977.2), the results from 13 studies showing clients cannot significantly pick their own interpretation out of typically 3-5 when cues are absent (8.6.10), and of course wrong charts (8.9.9). I myself have given astrologers a chart that was supposedly mine, but was actually that of someone whose EPI scores were extreme and the opposite of mine, and their interpretations of this chart always fitted me perfectly.

The relevance here of non-astrological techniques will be evident from their similar claims:

Astrology: "The client's character and life story inevitably conform to the range of potentials symbolized by the [horoscope], often in extraordinary specific ways" (Perry, *Correlation* 13(1), 32-36, 1994:35). **Graphology:** "Your handwriting is all-revealing. To the trained eye it lays open your secret mind. Every whirl or line you pen exposes your true character and personality" (Marne, *The Concise Graphology Notebook* 1988:2). **Numerology:** "From any individual's name it is possible to derive a number (or numbers) that will ... provide a key to unlock the secrets of his or her character and destiny" (King, *The Encyclopedia of Fortune-Telling* 1999:115). **Palmistry:** "A study of the hand tells much about ... vitality ... the emotional nature, love potential ... the will and individuality ... success in business ... talent ... creativity ... fame ... Self-fulfilment, travel, life experience, spiritual development" (Joyce Wilson, *The Complete Book of Palmistry* 1971:7-8). **Tarot:** "A set of cards which may be used either for divination, or as a philosophical machine for answering almost any kind of question ... [and] for looking into the future ... the Tarot cards always give a pertinent response" (Gettings, *The Book of Tarot* 1980:intro). **Phrenology:** "The phrenologist has shown that he is able to read character like an open book, and to lay bare the hidden springs of conduct with an accuracy that the most intimate friends cannot approach" (Alfred Russel Wallace, cited in Severn, *Popular Phrenology* 1913:6).

Grange (unpublished study, Loughborough University of Technology 1982) compared the acceptance by 24 social psychology students and 27 art-and-design students of (1) the 13 original Barnum statements taken from a newsstand sun-sign astrology book (Forer, *Journal of abnormal and social psychology* 44, 118-123, 1949), (2) 13 statements based on their EPQ responses, (3) an interpretation of their timed birth chart in 13 statements by a professional astrologer, and (4) an interpretation of their handwriting in 13 statements by a professional graphologist. The students received their statements two months after the initial approach and had to rank them in order of accuracy. Typical statements were:

Barnum: You have a tendency to be critical of yourself. Security is one of your major goals in life.

EPQ: Your mood often goes up and down. You are a talkative person. Your feelings are easily hurt.

Astrology: You have an individual unconventional approach to life. You like to keep out of the limelight.

Graphology: You want to be independent and self-reliant. You are more sensitive than you like to discuss.

The mean rankings (1=top, 4=bottom) were:

	By 24 psych students			By 27 art students		
	Mean	SD	p*	Mean	SD	p*
EPQ	1.92	0.97	10 ⁻⁶	1.96	0.92	10 ⁻⁴
Graphology	2.33	1.13	0.0003	2.26	1.17	0.005
Barnum	2.33	1.05	0.0002	2.63	0.95	0.21
Astrology	3.42	0.78		3.15	1.04	

*Versus astrology by two-tailed t-test

Astrology was ranked by both groups as less accurate than Barnum and graphology (ranked more or less equal), which in turn were ranked as less accurate than the EPQ (which was necessarily specific). This suggests that clear interpretations can be so wrong that astrologers

would be hard pressed to survive without support from Barnum and other hidden persuaders.

But what about social desirability, which was enough to make most people think they were like Aquarius (see 7.1.1997.1)? Despite my efforts to impose equality, *Opposite-X* still trended to be less desirable than *X* because there are no equally desirable opposites to things like *kind*, *responsible*, *considerate*. Similarly *Not Present* tended to be less desirable because it was the only thing that was unambiguously absent. Nevertheless social undesirability cannot explain the success of reversed charts. In this case it is clearly not a major player.

But why should subjects see reversed birth charts as being valid? The most likely explanation seems to be cognitive dissonance, the need to reduce any conflict (dissonance) between our thoughts and actions. Unlike the students in Grange's test, the subjects in my test probably believed in astrology, and were motivated to avoid the pain of having their beliefs shattered. Therefore the interpretation test became a search (albeit unconscious) for personal attributes to confirm what the birth chart supposedly indicated. Given the variability of human nature (we are all everything at some time or another) the search could hardly fail.

On being confronted by these results I immediately stopped reading charts for money. However, I did provide a free chart reading for two female subjects (known to each other but not to me) who insisted on attending together, for whom (unknown to them) I had switched the chart interpretations. The results were the same: The subjects agreed with what seemed to be theirs (but were actually not theirs), and disagreed with what seemed to be not theirs (but were actually theirs). Moreover each subject agreed with the other's assessment.

Comment The findings are supported by the results of Kallai (*Psychological factors that influence the belief in horoscopes*, Masters thesis, Department of Psychology, The Hebrew University, Jerusalem 1985), who asked 101 male and female subjects aged 15 to 16 to judge the agreement between four supposedly astrological predictions and entries in a diary. Each prediction consisted of four statements, such as "You'll become more popular this week". The diary contained typically seven entries for each prediction and was written so that one statement was confirmed ("I appeared on TV"), one was half confirmed, one was disproved, and one was not referred to. The predictions were rated successful more often by believers in astrology than by nonbelievers, showing that what you believe affects what you see.

So when testing astrology, what kind of questions do we tend to choose? To find out, Glick and Snyder (*Humanist*, May/June 1986:20-25, 50) asked 12 believers and 14 skeptics to each test the validity of a brief chart interpretation (it indicated that the subject was highly extraverted) by asking the subject 12 questions chosen from a list of 11 confirming (extraverted) questions, 10 disconfirming (introverted) questions, and 5 neutral questions. The subject was in fact a confederate who gave predetermined answers matching the slant of the questions. Both believers and skeptics chose on average just over 7 confirming questions, 3 disconfirming questions, and less than 2 neutral questions. In other words, regardless of their stake in the outcome, they tended to test the interpretation with questions that were bound to confirm it.

For skeptics, the greater the number of confirming questions they asked (which of course increased the amount of confirming information they received), the more accurate they rated the chart interpretation, the correlation being an impressive $r = 0.75$ – in fact two skeptics gave higher ratings than any believer. But for believers there was no correlation. All of them rated the interpretation as accurate or mostly accurate, regardless of the number of confirming questions asked, so their ratings bore little or no relation to the information received. Their subjective impression or belief carried the day (does this remind us of astrologers?).

Ignoring bad news Russell and Jones (*Personality and Social Psychology Bulletin* 6, 83-88, 1980) observed similar results for belief in ESP among 50 college students divided equally into believers and skeptics. For skeptics, about 90% accurately remembered an article on ESP

regardless of whether it was favourable or unfavourable. For believers, 100% accurately remembered the favourable article but less than 40% accurately remembered the unfavourable article; 16% actually remembered it as favourable. The believers who read the unfavourable article were far more upset than the skeptics who read the favourable article.

So it seems that belief in astrology arises because (1) astrological interpretations tend to be universally valid, and (2) we tend to test an interpretation with strategies that are bound to confirm it. If we are basically a skeptic, our belief will be modified by subsequent evidence. If we are basically a believer, our belief will persist because apparently positive evidence will be remembered, whereas negative evidence will be ignored. On this basis, regardless of the evidence, astrology is not going to go away.

Don't blame gullibility It would be wrong to conclude that the perceived validity of an astrological consultation is due to nothing more than simple-minded gullibility. Words and sentences do not exist like chunks of rock but have to be interpreted before they mean anything. Thus the message received by clients is determined by the experiences and expectations they draw upon to give it meaning. Even with a transcript we can never experience the interpretation the way the client did – what may seem facile to us ("You have problems with money") may be deeply meaningful to the client. So no third-party description can possibly recreate what a chart interpretation actually feels like.

In other words, fundamental to our understanding of astrology (and of anything else for that matter) is the problem of human inference, that is, our ability as human beings to correctly judge what is going on. Because our everyday judgment is so successful most of the time, it never occurs to us that it might be grossly inadequate in certain situations, just as it never occurs to astrologers to test controls. Thus we see that the interpretation fits and conclude that astrology works. It could hardly be simpler, more convincing, and also more wrong.

Astrologers take every advantage of their inferential deficiencies. To them everything is a correspondence and nothing is a coincidence. So if we want to know what is *really* going on, we must be aware of our inferential liabilities and act accordingly – which of course is what the scientific approach is all about.

7.2.1988.1 Houses / History of astrological computing

Michael Munkasey (guest editor), *NCGR Journal* Winter 1988-1989. One of the *NCGR Journal*'s thickest issues.

Over the years US astrologer and computer programmer Michael Munkasey (pages 37-45) found 22 different house systems described in the astrological literature. Houses are needed to show positions that vary during the course of 24 hours. They are generated in two ways. (1) Direct division of the ecliptic, which has 9 systems differing in how they define their starting point. (2) Division of a great circle (one passing through the Earth's centre) then project on to the ecliptic, which has 13 systems differing in choice of great circle and how projected. Direct division gives systems that generally differ far more than projected systems even though each can be supported by appropriate symbolism, as shown below:

Direct division by dividing 360° equally

Earth house (cusp 1 = 0 Libra)

Equal house (cusp 1 = Ascendant)

MC house (same as Equal house)

Moon house (cusp 10 = MO)

Solar house (cusp 1 = SO)

Sun house (cusp 4 = SO)

Direct division by trisecting arcs

Natural (cusp 1 = Asc at sunrise, cusp 7 = Asc at sunset)

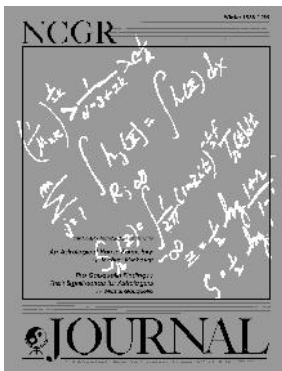
Porphyr (cusp 1 = Ascendant, cusp 10 = MC)

Natural Graduation (like Porphyry but division of the arcs is adjusted to give house sizes that vary more evenly)

Projected systems can be classified similarly by equal division and trisection:

Equal division of horizon, equator or prime vertical before projection

Arcturan, Campanus, Horizontal, Meridian, Morinus, Octopos (gives just 8 houses, ideal for persons fearful of 12th house), Radiant (same as Horizontal), Zariel (same as Meridian).



Trisection of the ascendant diurnal arc before projection

Alcabitius declination, Alcabitius semi-arc, Classical (same as Alcabitius declination but cusp 1 = Ascendant - 5°, used in antiquity to correct for atmospheric refraction which keeps a body visible when it is actually below the visible horizon), Koch, Placidus, Regiomontanus, Topocentric.

Munkasey gives step-by-step instructions for calculating the house cusps for each of the 13 projection systems. Three more systems in which cusps mark the middle of houses are described in 7.7.2005.1. As for which house system is the best, Munkasey comments:

There is no simple answer to that question. However, I can give you two good thoughts on the subject: use that house system which divides space in such a way that the planets fall into houses which describe their function in the nature of the

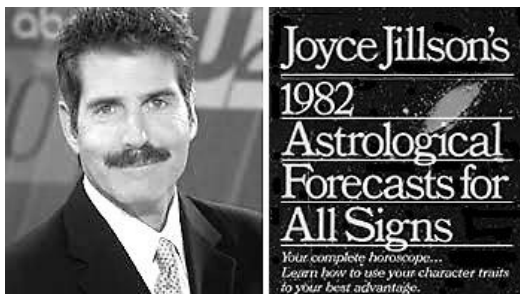
event; and, use that house system which gives cusps against which you can time events. That is, if the Moon function of this event is described well by a Moon in eighth house, then the house system you choose should not place the Moon in the seventh or ninth, or some house other than eighth house. ... In general I find that for natal events the Placidian system works well and fulfills these two guidelines. *Why it works well I do not know. ... For events other than natal, other house systems seem to work better. Some house systems also work well with natal events (p.38).*

Computing. The issue contains how-I-got-started articles by the giants in US astrological computing including Michael Erlewine (Matrix Software, pp.90-95), Rob Hand (Astrolabe, pp.83-86), Dennis Haskell (Time Cycles, p.48), Neil Michelsen (Astro Computing Services, pp.101-105), and Mark Pottenger (CCRS, pp.53-58). Each giant had early struggles with slow computer speeds, limited storage, limited programming languages, and high costs, all of which have long ceased to be a concern. Giants in non-US computing such as Colin Miles (UK Astrocalc) and AstroDienst (Switzerland) are not mentioned.

7.2.1988.2 Are you really sure this (wrong) chart is you?

John Stossel. From his *Good Morning America*, ABC-TV show in the USA, November 1988. In it he tests not only the reactions of subjects to the same chart reading presented as supposedly theirs, but also the big-time US astrologer who wrote it. Stossel was the author of several best sellers and winner of 19 Emmys for his investigative journalism.

Joyce Jillson (1945-2004) was originally an actress, later Hollywood astrologer to the stars, official astrologer for the Los Angeles Dodgers and Twentieth Century Fox Studios (she picked favourable times for film premieres including *Star Wars*), and the writer of sun sign columns



syndicated worldwide to more than 200 newspapers and magazines. In November 1988 she very unwittingly allowed ABC-TV reporter John Stossel to show his millions of *Good Morning America* viewers just how well astrology works even with the wrong birth data.

Jillson, who charged \$200 per chart in 1988 (equivalent in 2018 to over twice this), prepared a detailed reading for a person unknown

to her whose birth data had been supplied by Stossel. He then gave a copy of the reading in a sealed envelope to each of twenty students at an adult education class learning Spanish in New York City. Each student had provided Stossel with their own birth data one week earlier.

The students, believing they were reading their own personalized horoscope, marveled at how the astrologer could know things about them that no one else could possibly know. Here are some of their comments with occasional questions in *italics* from Stossel and their answers:

- I love me. I can sense those things in me that she says here.
- I am amazed at how most of it is me, I really am. I don't know whether I was a believer or non-believer, I was kind of in the middle, but most of it is me. It really is quite amazing.
- This is most of me too.
- She hit a lot of very interesting points that nobody knows. *So nobody could have known these things, right?* Right.
- I've had this done before and it said similar things.
- I've read the same things about me in books. *But is it you?* Yes. *It's different from other people, but it's you?* Yes it is.
- Well, I think it's very accurate, characteristically about me. *And very accurate?* Oh sure.

The class were then told they had all received the same interpretation from big-time astrologer Joyce Jillson, prepared for a person born 18 December 1948 in Burbank at 11:04 pm PDST. Unknown to her, the person was Ed Kemper III, a mass murderer who killed his grandparents at 15, his mother at 24, and six women in between.

Stossel concluded that the reason why everyone agreed with the same interpretation was its generality. Supposedly unique, it was clearly a one-size-fits-all reading. He felt that Jillson may have incorrectly assumed the birth information was his own. It said things like:

not easy to get to know ... holds something back in reserve ... enormously bright ... a sense of moral propriety.

Ironically one statement fitted the authentic subject quite well, namely "takes life seriously". Stossel asked the class if the believers among them had now lost faith in astrology. In effect they said "definitely not". So he told them:

- *Apparently if you're prone to believing in this kind of thing, you'll believe no matter what.*
- One replied: Everybody's going to receive from it whatever they need to receive from it. And that's how it is. I mean, there are many paths, and people choose astrology as their particular path.
- Another said: I still believe because these characteristics *are* mine.

Stossel concluded that Jillson was good at writing things that people want to believe. Later he confronted Jillson on camera, pointing out how general her interpretation was:

- *Anybody would say this was about them.*
- Jillson: I don't think anyone would say it's about them.
- *So if I showed this to other people and told them it was theirs, they would not say "wow, this is about me"?*
- Jillson: I don't know. I mean, it depends on how you presented it. My mission in life is to help people attain their goals. I'm one of the partners they can have to help them get what they want.

Still on camera, he revealed the results of the experiment, whereupon she resorted to bluster and self-justification. Stossel found it unconvincing and concluded:

This shows it's a hustle, and you make money by writing general things that everybody believes is about them.

All this had no noticeable effect on Jillson's popularity. In 2003 she suffered what the *Skeptical Inquirer* November/December 2003:9 called "the ultimate embarrassment for an astrologer". In her syndicated column of 12 September 2003, Jillson had given a glowing chart reading for TV star John Ritter. whose "Virgo sun sign helps keep his career ticking", even though he had died the day before. She herself died of kidney failure a year later aged 59.

Comment The same persuasive nature of generalities has been repeatedly demonstrated in tests of the Barnum effect see 9.9.6 ff, in similar tests of astrology such as those described in 2.2, and in the many occasions where astrologers have inadvertently used wrong charts as described in 8.9.9. In other words, *perceived accuracy is unreliable*. Studies like these have shown again and again that people find astrology's insights just as convincing when, unknown to them, the wrong birth data are used. Where does that leave astrology?

7.2.1988.3 No, horary astrology is reliable

Corry Sietsma, *AinO* 3(1), 47-51, 1988.

A critique of Martin Boot's article in 7.2.1987.3. The female author says that Boot's horary interpretations are based on ordinary *natal* chart interpretation but should have been based on *horary* chart interpretation. Contrary to what Boot says, correct horary interpretation of his example charts supports horary claims. **Comment** Boot rejected her argument, see next.

7.2.1988.4 Horary astrology is still unreliable

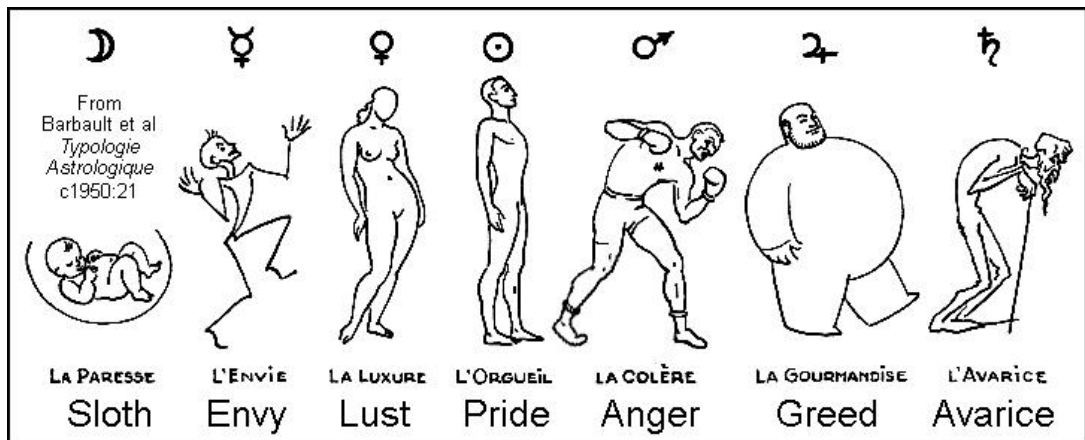
Martin Boot, *AinO* 3(2) & 4(1), 2-12, 1988.

Previously the author showed that, when applied by precise textbook rules, precise predictions by horary astrology are not possible. Later, Corry Sietsma argued that Boot was mistaken. She reads in his two example charts the exact events in question. In the present article Sietsma's reasoning is rebutted. Even though she distinguishes between ordinary and horary charts, she is not correctly applying the rules of horary astrology, which is why she can read anything she likes into the two charts. Thus Sietsma joins the multitude of astrologers who afterwards fit the chart to the event. The author then proposes a serious study into the validity of horary and electional astrology, which would also be of consequence for the astrologers who participated.

Comment Such a study is seriously overdue but has yet to be made. Tests of horary astrology are described in 8.8.5.

7.2.1988.5 Use of cartoons

One popular feature of *Astrologie in Onderzoek* that set it apart from the competition was its use of astrology-related cartoons. For example *AinO*'s joint issue 3(2) & 4(1) 1988 featured no less than six Doonesbury cartoons. Cartoon characters are less common in astrology books except perhaps French ones. Here is an interesting example from André Barbault et al, c1950:



Planetary correspondences to the Seven Deadly Sins seem at first sight to be ingenious and appealing. But would the owners of birth charts with an especially strong planet welcome being stereotyped in this way? Are the indicated correspondences supported by empirical tests? The facts are crucial, but the associated text remains silent.

7.2.1988.6 Are element interpretations in common use today?

Anne and Colin Martindale, Metaphorical equivalence of [physical] elements and temperaments: Empirical studies of Bachelard's theory of imagination. *Journal of Personality and Social Psychology* 55(5), 836-848, 1988. At first sight this study may seem absurd. But wait until you see the results, which start at the top of next page.

Astrological ideas have passed into our vocabulary in words such as *aspect*, *consider*, *disaster*, and in adjectives (all dating from 1500 or earlier) that reveal the associated planetary nature, namely *solitary*, *lunatic*, *mercurial*, *venereal*, *martial*, *jovial*, and *saturnine*. The same natures appear almost unchanged in the familiar rhyme:

Monday's child (MO) is fair of face, Tuesday's child (MA) is full of grace, Wednesday's child (ME) is solemn and sad, Thursday's child (JU) is merry and glad, Friday's child (VE) is loving and giving, Saturday's child (SA) works hard for a living, Sunday's child (SO) is blithe, bonny and wise (Opie and Tatum, *A Dictionary of Superstitions* 1989:27). Except that Western folklore has different versions of the rhyme with different planetary meanings, see 7.1.1954.1.

But there is no obvious passing into our vocabulary of individual sign meanings, possibly because signs used to be less important than planets, or they were too numerous, or their meanings were not useful (as when Leo is described by William Lilly 1647 as fiery, hot, dry, diurnal, commanding, bestial, barren, and masculine). But what about *element* meanings?



The four speculative elements (Fire, Earth, Air, Water) were directly linked to the four temperaments (respectively Choleric, Melancholic, Sanguine, Phlegmatic), whose meanings were based on the four main types of person actually observed by the ancient Greeks and which are still clearly observable today, see 7.6.2017.1. So the authors wondered if people today could detect a correspondence between temperament and element.

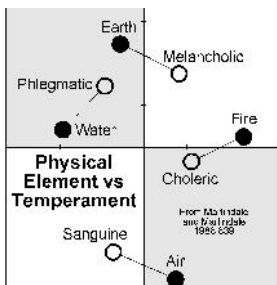
The four temperaments in a woodcut from *Physiognomische Fragmente ...* 1775-1778 by the Swiss physiognomist Johann Kaspar Lavater (1741-1801).

To find out, they gave 36 undergraduates (17 male) in an introductory psychology course at the University of Maine two sets of 40 cards each. One set showed words describing actual *physical* elements (not Greek *speculative* elements), one per card and ten per element. The other set (in a different colour to avoid confusion between sets) showed words describing the temperaments, one per card and ten per temperament. Typical words were:

Fire	Earth	Air	Water	Choleric	Melancholic	Sanguine	Phlegmatic
Burn	Dig	Breeze	Bath	Active	Anxious	Carefree	Calm
Flame	Ground	Cloud	Lake	Bossy	Suspicious	Easy-going	Controlled
Heat	Mineral	Wind	Rain	Greedy	Worried	Sociable	Unemotional

Element words were relevant to *physical* elements. Temperament words were from Galen, Kant, and Eysenck.

Subjects had to sort the combined cards into as many alike groups as made sense. Each group had to include at least one card from each set otherwise no comparisons – the whole point of the exercise – would be possible. The average number of groups was 9.0 sd 6.8, N = 36.



The idea of relating personality to *physical* words may seem absurd, and many subjects claimed they were unaware of correspondences between the two sets, which for them made sorting difficult. Nevertheless overall there was good agreement, and the 80 x 80 matrix based on their sortings reduced to this two-dimensional plot, where the plotted points are the centre of each cluster and the closer they are the better their agreement. Together they account for 96.9% of the variance. The authors note that the similarity to Greek theory is unremarkable (they got out what they put in).

However, although not clear-cut, Air (in agreement with Greek theory) is diagonally opposite Earth, but Fire (contrary to Greek theory) is not diagonally opposite Water, albeit nearly so. The authors note that some associations such as anger and heat make sense, but most of the observed correspondences cannot be plausibly explained in this way:

For example, rainy wet weather is known for producing feelings of dreariness. Tears also have an obvious relation to water. Nevertheless [as shown in the diagram], people do not pair melancholic characteristics with Water words but with Earth words (p.846). [This reflects the same mismatch discussed in 3.9]

Can this element-temperament link be detected in literary writings? In works published during 1938-1960, the French philosopher and literary critic Gaston Bachelard (1884-1962) claimed that French poets used element and temperament words interchangeably as metaphors for each other. To test this claim, the authors computer analysed samples of French poetry by 21 French poets born between 1770 and 1909 for element and temperament content. The ratings were then compared with judgements by four nationally recognised experts on 19th and 20th century French literature who were asked to nominate the temperament most typical of each poet's work. Most found the task difficult because poets can emphasise different temperaments in different works. Nevertheless their agreement averaged a reasonable $r = 0.58$. The average

From left:: Correct answers are Sanguine, Melancholic, Phlegmatic, Choleric.

breakdown by poet was choleric 15%, sanguine 17%, phlegmatic 19%, melancholic 37%, uncertain 12%. The temperament counts declined strongly over the timespan of 1770 through 1909, the correlation vs birthdate being typically $r = -0.73$. On average 1.75% of words were classified as elements and 1.55% as temperaments.

Factor analysis of the results showed that the poets used element and temperament words interchangeably as metaphors for each other, exactly as Gaston Bachelard had claimed.

The authors conclude:

When people combine words denoting physical objects with trait words, they combine them in a manner that is consistent with ancient Greek element-temperament correspondences. That people consistently equate elements and temperaments in this way seems quite odd. Frankly, we do not really know why it is the case (p.846).

However, they point out that many words still apply to both element and temperament, and we continue to understand metaphors even when they no longer apply to both. Also metaphors are very much a part of everyday adult thinking. So to explain their results :

One reason may be that our everyday thought is much more metaphorical than is commonly believed (p.847)

Comment Which would be consistent with a general inclination towards symbolism rather than science, and why for most people (especially astrologers) critical thinking is not second nature and has to be learned. Proficiency may takes years of work, and reading a book is not enough – it needs practice, practice, practice. It focuses on *whether a belief is worth believing*. As Bertrand Russell said, what we need is not the will to believe but the will to find out.



Phrenologists claimed to tell temperament from the appearance. These examples of each temperament are from Sizer and Drayton *Heads and Faces and how to study them* 1899:19-20.

Can you tell which is which? Answers at bottom of previous page. Less than 4 hits means you failed.

7.2.1989.1 How to improve the accuracy of readings

D Faust and B Nurcombe. Improving the accuracy of clinical judgment. *Psychiatry* 52, 197-208, 1989. The authors describe evidence-based ways of improving clinical reasoning skills that in principle should also work for astrologers. For clinician read astrologer, for clinical judgement read astrological judgement, for clinic read consulting room.

More than 100 studies (now 200+ see 8.9.2.2) have shown that, regardless of topic, predictions that involve measuring X and Y are generally more accurate than those involving intuition (ie just experience and guesswork). Those who intuitively claim the opposite invariably:

dismiss [such] studies with spurious arguments – subjects were too inexperienced or inexpert; the clinicians studied did not have access to all the information needed; or the results do not apply to a particular school of thought. In reality, research has consistently shown that judgemental accuracy is not systematically related to level of training, experience, amount of information available to the clinician, or the clinician's discipline.

In fact all predictions regardless of topic have to be based on multiple present-absent variables and judgements of magnitude that are generally more reliably done by an equation because it cannot be biased by any beguiling but infrequent pattern that comes into view. *So we should use a variable only if it increases accuracy. Otherwise ignore it.* More specifically we should:

- Identify the 2–4 most valid variables.
- Weight each variable equally.
- Use them only if their accuracy exceeds that of the base rate (natural frequency in the target population).

In other words predictive accuracy is largely a matter of exclusion. Instead of trying to include every possible variable, we should ignore all but the most valid. We should accept that the more we want to achieve, the greater the risk of ruining useful rules. The authors conclude:

Intuitive tinkering rarely works ... Clinicians should not depend solely on intuition ... decision aids are required.

Comment The authors' suggestions are *largely the opposite of what most astrologers are*

taught, especially the rejection of intuition and the whole chart in favour of just 2–4 isolated chart factors. However, if (like the authors) we want *factual accuracy*, their suggestions now supported by 200+ tests demand attention, even though the tests in this book have failed to find a single chart factor that delivers results commensurate with the claims. Indeed, even when much testing seemed to identify likely factors, their use still failed to deliver, see 8.6.11.

But if (unlike the authors) we want *meaning*, then anything goes. We should use whatever works for our clients regardless of what snooty Virgo astrologers might say. For there is much safety in numbers – as clouds increase in size so does our chance of seeing meaningful faces. In other words the chart is investing chance with a meaning it would not otherwise have. It means astrology is divination, see 7.2.2003.1.

In a review of holistic judgement, psychologist John Ruscio points out that many astrologers:

embrace holism by asserting that they must make use of the whole chart ... because the horoscope is a whole system in which every part is influenced by every other part (*Scientific Review of Mental Health Practice* 2(1), 38-48, 2003).

which leads to a crippling paradox – there are far more unique charts than the number of people who have ever lived, so no astrologer could possibly know where to start. Furthermore:

Clinicians who appeal to the virtues of holistic judgment place themselves in at least as untenable a position as do modern astrologers. The knowledge base required for truly holistic judgments ... is most unlikely to exist. Even if it did, unaided human judgment is incapable of dealing effectively with large amounts of complex information [while] a simple mechanical combination of a handful of relevant variables is often sufficient to achieve predictive validity.

Here the focus has returned to matters of factual accuracy. As Ruscio points out:

[Intuitive] judgements – and even less so holistic claims – are rarely tolerated when large sums of money are at stake. For example when making decisions involving loans, insurance rates, or gambling odds, actuarial decision making is the norm. [And] it is a poor reflection on mental health practices whenever professionals do not insist upon the best available methods until threatened with legal actions or financial recriminations for using suboptimal methods.

It has also returned to the understanding of astrology being addressed in this book, and to the crucial necessity of separating facts from meaning. For more on this see 8.9.2 ff.

7.2.1989.2 Medical astrology texts are in disagreement

Martin Boot, *AinO* 4(2), 12-16, 1989.

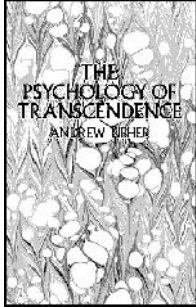
Astrologers assume that zodiac signs rule certain parts of the body and that the planets rule certain organs, therefore they believe that sickness can be seen in birth charts. But examination of four specialised texts (Cornell 1972, Ebertin 1983, Jansky 1981, van Wageningen 1933/1976) shows that their claims are not consistent within each text. They also contradict each other, cannot be falsified, and have no scientific basis. Even from a philosophical point of view it is hard to accept that birth charts can be a reliable means of medical diagnosis. The author concludes that medical astrology should not be practised. **Comment** To no avail even though the same disagreement has been noted by others, eg by Diane Cramer, review of 13 medical astrology books, *NCGR Journal* 4(2), 27-29, Winter 1985-1986. Books on medical astrology (contents 100% symbolic, 0% empirical) still appear regularly, see 7.2.2006.1, as do issues of the AA's *Astrology and Medicine Newsletter* founded in 1997. Unfortunately empirical tests by others tend to be simplistic. For example Micic et al (*International Journal of Surgery* 10(8), S9, 2012) analysed the birth dates of 1458 Welsh patients with breast disease during 2008-2011. The proportions with a Cancer sun sign were: benign 7.83%, pre-invasive malignancy 8.76%, malignant 9.25%; other signs respectively 6.01–10.97%, 5.84–11.68%, 7.71–9.91%. The difference between Cancer and the other signs was not significant.

7.2.1990.1 An open challenge to National Public Radio

Purcell Styber, *Kosmos* 19(4), 34-43, 1990.

To Morning Edition, National Public Radio, Washington DC. You recently broadcast a tacky segment on astrology that shows you know nothing about it. The astrology you refuse to accept (newspaper horoscopes) is the same astrology that genuine astrologers refuse to accept.

There is a large body of evidence suggesting that genuine astrology cannot be dismissed. John Nelson's radio studies and Vernon Clark's matching experiments, to mention only two. But try it for yourself. Choose two people you know, send me their birth data, and I will send you a four-page psychological analysis without knowing their names or even seeing them. Since people with fixed opinions are rarely receptive to contrary evidence, I will understand if I do not hear from you. **Comment** No response was reported. Styber's two examples of evidence were known at the time (but evidently not by him) to rest on artifacts.



7.2.1990.2 Can astrology reveal Hidden Realities?

Andrew Neher. *The Psychology of Transcendence*. 2nd Edition 1990.

After reviewing existing tests of astrology (pp.229-239), and the results of his own tests (subjects were given several Tarot, I Ching, numerology or palmistry readings and had to pick the one that was theirs, but no result was better than chance, pp.239-242), Neher (1937-2020) concludes:

this does not mean that readings are worthless; ... viewed as tools for the projection and understanding of the content of our own unconscious, readings can be very useful (p.242).

The reason is simple:

a generalized personality description is an ideal stimulus for the operation of projection [which is] the ascription of our own characteristics to an external stimulus. Furthermore, the less defined the stimulus, the more easily we can project. That is, given the description of *any* personality trait, all of us could think of how it applies to us, in some ways, under some circumstances. Thus a generalized personality description can operate in the same fashion as any projective personality measure, as a mirror to our inner selves. Likewise, of course, projection occurs when we interpret readings concerning past events or future happenings. People who are not sufficiently aware of their own tendency to project may be mystified by what appears to be a strangely perceptive reading and consequently may ascribe some kind of "power" to the stars, a deck of cards, or other objects. [Conversely] a description derived from a valid personality test is likely to be sufficiently specific, as well as threatening to our preconceived image of ourselves, so that we fail to "project" ourselves into it and thus fail to see its greater validity (p.233).

The values and dangers of uninformed and uncritical belief will be apparent. Either way, there is no evidence that projection is a gateway to actual hidden realities, only to hidden fantasies.

Comment Remarkably there are two Forewords to Neher's book, one from Professor Robert Morris, Koestler Chair of Parapsychology, University of Edinburgh, the other from Professor Ray Hyman, Department of Psychology, University of Oregon. Their comments are insightful:

[The book] does present some very useful, very legitimate alternative explanations for what have been construed as "psychic" events (Morris p.x). You can learn to cultivate and profit from transcendental experience ... if you learn how to separate the sense from the nonsense made in behalf of such claims (Hyman p.xii).

7.2.1990.3 About personal work with astrology

Based on Charles Harvey and Michael Harding, *Working with Astrology: The Psychology of Harmonics, Midpoints and Astro*Carto*Graphy* 1990. Harvey was for many years President of the AA. Harding was then Chairman of the AA and of the Association of Professional Astrologers. Both were full-time consultant astrologers since 1966 and 1983 respectively. We start by looking at how research and attacks on astrology have affected astrological consultations:

Many scientists believe that if people were educated in science then a pseudoscience like astrology would cease to exist. However, as pointed out by UK journalist Alison Brooks:

They don't understand that astrology's appeal does not come from its truth (*New Scientist* 145(1963), 46, 1995).

Let's see how well this point emerges in consulting rooms:

Personal work with astrology can be broadly divided into three types. Each type blends into the next so the classification is basically one of emphasis: **(1) Chart reading.** Astrologer talks, client listens. Usually one session. **(2) Chart exploration.** Astrologer and client explore chart together. Often several sessions. **(3) Chart therapy.** Psychotherapist uses astrology on the side as an adjunct to orthodox techniques. Client has serious problems and will usually require ongoing sessions. Not a job for astrologers who are not licensed counsellors.

UK astrologer Roy Alexander (*The Astrology of Choice: A Counseling Approach*. 1983:83) suggests as a rule of thumb that a *reading* becomes an *exploration* when the client does more than half the talking. But it will depend on the

client. With inhibited clients the astrologer may have to do most of the talking just to draw them out.

Chart reading is traditional and is what most people used to receive when they visited an astrologer. *Chart exploration* is now standard practice, albeit not universally in all countries. *Chart therapy* is rare. Only a tiny (but non-zero) proportion of licensed psychotherapists use astrology on the side. In broad terms a consultation now looks something like this:

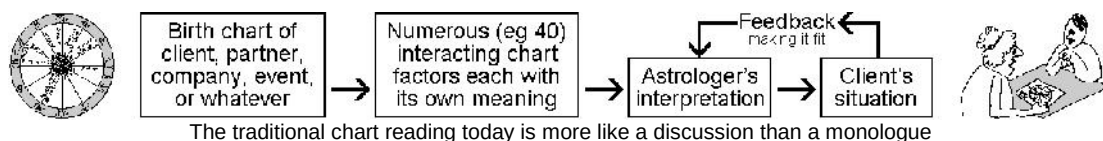
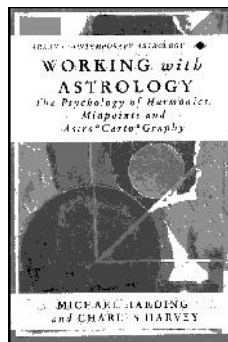


Chart exploration had its beginnings in the 1960s in the person-centred astrology promoted by Dane Rudhyar (1895-1985), a disciple of occultist Alice Bailey (1880-1949), in reaction to the failure of ordinary astrology in the USA to satisfy spiritual needs. For example in his 1973 booklet *An attempt at formulating minimal requirements for the practice of astrology*, he says:

What is required is NOT whether a particular type of system, or an interpretation of the basic data provided by astrology, is valid in itself ... but whether the [astrologer has] a clear sense of his responsibility to the client whose mind and feelings may be deeply affected by what is told him. ... The human quality of the relationship brought about by the astrologer's personality and his feeling-responses is often what is most important (pp.20,22).

On the other hand, Rudhyar tended to overemphasise the materialism of traditional astrology, and many astrologers outside the USA would have denied that their astrology was other than person-centred. Thus in her 1982 book *Astrological Counselling: A Basic Guide to Astrological Themes in Person-to-Person Understanding*, licensed UK counsellor Christina Rose was able to report "immense changes" in the practice of astrology away from *chart reading* to *chart exploration*. Working astrologers in the UK had begun to see that a chart reading as defined above could be unhelpful because the client was too dependent on the all-knowing astrologer (but not of course if clients were merely curious about astrology). And in 1988 the UK Faculty of Astrological Studies offered a two-year post-diploma counselling course to blend astrology and counselling (but after a few years it had to be discontinued due to lack of interest).



The techniques of chart interpretation were also changing for reasons eloquently described by Harvey and Harding:

All astrological methods are techniques and unless the astrologer is aware of *why* he or she uses one particular technique rather than another there is a real danger that the resulting chart is the creation of ideas which are not understood or else actually erroneous. If we do not understand what we are doing, and why we are doing it, then it becomes increasingly unlikely that we shall be able to understand what results from it (p.3).

Harvey points out that the traditional birth chart by definition omits most of the relationships between planets in favour of simplifying a few of them, thus losing information of potential importance to an astrologer:

This is not an exercise in semantics or a rarefied argument over abstruse astronomical facts, but an illustration of the most fundamental issue in astrology: how we lay out our information and the criteria we use for the methods we employ will finitely determine what we can expect to discover. In other words, what you get is what you see (p.3).

Here the information he is now including comes from midpoints, three harmonic charts, and Astro*Carto*Graphy maps. Although he ignores houses, the factors available for interpretation (typically 40 in a traditional chart) are increased roughly tenfold. Which is seen as beneficial:

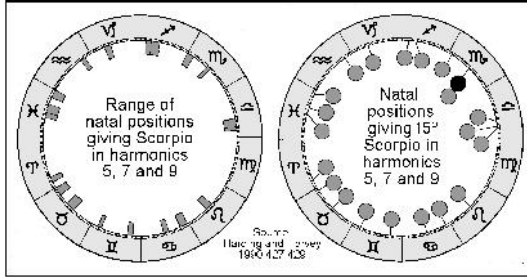
Learning to assimilate and integrate the new types of information produced by harmonics and midpoints does require considerable practice, and the development of what at first will be unfamiliar perspectives. This is closely analogous to the new skills that the doctor has to develop when first working with X-rays, brain scans, or ultra-sound. Images which at first seem incomprehensible, with practice soon become indispensable information (p.390).

The increase is seen as beneficial simply because the emphasis is now on *chart exploration*, so anything that extends the search area has to be good for the client. Harvey explains:

The well-trying methods of traditional astrology ... can serve us well, provided we recognize their limitations. Planets, traditional aspects, houses, signs, can tell us a great deal about an individual and something of their broad psychology. These factors will often, though not always, sound out the main themes in the life (p.391).

He then cites the case of Hitler, whose traditional chart is famously incompatible with Hitler's talent for tyranny and destruction, see 7.2.1972.2 for a description and 11.3 for a cartoon:

It must be seriously doubted whether many traditional students of astrology, asked for vocational guidance by young Adolf Hitler, would have contradicted his wish to become an architect and artist. How many would have suggested that instead he might consider developing his gifts of leadership and histrionics and think about becoming a political revolutionary or a theatrical impresario? What traditional astrologer would note any special ability in this chart for tapping into and mobilizing the deepest forces of the collective? But if, as we would contend, the traditional approach



to Hitler's chart does not reveal such potential then the astrologer not only cannot draw attention to it, but, even more importantly, he cannot suggest a spectrum of alternative ways in which the kind of energies present in Hitler's chart might be used (p.392).

Harding and Harvey's way of showing the extent to which harmonic charts can multiply traditional indications.

Could Hitler's poor fit be due to poor synthesis of traditional chart factors? No, because:

Most people are complex, not simple; multifaceted and contradictory, not single-minded and clear-cut. The chart can show us those contradictions and different facets but it cannot through some magic formula give us an accurate and definitive answer as to "what a person is really like". ... Just as two skilled biographers using the same material can come to quite contrary views about their subject, so too different astrologers studying the same chart will bring their own viewpoints to bear. In short, to spend any great time wrestling to "synthesize" is often a futile exercise, for you may be attempting to do what the client still has not done over several decades (pp.393-394).

Indeed, the *unsynthesized* parts will be a good guide to the inner client:

We may ask ourselves what kind of images such a mix conjures up? A tough businessman and philanthropic socialite? A Friar Tuck monastic, aesthetic, hard fighting, bon viveur? A nature-loving hermit, scientist/artist, and environmentalist? A Wild West gold bug, gambler, womanizer, and lone ranger who disappears between times back into the hills? Allowing images to form in this way around the combinations and sequences will enable you to feel and see the kinds of energies which this individual is constantly working with from his centre (p.403).

The astrologer is then ready for the actual chart exploration:

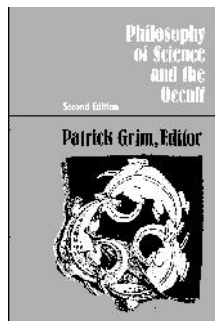
[You] present your client with an outline of the cast of characters in the client's play, as you see them, stating their outstanding characteristics and attitudes, their likely lines and the spectrum of their potentialities. ... Having established the main list of dramatis personae, the contradictions, paradoxes, light and shade that you think it may be particularly useful to consider will become evident (p.395).

Harvey concludes that this new approach has to be a good thing because:

we are moving away from the traditional astrology as a source of divination towards the creation of a recognizable knowledge system with the astrologer as a worldly professional working with symbol structures, not a priest relying on divine inspiration. This shift can only be healthy for astrology as a whole (p.426).

Comment His emphasis on knowledge implies that *truth is important*. So (to return to our opening question about whether the opposite is emerging in consulting rooms), the answer is No, at least for Harvey. On the other hand, more factors means more things to explore and an even better chance of finding combinations, contradictions, motives, potentials that the client can identify with, which then provide even more opportunities for hidden persuaders to do their work. So regardless of where *truth* stands, *meaning* is alive and well.

Thus astrologers may be happy with dismissing all criticism as ignorant and misguided, but as pointed out by Patrick Grim (ed), *Philosophy of Science and the Occult* 1990, obvious dangers still exist (which Harding and Harvey 1990:3 recognise). In a section addressed to whether astrology is a pseudoscience (pp.15-84), Grim notes that many philosophers of science take astrology to be a prime example of pseudoscience (one which pretends to rely on objective investigation and rational proof), even though they may disagree on the precise reasons:



Here it is perhaps not out of order to add that the issue of the scientific status of astrology may also be more than merely an intellectually intriguing question. We are all familiar with astrology as it appears in the apparently harmless columns of magazines and newspapers. But it should be noted that there are also astrological medical services offering diagnosis and treatment on the basis of birth charts (eg *MedScan Analysis*, described in Eileen Nauman's *The American Book of Nutrition and Medical Astrology* 1982 and sold in computerized form), and there are books such as T Patrick Davis's *Sexual Assaults: Pre-Identifying Those Vulnerable* 1978, which treats rape as a matter of astrological vulnerability to attack ("The horoscope is the only tool presently known which can be used to separate those who may be vulnerable to a sexual assault from those who would not"). If astrology *can* claim to be a science, these might therefore be scientifically vindicated. If astrology *cannot* claim to be a science, on the other hand, they might amount to quite dangerous forms of pseudoscientific fraud (p.17).

But listen to iconic anti-researcher Dennis Elwell (1930-2014) who see astrology as an alternative reality that helps each astrologer to arrive at different ideas about astrology:

It is not a matter of anything goes. Your reality must have some positive value. It must have relevance. If only within its own terms, it must be useful. How does astrology measure up to this yardstick? Does it have positive value, is it relevant, is it useful? (*Astrological Journal* 28(4), 143-151, 1986:147).



His answers are yes, yes, and yes. In other words astrology is *meaningful* and *needs* to be meaningful. But does it *need* to be *true*? Santa Claus and Superman are certainly meaningful but are not actually true. Alas, Elwell evades the issue and merely repeats the standard default:

if astrology is only part-way true, the universe is very different from what it seems (p.151).

Well, yes, but the same could also be said of Santa Claus and Superman – even if they're only part-way true the universe is very different from what it seems. Welcome to getting nowhere.

7.2.1990.4 How astrologers are deluding themselves

Terry Dwyer. Abridged from his article "Stop Deluding Yourself" in *Polarity* 1(1), August 1990, a short-lived British magazine edited by Archie Dunlop (1922–). This and the next entry bring you something almost impossible to find in astrology -- critiques by authors with years of experience and the very best astrological qualifications. Both entries uncover fatal problems in everyday practice. Neither had the slightest effect. Dwyer's personal story appears in 2.7.

My background

I practiced astrology for 13 years, taking the subject so seriously and working such long hours that I probably crammed 30 years of normal experience into that time. I was a college teacher but retired early to study astrology full time. I gained the Mayo diploma, was a Mayo School tutor for 5 years, taught astrology at summer schools, and lectured at AA conferences.

I was one of the first astrologers in the UK to buy a computer. I taught myself computing and how to write astrological programs. Soon I had written *Starword*, still the only program to perform a completely synthesised interpretation. I published a book for students *How to write an Astrological Synthesis*, plus many articles and letters in *The Astrological Journal*, for which I was Research Editor for some years. I had many clients, both face-to-face and by post, and wrote or typed literally thousands of pages of calculations and interpretations in the process. I also founded the Leicestershire Astrological Society and gave many lectures to its members.

Exhaustive tests were negative

During the course of the above activity I built up a library of some 200 books, and carefully examined every astrological concept contained in them. Always ready to try new techniques, I tested them against experience and analysed the results by computer. I have been through decanates, dwads, Arabian parts, elements, solar returns, rectification, sidereal and draconic zodiacs, harmonics, chart shapes, horary, transits, houses, composite charts . . . you name it, I have almost certainly been there. Astrology is full of crackpot ideas.

But after exhaustive tests I was forced to discard all of them. Houses and signs went fairly early. The events which Ebertin forecast for my own transits just didn't happen. I don't want to

condemn astrology completely, but in my very considerable experience it doesn't work to anything like the degree of power, or with anything like the degree of reliability, which its adherents claim for it. In the end I concluded that the effort of doing astrology is not rewarded by sufficiently worthwhile results. [For more on *Starword* and its ultimate failure see 8.6.11]

Astrologers do not like hard facts.

I also concluded that astrology is a religion, complete with received dogma. The true believer will accept no proof that contradicts his belief, and will skirt any issue which might force him to abandon it. The final straw came for me when a watertight research into the meaning of Pluto found no evidence whatsoever that Pluto has any of the meanings that are usually ascribed to it, see 7.6.1987.2. Yet the astrological fraternity go on believing that Pluto involves dark hidden power, all because Pluto was the name given by the Greeks to a totally fictitious god. It is clear that astrologers would rather put their trust in fairy tales than look at uncomfortable facts.

**Please do not
adjust your mind -
There is a fault
in Reality...**

So why did I ever believe in astrology? Because probably like most astrologers I was impressed by the sheer volume of "knowledge" available in thousands of books and from writers and teachers, all of whom seemed to know what they were talking about. I was impressed by the apparent internal logic of astrology, and although bemused by the proliferation of techniques, I imagined that all I had to do was study diligently. But when I did so I found so many mutual contradictions (conflicting house systems is an example) that I came to see that astrological techniques were more a matter of invention and opinion than of empirical discovery. Things were passed on by tradition because that was the only way it was done.

Are you deluding yourself?

To learn about self-delusion, consider the following exercises. Be warned that honesty is more difficult for astrologers than for most people. Each exercise is followed by my comments:

1. Make a list of particular meanings such as Aries or Mars.

The length of your list will tend to show how far you have studied astrology. If the list is long you are probably too uncritical and too inclined to believe everything you are told. If it is short you are either fairly new to the game, too lazy to learn much, or quite experienced and have learned that very few of the standard meanings can be relied on.

2. Now tell me how you know these meanings are true.

Possibly because of (a) apt symbolism, (b) your teacher or your textbook says so, (c) everybody says so and countless astrologers cannot be wrong, (d) your experience, (e) your research using dozens of charts so you have proven their meanings. I have given the answers in increasing order of merit, and only the last will do. More on experience later.

3. No doubt you think your interpretations are accurate. But how do you know this?

Do you just assume it? Do you ask the person whose chart you've interpreted? (Don't tell me it's your own! That never counts.) Was it because you got no negative feedback? Have you tried predictions – they are more difficult to delude yourself with. Probably the most frequent sign of astrological self-delusion is believing your interpretations are accurate. If you guess more than 50% accurate you are already deluding yourself and can only get deeper into the mire. If you guess around 25% there is some hope for you. If you guess over 80% you are beyond redemption.

4. Which is more important, logic and intellect or intuition and imagination?

If you chose the first I'm with you most of the way. We live on the earth, not in the heavens, and every bit of our interpretations must be practical, factual, and verifiable. An astrologer needs much knowledge and clear communication skills. If you chose the second you are beyond hope. "Intuition" as employed by astrologers is the kiss of death, being merely guesswork or initial hunches obstinately adhered to. The best approach is a bit of both but mostly the first.

5. Most chart factors have a great proliferation of meanings, thus Saturn = abandoned places, bad luck, bones, cold, control, lead, limitation, old age, etc etc. Is this a good or a bad thing?

It is a bad thing because it helps you prove whatever you want from a chart. The result is confusion, too much choice, and therefore lack of precision. Yes, I know the old chestnut about needing background information.

Why astrology seems to work

Look at Ptolemy's 2nd century *Tetrabiblos*, then Lilly's 17th century *Christian Astrology*, to see

how few and slender were sign meanings. Now look at Sepharial's or Leo's books to see how 19th century writers suddenly expanded these meanings using their imagination and perhaps what they thought was logic. Countless astrologers have taken these meanings on trust "because the books say so". *But numerous research studies have indicated that there is no real evidence for any of them.* No doubt astrology works for you, you get good results with your charts, and your clients say you have helped them. Here's why you helped or "helped" them:

It always helps to confide your problems to another person. Better still if that person is a good listener and appears to be on your side. Even better if that person appears to have qualifications suggesting extra knowledge. Better still if that person insists on a proper birth time, takes time to perform calculations, and charges a fee – it must be good! No matter if you offered an interpretation which is difficult to refute for various reasons such as universal validity ("you are generally patient, but can sometimes show impatience") or vagueness ("you have your own way of dealing with difficult situations") or things impossible to verify ("you are spiritually more aware than most of your fellow men"). Or maybe you flattered them with false qualities they are not going to deny. I once offered a chart interpretation to its owner for critical comments and it came back with a tick (sometimes a double tick) against every single positive quality, and a cross (plus indignant comment) against every single human fault – and this person was a very well-known astrologer! Evidently the more you practice astrology the more you want to evade anything inconvenient.

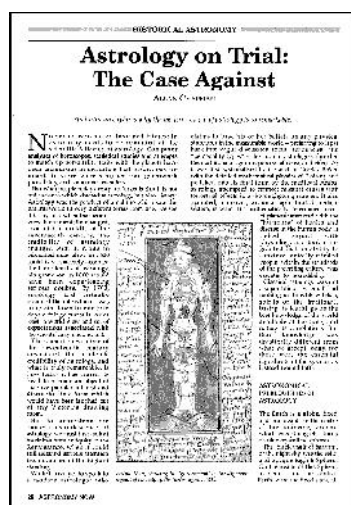
Beyond the Fringe

What can you think when you see astrologers proving they are the reincarnation of so-and-so because they can show links between the two charts (you can show links between any two charts if you are so minded), or trying to relate their dreams to astrology, or writing letters to journals about the 1000th harmonic or the effect of a Yod on spiritual development? Forget logic and intellect – astrologers would far rather swim in the Neptunian sea of the unprovable. Awkward facts are never welcome. So I have coined two tiny definitions for your amusement: "*Astronomer*: One who searches the heavens with a telescope and sometimes finds what he isn't looking for. *Astrologer*: One who searches a diagram with a fine toothcomb and always finds what he is looking for". You are not amused? Tough. As Bertrand Russell said, "*What is wanted is not the faith to believe, but the will to find out, which is the exact opposite*".

7.2.1990.5 Astrology on Trial: The Case Against

Allan Chapman, *Astronomy Now* 4(12), 28-32, 1990. With 5 history-related titles for further reading and 5 figures.

Chapman begins by reminding his readers of the importance of history:



No person who has an informed interest in astronomy needs to be reminded of the scientific fallacies of astrology. Computer analyses of horoscopes, statistical studies and attempts to match up personality traits with the planets have been unanimous in indicating that predictions are unable to score success higher than guesswork probability, and sometimes even less.

But what people today are apt to forget is that it is not only science which discredits astrology, but also history. Astrology was the product of a culture which saw the natural world in very different terms from how we see it today, and when that world view fundamentally changed around the middle of the seventeenth century, the credibility of astrology changed with it. While an educated man alive in 1600 could have sincerely accepted the basic tenets of astrology, his grandson in 1660 would have been experiencing serious doubts. By 1700, astrology had virtually assumed the role which it was to assume down to our own day; a fringe pursuit, or at least a world view and set of expectations with the scientifically uneducated (p.28)

The modern revival of astrology is therefore truly remarkable. To understand it:

We must first look at its claims from antiquity to the Renaissance, when it could still demand serious attention from scholars of the highest standing (p.28).

Much of his article is devoted to astronomical prerequisites (sun, planets, signs, aspects), links with medicine (the four humours) and metallurgy (the seven metals), and how later advances in astronomy and medicine led to satire and anti-astrological views. As for the present day:

Over the years, I have spoken to many astrologers, and have yet to find one who believes in the physical, medical and metallurgical universe which I have outlined ... When asked how they reconcile these contradictory world views, they often look confused, mumble about "psychic vibrations" or the "collective subconscious" ... and [other] ideas, most of which would have been condemned by the classically educated astrologers of the Renaissance (p.32).

He suggests several reasons for the modern revival of astrology:

- A low general knowledge of astronomy that prevents critical opinions.
- Manipulations by the media and celebrities that overwhelm formal education.
- Science is now a slogan for technical wizardry, not a means of critical scrutiny.
- The readiness of astrologers to see criticism as being due to prejudice (astronomers secretly know astrology is true but refuse to admit it) rather than a lack of evidence.
- The linking of astrology with fashionable ideas such as those of Carl Jung.

Therefore we should not be surprised by astrology's revival, and he personally does not expect any real change in the future. It is the price we pay for living in a free society. But if we are aware that science itself discredits the claims of astrology, we should not underestimate the power of history to eventually do the same:

The astronomer is aware of this fundamental shift in perspective, but the astrologer is not. But ... most of the contemporary astrologers whom I have met are less skilled at predicting fortunes than they are at making them (p.32).

Comment Not only had Allan Chapman talked to astrologers, he was also Senior Tutor at the Centre for Medieval & Renaissance Studies in Oxford and would therefore have had some claim to know what he was talking about. His comments are moderate, well-argued and even-handed, without the curt contempt characteristic of hard-nosed skeptics. Yet his article led to this furious response in the editorial of the *Astrological Journal* 33(1), 1, 1991:

It was with dismay and some disquiet that I recently discovered that [Allan Chapman] could remain so wilfully ignorant of contemporary astrology ... In his article ... there are so many factual errors and assertions/opinions which reflect his appalling lack of education in many areas, coupled with the kind of condescending confidence found in the pseudo-scientist, that you can practically hear the axe grinding. [The editorial was signed by Suzanne Lilley-Harvey]

Unfortunately we are not allowed to know what the factual errors and uneducated assertions are. His supposed ignorance is incompatible with his having spoken to many astrologers.

7.2.1991.1 Why is astrology so hard to learn?

Andrew Patterson. The following account is from an article that originally appeared in South Africa's *Astrology Today* and reprinted in *Considerations* 6(3), 5-13, 1991. Dr Patterson (now deceased) was a former engineering lecturer at the University of Witwatersrand. His interest in astrology began in the 1960s, and for many years he was a teacher and invigilator in South Africa for the UK Faculty of Astrological Studies. His scientific background resulted in that rarest of combinations – a fine critical sense plus an encyclopedic grasp of astrology – which are here applied to the challenges of learning astrology. As you read this, remember he is a teacher of astrology, not a debunking skeptic.



Astrology is more difficult to learn than anyone realizes. Probably we have all had much the same experience. You meet astrology through a friend, are intrigued, and become hooked. You start studying. But after a while you grow uneasy. It is not clear how Sun in Leo differs from Moon in Leo. When asked to describe Saturn in eighth house you are not sure where to start. All you can say about a hard aspect is that it represents a challenge, whereas an easy aspect is, well, easy. As for a quincunx, you struggle just to pronounce it.

To clear up your increasing confusion, you buy up every new book recommended by others. But they actually make your confusion worse. The reasons are simple. Just look at the delineations:

The delineations are either *all the same*, or *all different*, or *all useless*, or *all evasive*.

The delineations are all the same. They are so general that they all blur into one another (George, *A to Z Horoscope Maker and Delineator*). Sun in Aries reads the same as Moon in Aries, and there's not much to choose between Mercury, Venus, Mars, Jupiter, Saturn,

Uranus, Neptune and Pluto in Aries either (Derek & Julia Parker, *The Compleat Astrologer*). The delineations also bear a strong resemblance to Mars in 1st or 10th, as well as to nearly every Mars aspect. A delightful vagueness permeates everything, and is most noticeable in texts which come down heavily on signs, treat houses superficially, and deal with aspects very much as an afterthought (Mayo, *Teach Yourself Astrology*, Geddes *The Art of Astrology*).

The delineations are all different. This is worrying, because in your studies of other subjects you had come to accept that, although different authors may differ in detail, there was general agreement about the main bits. But not so in astrology. To illustrate my point, here are some example delineations of Sun square Saturn:

Tendency to deep-rooted inhibitions, pessimism, self-pity, needless worrying, selfishness, fears and phobias, chronic ill health (Mayo, *Teach Yourself Astrology*). Self-expression hurtfully limited. Life hard, causes self-pity. Tendency to falls, chills, orthopedic troubles (Hone, *Modern Textbook of Astrology*). A life of hardship and drudgery. Everything is earned the hard way; nothing comes freely (Sakoian & Acker, *Astrologer's Handbook*). A fear of expressing what you truly are (Arroyo, *Astrology, Karma and Transformation*). You have to learn to like yourself (Pelletier, *Planets in Aspect*). A deep feeling of inadequacy and a compulsion to achieve in compensation. The theme is loss of father, and a search to find him in some form, yet dissatisfaction and anger when you do; you seek him because you want to overthrow him (Liz Greene, *Outer Planets & their Cycles*).

The sheer variety is breathtaking! There is everything from unabashed fortune telling to Jungian-style mythology, and of course the usual hedging ("a tendency to") creeps in.

The delineations are useless. Some are amazingly general, others are amazingly specific, with every shade of grey in between. Thus Mars in Libra varies between:

the trait of self-assertion or self-distinction expresses itself in lack of commitment or generalized appeasement (Geddes, *The Art of Astrology*), and a passion for sword-dancing (Alice Howell, *Jungian Symbolism in Astrology*).

It seems impossible to believe that the authors are talking about the same thing. But both statements are equally useless. The first is too general, containing nothing that clients could recognize about themselves. The second is too specific, and you would be idiotic to offer this as a serious delineation. But there is a dilemma. Being general makes it more certain it will be right but it tells you little that is useful. Being specific makes it easier to grasp what is being said but it is more likely to be incorrect. The glib solution, as Plato and the Buddha reminded us, is to take the middle path. Exactly how we can do this with confidence is unclear.

The delineations are evasive. They convey nothing while pretending to convey everything. My pet hate is "Neptune dissolves". This is invariably delivered with a look that is simultaneously lofty and knowing, followed by a dramatic pause. Keywords are useful only if they help remembering a mass of material. Short delineations like "The False Prophet" for Jupiter square Pluto (Oken, *The Horoscope, the Road, & Its Travelers*) are not much better. But even fullness does not guarantee clarity. Consider this:

Your extreme impatience with established facts often forces you to create whatever truths require the least commitment from you (Mercury square Uranus from Pelletier, *Planets in Aspect*).

What on earth could that mean? Is it any wonder that you struggle with astrology?

Are the statements true? Ordinarily we assume that non-fiction books deal in facts, not speculations or personal opinions. But this does not apply in astrology. Sakoian and Acker warn that some of their *The Astrologer's Handbook* is speculative. Linda Goodman in *Sun Signs* says "Virgos love small animals and herb gardens" without discussing whether Virgos have been shown to love small animals or herb gardens any differently from non-Virgos. It gets even worse. Dane Rudhyar's works are pure speculation (*The Astrology of Personality*), while Martin Shulman's works (*Karmic Astrology*) and Marc Edmund Jones's *Sabian Symbols* are unashamedly derived from psychic sources.

Is there anything wrong with symbolism? If astrological statements can be drawn from speculation or intuition or the astral plane, how are they different from myths or just plain fairy stories? The default answer is that astrology is a symbolic system, in which truth is tested

by being consistent with the appropriate symbolism. So anything which passes this test is seen as true, not because it is actually true but because it could be true.

Refer back to the variety of delineations cited earlier for the Sun-Saturn square. What is the underlying symbolism? In human terms, the Sun seems to symbolize something like *Achieving*, and Saturn something like *Controlling*. When these two are in square, they over-express themselves in an attempt to defeat the influence of the other. Which leads to difficulties associated with internal conflict (feelings of inferiority, illness) or external limitations (poverty, overwork). Which is fine symbolically but not when situations demand more than vagueness. To say the reality (whatever it is) will be consistent with the symbolism is not terribly useful.

An opposing school of thought, Aristotelian rather than Platonic, insists that astrology should pass the same tests of truth as everything else. So it can at last rise above the paraphrase "there are lies, damned lies, and symbols"! In other words astrology has to be based on controlled observations not uncontrolled speculations. Personally, after many years of study and of teaching, I have to agree that astrology does not meet this requirement. Which of course helps to explain why astrology is so hard to learn.

Conclusion. Until the astrology we love develops to a point where it meets the criteria of objectivity, repeatability and consistency, we are left with a vague wishy-washy thing, capable of meaning anything you want it to mean, leading to horoscope delineations that fit equally well or equally badly every person on earth. Call it an art, a skill, a means of getting in touch with the cosmos, or a folk psychology, but until we focus much more on what actually happens when we look at horoscopes, we are failing to be intellectually honest, and should not be surprised that astrology is so hard to learn.

Comment And therefore hard to teach. But the education and training that students receive in astrology classes is not training in valid theories or evidence-based techniques but training in the *opinions* of someone with high status (ie the teacher), whose status was achieved by training in the *opinions* of a previous high-status person. And so on, perpetuating a practice ultimately based on seeing faces in clouds. A point challenged unsuccessfully in 8.9.10.2.

7.2.1992.1 Uncertain birth data of two novelists

Albert Bredehoff, *AinO* 7(1), 29, 1992. Gives details of two examples.

Novelist Simon Vestdijk (1898-1971) had a strong interest in astrology, see 7.1.1994.1. His biographer discovered that Vestdijk had reported his birth hour as 17:55 or 18:15, the correct hour being 17:30 local time on 17 October 1898 in Harlingen. Vivian Holland, son of Oscar Wilde (1854-1900) and author of *Son of Oscar Wild* was born in the first week of 1886, but the exact date is uncertain because his father and mother each thought the other would have registered it. After some weeks neither could recall it, so they settled on 3 November. This later allowed Vivian Holland to comment "one great advantage that I derive from this uncertainty is that I am completely immune from the importunities of astrologers as, far from being able to tell them the exact hour of my birth, I cannot be certain of even the exact date".

7.2.1992.2 Reducing a birth chart to a single longitude

Albert Bredehoff, *AinO* 7(2), 53, 1992.

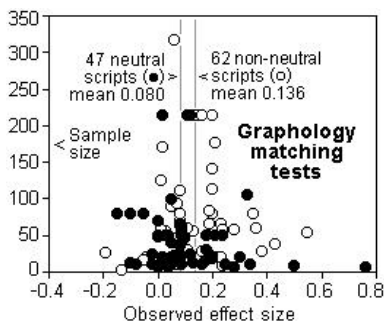
In astrology one always tries to synthesise the many chart factors into a single whole. For *N* planetary or other longitudes the mean longitude is easily obtained by adding the longitudes and dividing by *N*. One can then judge its importance by seeing if it conjoins any individual planet or angle. **Comment** The resulting "mean" may work for positions on a straight line but does it work for positions on a circle? No empirical studies have been reported. The closest we get is the cyclic index for the outer planets only, see Comment under 7.4.1993.3.

7.2.1992.3 Graphological insights into astrology

Barry Beyerstein, *The Write Stuff: Evaluations of Graphology* 1992. *Tall Tales about the Mind and Brain* 2007. Canadian neuropsychologist Barry Beyerstein was a former teenage graphologist.

He begins by pointing out that graphology (considered as 'brain writing') is more plausible than astrology. After all, an actual person, not the stars, is directly involved. Nevertheless:

Since there is no credible evidence that one's horoscope or ... a graphologists' personality sketch is a valid way of knowing what someone is really like, it would be akin to making a racist or sexist slur to treat somebody one way or another based on such flimsy suppositions (in *Tall Tales about the Mind and Brain* 2007:268).



The above lack of evidence for graphology looks like this:

Effect size vs sample size (number of scripts) for 47 studies using neutral scripts (content controlled by copying from a set text), and 62 studies that use non-neutral or uncertain scripts (content not controlled and therefore open to cues about the writer). As expected, each plot resembles an inverted funnel. Neither mean (0.080, 0.136) differs significantly from zero. The scatter is entirely explained by sampling error. Results extend more to the right of the means than to the left, suggesting that publication bias against negative results has inflated their apparent positiveness. (From *The Write Stuff: Evaluations of Graphology* 1992:293). Correction for publication bias reduces the mean effect size of 0.117 to about 0.103.

The mean effect sizes are positive but are too small to be of practical use. In other words graphology is not useful. Ironically most graphologists deny that handwriting reveals gender, but most people can tell male handwriting (it tends to be angular) from female handwriting (it tends to be rounded). In a survey of ten methods for selecting job applicants such as interviews, resumes, and personal contacts but not including astrology, graphology was the least favoured method (*Personnel Psychology* 57, 639-683, 2004:659). But there is more:

Beyerstein looked at statements made in leading graphology books and found that the interpretation of a handwriting feature is based not on controlled empirical observations but on crude resemblances (magical correspondences) between feature and human personality. For example: small writing = *modest*, large writing = *egotistical*, forward slant = *forward looking and outgoing*, backward slant = *passive and holding back from the world*. So graphology:

like astrology, is essentially a divination process where metaphorical interpretations are attributed to people by magical means (*The Write Stuff: Evaluations of Graphology* 1992:191).

He points out that, like astrology, graphology depends largely on testimonials, Barnum and other hidden persuaders, and its ability to explain away contradictions. So if the handwriting (which graphologists say cannot lie) indicates a shy inner person, the actual loud mouther is merely trying hard to compensate outwardly. Beyerstein concludes:

Graphologists' reliance on intuitively satisfying pareidolia [tendency to see recognisable images in an ambiguous object] to diagnose traits immediately brands them as holdovers from the pre-scientific era of sympathetic magic. Far from enhancing their believability, the fact that graphologists' and astrologers' signs bear an explicit symbolic resemblance to the traits they purportedly indicate actually detracts from their credibility. Modern psychology and physiology provide no reason to think valid correlates of complex traits should be so transparently obvious (p.195).

Unlike astrology, graphology requires a sample of our behaviour (in this case our handwriting) before it can proceed. In 2000 the Canadian psychologists King and Koehler found that the judgement of handwriting was dominated by magical correspondences, while the actual links had only a minor effect – a finding very relevant to astrology, for details see 7.2.2000.2.

The same dominant effect of magical correspondences exists in other areas. Consider the *Draw-A-Person* test. You draw a person on a sheet of blank paper, and the person's size, detail, clothing, and so on, supposedly reveal your inner conflicts. Close-set eyes mean you have a suspicious nature. Big eyes indicate paranoia. A big head means you worry about being clever. Nearly everyone can believe such things. But dozens of studies have found that people with such features do not draw such pictures. The idea is plausible but wrong.

In one famous set of studies, groups of 56 college students were given 45 drawings of a person from a *Draw-A-Person* test. Each drawing was accompanied by six personality statements about the drawer from which each student had to work out the meaning of features such as head size. So they were rather like astrologers trying to work out the meaning of a new chart factor, say a new asteroid, using the traditional method of comparing charts with their owners. But

unknown to the students the personality statements were deliberately unrelated to the drawings. For example the statement "worried about being clever" appeared just as often for small heads as for big heads. Nevertheless nearly every student saw the correspondences even though they did not exist in the data. Worse, they continued to see them despite corrective strategies such as repeating the exercise, sorting the drawings into piles for closer study, and offering money for accuracy. Worst of all, when the statements totally opposed the correspondences, so that "worried about being clever" appeared only for small heads, never for big heads, the students still saw them, albeit to a lesser extent (Chapman and Chapman, *Journal of Abnormal Psychology* 72, 193-204, 1967).

The important point is that these studies could not have made it easier to avoid seeing non-existent correspondences, yet the students failed miserably. So there is no reason to suppose that astrologers do any better once their minds are focussed on astrological symbolism – which of course is only one of the many hidden persuaders that lead them astray. If this seems preposterous, and that only extremely gullible of people could be affected, consider this:

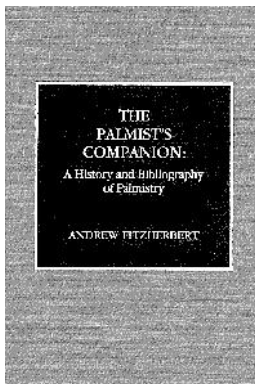
In 2005, several media outlets in the UK paid some of Britain's best known graphologists to look at the contents of a scratch pad retrieved from the conference table after Prime Minister Tony Blair attended the recent World Economic Summit. Knowing in advance it was the work of this beleaguered politician whose fortunes were sagging at that moment, the graphologists confidently declared it the output of a reckless, vacillating, incompetent. Blair's open circles revealed an inability to complete tasks, they said – some even detected a hint of suicide proneness (both politically and personally). The cream of British graphologists proceeded to expose Blair as someone struggling to concentrate, not a natural leader, unable to keep control of a confusing world, and an unstable man staggering under enormous pressure. ... but No. 10 Downing Street punctured the balloon by revealing that the handiwork that had been analysed had, in fact, been that of the person sitting next to Blair at the conference table, Microsoft founder Bill Gates, arguably the world's most successful self-made businessman (*Tall Tales about the Mind and Brain* 2007:266).

7.2.1992.4 Unprofessional tendencies in astrology

Jacob Ruijling, *AinO* 7(2), 26-35, 1992.

Why do outsiders perceive astrology as nonsense? One reason is that astrologers ignore the results of empirical research, yet anyone who studies this research must conclude that astrology cannot live up to its claims. So there is a conflict between astrology and observation. For example a joint committee of Dutch astrological organisations, set up to formulate guidelines for improving astrological practice, concluded in 1992 that the quality of a birth chart reading comes from the astrologer and is not determined by any particular technique. This creates problems because ethical codes imply that astrologers can predict the future (eg of the client's health) whereas the research shows that they cannot predict better than chance. The same codes say that astrologers should not predict, but by definition astrologers cannot avoid predicting if they use birth charts (even a simple reading about character still involves predicting something, in this case character). Important questions that I cannot answer include whether education (eg in medical astrology) can be tested if the discipline itself has not been tested; how education, diplomas, and the discipline itself are connected; and what kinds of education presently exist. If astrologers are to progress they must recognise that: (1) Astrology cannot predict. (2) Astrologers predict but not on the basis of astrology. (3) Astrologers should focus more on what makes astrology appear to work and therefore on how astrologers should work.

Comment These important issues receive more discussion in Chapter 10 (astrology's future).

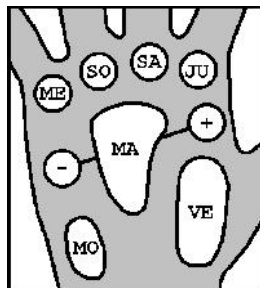


7.2.1992.5 The stars in your hands

Andrew Fitzherbert. *The Palmist's Companion: A History and Bibliography of Palmistry* 1992. A scholarly work with illustrated biographical essays on key palmists, historical essays on key areas such as astro-palmistry, Chinese palmistry, scientific research (inconclusive), reviews of key works, and an annotated bibliography of 560 titles.

Astro-palmistry is the theory that the hand and the horoscope reveal the same information. It rests on linking the planets to certain parts of the hand. For example a strong Jupiter by sign or aspect would be linked to a strong Mount of Jupiter or a long finger of Jupiter. For the reverse, a weak Jupiter would be linked to a short finger of Jupiter or a grill on the Mount of Jupiter. So it should be possible to describe the horoscope by examining the hand, and vice versa. Amazing stuff.

Several writers have tried to show how this is done, but there is little agreement among them. No satisfactory proof has ever been advanced. Fitzherbert makes this obvious point:



The first question to ask is: "Who decided where the planets should be on the palm?" No one really has an answer to this. The very oldest manuscripts use this classification, and it is therefore hallowed tradition. The problem is, no one has ever shown that the theory is true. While several Astro-Palmists have found good specimens to support the theory, for every case that works there seem to be ten cases that don't work! This is just not good enough (p.67).

The fingers are traditionally named after classical planets, as are the areas or mounts at the base of fingers and elsewhere. Some palmists add further areas to include the non-classical planets beyond Saturn, while Indian palmists include the Moon's nodes Rahu and Ketu. At best there is only modest agreement.

So modern astro-palmists have begun to question whether the Mounts are correctly named, but their proposed improvements do not agree. For example Fred Gettings, one of the great names in modern Palmistry, proposed in his 1973 book *The Hand and the Horoscope* that the Mount of Saturn and Mount of Apollo be fused into a single area he called the "Area of Libra", which failed to catch on [and probably just as well given the lack of support for signs]. He also proposed a simple method of dividing hands into four element types, which has since become the most successful method of hand classification ever put forward. But it has failed to pass empirical tests, see 7.6.1979.2.

What about astro-palmistry outside of Western countries? India is filled with legends about astro-palmists, supposedly rare holy men who have the secret of astro-palmistry and guard it jealously. Fortunately most of their books are in English, but the most basic techniques seem to be pure nonsense. For example the planets are said to be shown by the number of vertical lines on the various parts of the fingers, except Western palmists disagree on the numbers they can see in a given hand print or even if they exist in the first place. Fitzherbert concludes:

The whole field of Astro-Palmistry is in need of further research. The obvious method is to assemble prints of people with similar astrological patterns. A dozen prints of people with Aries Rising or the Moon in Capricorn would soon reveal whether they have common palm patterns or not. To cover every astrological pattern would be an immense job requiring thousands of prints. Yet if even a few configurations were tested this way, we would soon know whether it is worth going any further (p.72).

Client relations

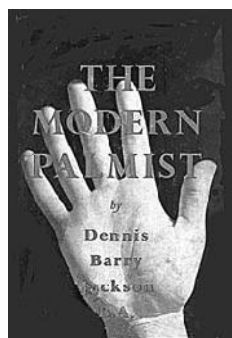
Fitzherbert singles out for uniqueness the 1953 book *The Modern Palmist* by Dennis Barry Jackson BA (he had an honours degree in English from Manchester University), who was employed as a palmist at all six of the Butlin Holiday Camps that offered war-weary Brits inexpensive all-found holidays by the sea. It was unique because it was based on observation:

I have read thousands of hands, for profit and for pleasure; for five-bobs and for fun. I have studied every hand minutely; I have diagnosed erroneously and also brilliantly; I have thought; observed; improved. I now call myself an expert (p.11).

Jackson writes about his experiences with a rare directness, many of which are of interest to astrologers because the most usual excuse for astrological error (an uncertain birth time) cannot apply. Palmistry is less forgiving than astrology. Some examples:

I have, of course, met large numbers of palmists. Many of them sincerely believe in their ability to help others and to read hands accurately. Others are more dubious about the truth of their diagnosis; they simply do their best to satisfy and please their customers, by flattery, by sound advice or by highly imaginative fortune-telling. ... The nastiest ... is the one who terrifies the obviously credulous and childlike customer with tales of illness and tragedy. I have seen emotional young women upset for days after paying for a hand-reading which they thought would be "a bit of fun".

[But] even the average palmist has his value. If he is not a producer of goods, he is certainly a producer of pleasure. He is at best a wise and gifted psychologist who can tell much of value from the hand; at worst he is a popular entertainer. ... Like the teacher or the priest or the doctor, he can give advice. The advice of the teacher or the priest or the doctor is often forgotten, but the advice of the palmist is remembered. Believe me, this is true! I have been a teacher,



and much that I taught was quickly forgotten, if heard at all [even though it was] free of charge. ... But when I was a palmist and people queued up and paid five shillings for a five-minute interview, they hung upon my every word, as though I were a Delphic oracle. And they remembered my every word (p.13).

Jackson describes the most brilliant palmist he ever met. He was a Pole with an expert knowledge of the human hand, who began reading hands with great enthusiasm for his scientific approach, predicting much success due to its accuracy. But after five weeks he was less cheerful, because people did not want to know about their character or medical problems, only about when they will get married or when they will win the football pools. "They do not want a scientist they want a wizard". In due course he changed his approach:

He would take handprints in the normal way, asking the clients to return the following day for their readings. When he saw each customer he would pencil in the corner of the sheet a description (in Polish) of the person – eg "nice-looking young lady"; "elderly man who made jokes while having hand read", etc., and would use these notes as a basis for his subsequent "hand-reading". He would excuse his methods by saying: "It is not I who wants to cheat the people. It is the people who ask to be cheated. They do not want science, they want silliness. They do not want fact, they want fun. So it is *their* fault if palmists swindle them. Nobody can blame me" (pp.18-19).

Jackson points out that *nobody knows their own character*. Each person knows only their own feelings and cannot know for certain whether they are say a sensitive person [this was before the ready availability of personality tests], so most things are hard to dispute. He illustrates this by a bogus character reader he once saw. The reader selected audience members for his crystal-gazing, with results that were always greeted with loud applause. Because:

Members of audience always say "Yes" to such questions as "Are you impulsive?"; "Are you timid?"; "Are you brave?"; "Are you shy?"; "Are you bad-tempered?"; "Are you good-tempered?" etc., etc. It is a good tip for palmists to remember this. As long as customers are easily pleased by silly fortune-telling, palmists will tend to treat their work as a joke and clients as mugs. This is, of course, sad. But you can't blame the palmists! (pp.113-114).

One palmist always wrote down two bad characteristics on the hand-print for every five good characteristics. Jackson asked him why he did this. He replied that nobody was totally good or totally bad, so 2+5 gave a nice mixture in favour of good. Jackson felt this was not honest because some hands are much better (or worse) than others, and was told:

But if you write down nothing but praise on a handprint the customer suspects that he is merely being flattered and dislikes it. So ... I just word my phrases differently. Many characteristics of people can be described favourably or unfavourably. For instance, one can write either "Great confidence in your own abilities" or "Big-headed". Either "Able to think carefully before taking action" or "Too frightened to say boo to a goose". These alternatives are quite handy for use. If you are writing a handprint and you feel you are praising your client too highly, you tone down your phrases; if, on the contrary, your client has a terribly bad hand, you can soften the blow by using semi-complimentary phrases even when describing bad characteristics (p.115).

Comment Which emphasises the role of social desirability as an artifact, see 9.9.5. Given the general absence of useful effect sizes in astrology and palmistry, see 8.6.7, the chance of establishing useful links between them seem remote. That said, empirical tests of planetary strength in charts vs size of planetary mounts in hands could hardly be simpler, yet neither astrologers nor palmists seem interested in making them. For a joint (negative) test see 7.6.1979.2. It seems that Fitzherbert's pessimism about astro-palmistry may be justified. Why should either type of practitioner put their reputation at risk in the interests of the other?

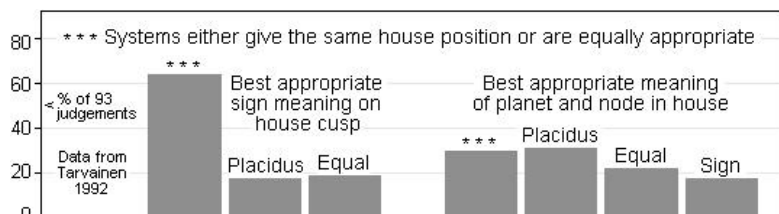
7.2.1992.6 Astrologers (N=93) judge three house systems

Kyösti Tarvainen, survey by questionnaire of members of The Astrological Association of Finland made in 1992.

Tarvainen sent a survey questionnaire to about 500 members of The Astrological Association of Finland in which they had to: (1) Take any chart (most likely their own) and judge for each house whether the Placidus or Equal house system gave the best appropriate meaning of the sign on the house cusp. For guidance a summary of meanings was available in the Association magazine. (2) Determine the house position of the ten planets and Moon's North Node according to the Placidus, Equal and Sign house systems, and judge which system gave the best appropriate meaning of each body. These three systems were chosen because most people

know the Placidus cusps and the other two are easy to calculate (in the Sign house system the first house is the rising sign, the second house is the next sign, and so on). The house system normally used by the 93 members who responded was 65% Placidus, 26% Equal, 6% Sign, 3% other or no response. The Ascendants in the 93 charts showed a broad minimum around Aries and a peak about five times higher in Scorpio, consistent with the difference in rising times at high northern latitudes.

The judgements of houses in (1) sometimes varied considerably depending on house, but the judgements of planets in (2) were more uniform. Here are the mean judgements:



Excluding cases where the house was the same by all systems, or where both outcomes were appropriate, and despite the working preference for Placidus, there was no consistent difference between Placidus and Equal house.

Tarvainen also submitted the questionnaire to astrology students at an adult education centre; 18 students showed a slight preference for Equal house for sign meanings on house cusps; 11 students preferred Equal and Sign equally for planets and node in houses, but they preferred Placidus about a third more. Both results are very similar to those shown above.

Comment Finland was an ideal country in which to conduct such a survey because local charts would be for high latitudes (Helsinki is at 60.2° N) and thus magnify the differences between house systems. Unfortunately the inevitable lack of blinding for the judging process, the lack of evidence for the validity of signs and houses, and the inevitable self-selection of charts and judges (19% out of 500), made the exercise of limited value. But full marks to Tarvainen for doing something when everyone else was doing nothing.

7.2.1993.1 If birth time is unknown

Jacob Ruijling, *AinO* 8(2), 11-13, 1993.

There are many published horoscopes with unknown birth times, and the publishers usually take the birth time as 12 noon, which suggests an apparent but actually non-existent accuracy. The author criticises this solution and proposes that the range of each planet's position be given instead. In addition to the unsolvable problem of inaccurate birth times there is the problem that astrologers emphasise their own studies if the results are positive but not if the results are negative. **Comment** The topic is continued by van Rooij in 7.2.1993.4.

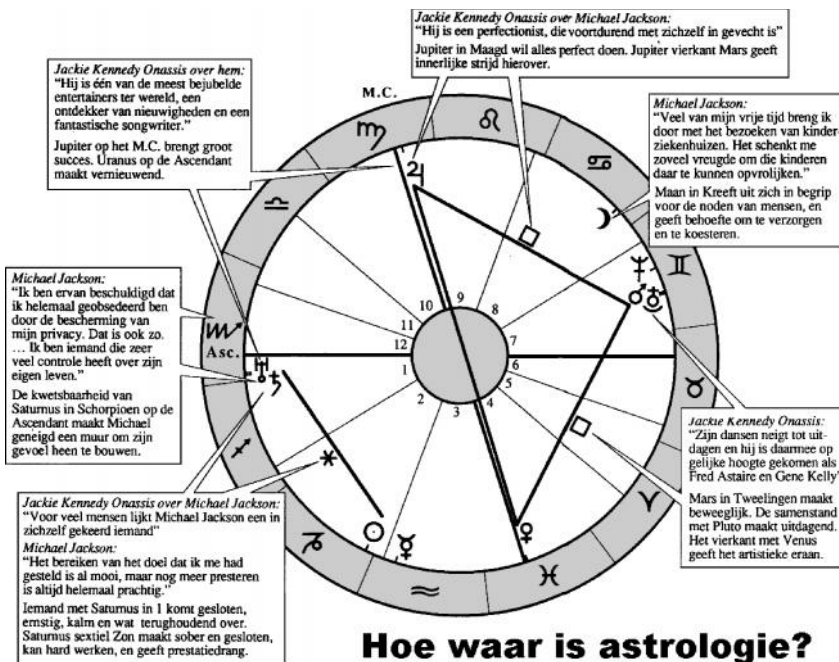
7.2.1993.2 How true is astrology? (booklet)

A 24-page A5 booklet written by three NVWOA members (Wout Heukelom, Bert Terpstra, and Rudolf Smit) and three members of the Dutch skeptics society Stichting SKEPSIS (Rob van Gent, Ronny Martens, and Karla Mulder). It was thus a joint effort between astrologers and skeptics – precisely the sort of collaboration for which the Netherlands is a pioneer. Published January 1993 by the Dutch Institute for Individual Development as #2448 in its weekly *Current Topics*. The editor wondered if readers informed about astrology might send in less critical views (p.1) but nothing happened.

The booklet stresses the difference between sun sign columns and serious astrology, and explains how the latter is dependent on birth charts and accurate birth data. Then comes the birth chart of Michael Jackson to show how the meaning of each chart factor is confirmed by excerpts from his autobiography and a biography by Jackie Onassis.

On the next page is Michael Jackson's birth chart and added biographical excerpts as they appeared in the original Dutch booklet, followed by typical excerpts translated into English. The rest can be obtained on demand by typing them into Google Translate.





Hoe waar is astrologie?



Jupiter near the MC = "He is one of the world's most celebrated entertainers".

Jupiter in Virgo square Mars = "He is a perfectionist who continually fights with himself".

Moon in Cancer = "Much of my spare time is spent visiting children's hospitals".

Same (crabs walk sideways) = *Moon Walker* his autobiography. A double whammy!

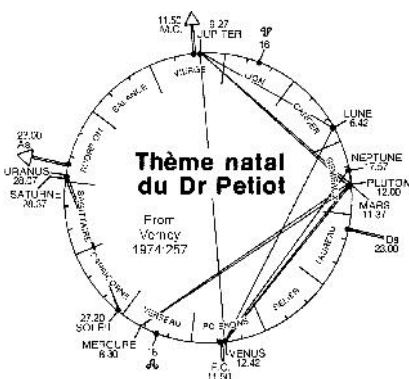
Uranus near the Ascendant = "He is the discoverer of new things, and a fantastic songwriter".

Saturn in Scorpio and 1st house = "obsessed with protecting my privacy. That is true".

Neptune in Gemini and 7th house = "his way of dancing has a tendency to challenge others".

Sun sextile Saturn = "For many he seems an introverted person".

Amazingly, the accuracy of each chart factor is confirmed without exception! No wonder astrologers believe that astrology works! The booklet then surveys the main kinds of chart factor (zodiacs, signs, houses, planets, aspects), astrology's history, and the results of research. But the results of research are negative, as are attempts by astrologers to predict the future. So the booklet asks the key question: how are such negative results possible when the birth chart of Michael Jackson (as any reader can see for themselves) is so extremely accurate?



However, the chart is not Michael Jackson's but Dr Marcel Petiot's, one of the worst mass murderers in history. Petiot was born in 1897 nearly 60 years before Jackson, with Capricorn Sun, Cancer Moon, and Scorpio Ascendant. Jackson has Virgo Sun, Pisces Moon, Gemini Ascendant, and only one aspect in common with Petiot (Venus square Mars but with a much wider orb). But Petiot's chart is not without factors that fit a ruthless murderer:

Petiot's birth chart from Daniel Verney, *Fondements et avenir de l'astrologie* [Foundations and future of astrology] 1974:257. Dr Marcel Petiot was born 150 km southeast of Paris in Auxerre on 17 January 1897 at 3 am. Arrested 31 October 1944. Sentenced to death for 27 murders

(he claimed 63). Executed 26 May 1946. SO is sextile an angular SA-UR conjunction (orbs <1.5 deg). A MA-PL conjunction (orb <0.5 deg) is in a T-square with an angular VE and JU, released by a MA-ME trine and VE-MO sextile (orbs <3 deg). VE, MA, JU and PL also feature in numerous midpoints. Perhaps the most significant single factor is the close square between VE on the IC and MA conjunct PL (orbs <1°), meaning "ruthless passionate assault".

The above exercise shows how any chart – even a wildly wrong chart – can be made to fit any person. No wonder astrologers believe that astrology works! The booklet notes that Petiot's

birth chart had also been used by Gauquelin to show how easily people agree with it (6.4.6). **Booklet's conclusion** Astrology has nothing to do with reality. It is not honest to judge people by their horoscope. But astrologers are good listeners and care about their clients, which nearly always leads to a successful consultation and a satisfied client. Obviously if clients are satisfied then astrology will continue to be popular.

7.2.1993.3 Book review: *Introduction to Medical Astrology*

Jacob Ruijling, *AinO* 8(1), 42-47, 1993.

A review of H de Boer-Jongkind, *Inleiding tot de medische astrologie*, Homeovisie 1992. The book is acceptable if viewed as an astrology textbook, but its claims are too unexamined. In medical matters such as sickness and health, and life and death, authors (in this case Ms H de Boer-Jongkind) have a responsibility to present more than assumed connections with the birth chart. We need empirical evidence from properly conducted studies, which is what this book lacks. On the other hand, the author mentions VMA, the *Vereniging voor Medische Astrologie* [Association for Medical Astrology] which seems to be something similar to the NGPA, the Dutch Society for Professional Astrologers. But it is difficult to find compelling reasons to accept the claims made in this book. **Comment** In 1998 VMA merged with NGPA to form AVN, *De Astrologische Vakvereniging Nederland*, The Astrological Association of the Netherlands. In 2012 its website listed over 120 professional practising Dutch astrologers. The plea for empirical evidence went unheeded.

7.2.1993.4 If birth time is unreliable

Jan van Rooij, *AinO* 8(2), 14-15, 1993.

The problem that Ruijling addresses in 7.2.1993.1 is relevant not only for researchers but also for astrologers, simply because astrologers base their ideas on what they see in birth charts. If a birth time is not reliable then neither is what they see in the birth chart. Psychologists have tackled the problem of unreliable data by exactly describing their procedures, by making their data available to others, and by insisting on replication. Such measures can never guarantee that errors will not be made, but they will greatly help others to detect them if they exist.

Comment The problem of uncertain birth times, and unreliable birth data in general, was addressed head on by US astrologer and dedicated data collector Lois Rodden (1928-2003) She devised the now universal system of classifying data reliability (AA, A, B for verifiable sources, C, DD for conflicting or non-verifiable sources). Over 40 years she had collected more than 26,000 birth data that were made available via AstroDataBank, see 7.7.2006.1.

7.2.1994.1 Is astrology really meaningful?

Jacob Ruijling, *AinO* 9(1), 20-25, 1994.

Sets of birth data such as those published in the USA by Marc Penfield and by Matrix Software contain cases with uncertain birth dates or no birth times, which make such cases useless for research into astrology. But astrologers still see them as meaningful. Why? Simply because astrologers *assume* a connection, with no explanation other than the connection itself. Such a connection is not evidence-based but belief-based. Nevertheless, as pointed out by the British philosopher WJ Thomas (1863-1947), "if men define situations as real [then even if not real] they are real in their consequences".

7.2.1994.2 Social acceptance of astrology

Jacob Ruijling, *AinO* 9(2), 28-30, 1994 with response 31-32.

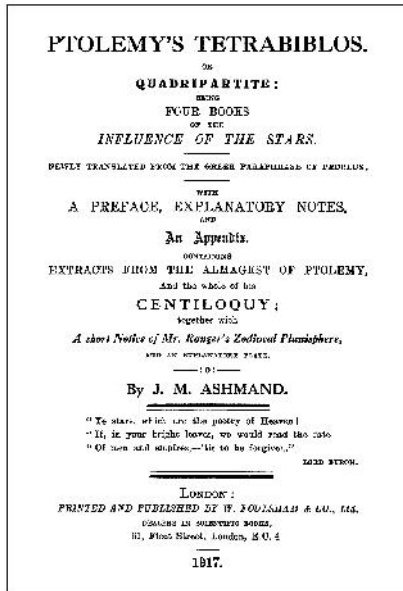
Astrology still has the status of a superstition. Even attempts to improve its status by NGPA (the Dutch Society of Practising Astrologers) have failed due to NGPA's inability to engage in critical debate. Ruijling suggests that astrology be justified by listing positive results (assuming they exist) to scientific tests. NGPA's chairwoman Lea Manders responds by advising that the

Society has now established a special group to study the foundations of astrology and thus enhance its maturity [see next two items]. NGPA has also raised the requirements for membership. Ruijling responds by suspecting that the emphasis on maturity is merely to justify existing ideas and will do nothing to raise astrology's status.

7.2.1994.3 King George III and Samuel Hemmings

Geoffrey Dean, *Correlation* 13(2), 17-30, 1994 and 14(2), 23-27, 1995.

The famous story of time twins Samuel Hemmings and King George III appeared in a footnote in JM Ashmand's translation of *Ptolemy's Tetrabiblos* 1822/1917:9-10. Here Ashmand is commenting on Ptolemy's argument that upbringing and circumstances are just as important as the birth chart in making the life and destiny of one individual different from another:



* In this passage the author seems to have anticipated, and exposed the absurdity of an argument now considered very forcible against astrology: viz. that "if the art were true, then any two individuals born under the same meridian, in the same latitude, and at the same moment of time, must have one and the same destiny; although one were born a prince, and the other a mendicant." Such a monstrous conclusion is nowhere authorized by any astrological writer; it is, on the contrary, always maintained by all of them, that the worldly differences and distinctions, alluded to in the text, inevitably prevent this exact resemblance of destiny; and all that they presume to assert is, that, in their respective degrees, any two individuals, so born, will have a partial similarity in the leading features of their fate. Whether their assertion is *uniformly* borne out, I will not take upon me to determine, but it would be unfair not to subjoin the following fact:—

In the newspapers of the month of February 1820, the death of a Mr. Samuel Hemmings is noticed: it was stated that he had been an ironmonger, and prosperous in trade; that he was born on the 4th of June 1783, at nearly the same moment as his late Majesty, and in the same parish of St. Martin's in the Fields; that he went into business for himself in October 1780; that he married on the 8th September, 1761; and finally, after other events of his life had resembled those which happened to the late King, that he died on Saturday the 29th January 1820.

These coincidences are, at least, highly remarkable.

The footnote was later quoted in Raphael's *A Manual of Astrology* 1828, with this added query:

After such an authenticated and luminous instance as the foregoing ... can any rational mind, *upon mature and sober reflection*, attribute the foregoing most pointed agreement in their destinies – to mere chance? (Raphael's italics).

But the actual newspaper obituaries for the ironmonger show: (1) His name was Richard Speer, not Samuel Hemmings. (2) Other than the same birth and death dates, only the same marriage date is true, and even then only because of Speer's deliberate choice:

DIED,
On Saturday, the 29th ult. Mr. Richard Speer, in the 82d year of his age, many years a respectable furnishing ironmonger, and one of the oldest inhabitants in Hammersmith.—It is a curious coincidence that Mr. Speer was born the same year, on the same day, and at the same hour, as his late Majesty, and expired on Saturday evening last, about nine o'clock, being near the precise time when our late revered Monarch breathed his last: and it may not be altogether uninteresting to add, that Mr. Speer, who, from early life, was a most loyal subject, being about the same period on the eve of wedlock, was actually married on the same day as their late Majesties, having fixed upon that particular day for the purpose.

Here is Speer's obituary from *The Morning Advertiser*, London 2 February 1820 page 3 last column. The name Samuel Hemmings was possibly a disguised reference to Sixtus Hemminga, a 16th century Dutch physician and astrologer who debunked astrology by showing how the lives of thirty well-known men did not match their birth charts, see 5.2. If this is correct, the story may have been a symbolic challenge to debunkers via an invented proof of astrology.

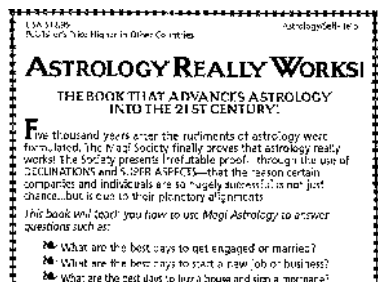
Indeed, the later accounts in astrology books show much embroidering:

- They add things not in the original such as the birthplace, being prosperous, and the simultaneity of events including going into business.
- The name changes variously from Hemmings to Hemming and Samuel to Sam or James, even to two people.
- The birth time changes variously from the original *nearly the same moment* to the *same time*, the *same minute*, and *almost the same minute*.

In short, the story seems to be a fabrication. Furthermore, if we consider not just *this* king and *this* city but also *other* notables and *other* cities, then for the then population of England and Wales (13 million) the probability of such a birth-and-death twin occurring by chance is unremarkable. The answer to Raphael's query is clearly Yes.

7.2.1995.1 A declination breakthrough?

Magi Society, *Astrology Really Works!* 1995. Psychiatrist Mitchell E Gibson MD, *Signs of Mental Illness* 1998. Both books claim that parallels/contraparallels (planets with same declination either N or S of the celestial equator) are the key to correct chart interpretation. But according to *Recent Advances* 1997:427, a survey of more than 100 sources showed that about 70% ignore Ps/CPs or give no interpretation, the rest were 2:1 against them being important.



The back cover of the first book claims it presents irrefutable proof that astrology really works via its use of Declination and Super Aspects. But the book itself makes no reference to any astrologer, or to any article, book, or published research. The name Gauquelin is never mentioned. Authors are identified only as the Magi Society, an international association of men and women contactable only via a New York telephone number (which is in fact an answering machine).

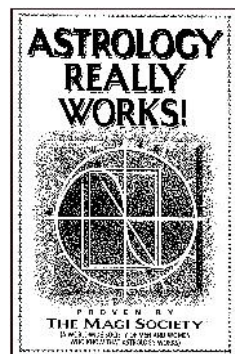
Their text includes scientist-bashing ("no one outside of their own circle is allowed to evaluate or criticize their [the scientists'] conclusions" p.227), astrologer-bashing ("there are only a handful of legitimate astrologers in the whole world" p.317), fundamentalism ("the fact that astrology works ... will be the closest thing to proof of God" p.240), and astro-creationism ("astrology proves that the fittest are not those who have the best genes, but they are those who have the most favourable astrological aspects in their natal charts" p.219).

Which may explain why it reads like a sermon complete with breathtaking self-assurance:

After researching the birth charts of all the most successful men and women in America, we found that astrology unquestionably works. But of course, we, of the Magi Society, knew that all along due to our extraordinary and unsurpassed knowledge of astrology, which we call Magi Astrology (p.1).

But their extraordinary and unsurpassed knowledge was not without error. Aspects were not used four thousand years ago (p.10), Newton was not an astrologer (p.16), astrologers do not try to avoid using aspects (p.41), signs were not formulated thousands of years ago (p.131), and Darwinists do not claim we evolved from apes (p.225).

The Magi explain that "astrologers and others have made many failed attempts to prove that astrology works" (p.37). Astrology needed a breakthrough. Therefore "we will take astrology the necessary monumental giant leap ahead by adding a whole new dimension to it; by doing so, astrology becomes provable" (p.39).



Their monumental giant leap consists of (1) tossing out all birth data except the date, and (2) tossing out all traditional chart factors except interplanetary aspects, parallels and contraparallels (a contraparallel is the same as a parallel except the two bodies have the same but opposite declinations). Astrologers who insist that birth times are essential, and that only the whole chart may be used, might well feel compromised. A Magi birth chart (one is on the cover) has planetary declinations shown on a sideways S-curve in the area traditionally reserved for houses.

Birth times are out because "even birth certificates that have exact times are almost always wrong" (p.40, how can they know this?). Declinations are in because "it is impossible to fully interpret birth charts without them" (p.58, most astrologers do it all the time).

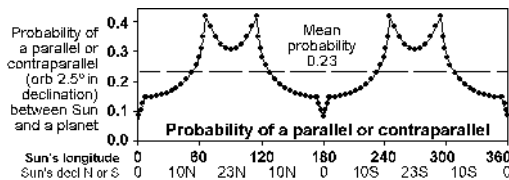
The Magi chart shows contacts in declination (ie parallels) as readily as it shows aspects, while contraparallels are readily shown by joining them with straight lines. This opens a rich new source of interpretation for the working astrologer, which turn leads the Magi not only to claim their "irrefutable proof" of astrology but also (and uniquely for any astrology book) to directly confront critics with six Challenges, of which these two are typical:

- List famous long-established athletes who do not have a Neptune enhancement of the Sun. The Magi will list those that do. You lose if your list is not ten times longer than their list (p.61).

– List American sports champions who have no Sports Champion Aspect and not more than one Super Aspect. The Magi will list those who have at least one of each. You lose if your list is shorter (p.206).

An *enhancement* is when two planets are in conjunction, trine, parallel, or contra-parallel. The orb is 3° for aspects and 2°30' for Ps/CPs (pp.52, 71). The Magi do not calculate the average probability of an enhancement, but their orbs suggest it is around 0.26, in which case their **first challenge** is unwinnable. Thus if the total population of famous athletes is N, then purely by chance (irrespective of any astrology) the Magi will find 0.26N with a Neptune enhancement, leaving skeptics to find 2.6N with none, which is clearly impossible.

A further complication arises when a planet's declinations in a sample are unequally divided between N and S. The plot below shows how the probability of a parallel or contraparallel with planet A (in this case the Sun) varies with its position. Each dot is the mean probability over a 360° circuit of the zodiac by planet B when the declination orb is 2.5°. Start on the left:



As the Sun moves above 0N, it allows contraparallels to form with a steep increase in probability. After 0N+orb it levels off, rises to a peak at 23N–orb, and then falls somewhat as the orb extends above the 23N limit. Beyond 90 (0° Cancer) the plot is a mirror image of the first half. Beyond 180 (0° Libra) the Sun moves into S declination, and the plot is repeated. A 2° difference in latitude decreases the mean probability by about 0.005. Halve the indicated mean to get the probability

of a parallel or contraparallel only. The mean probability does not vary uniformly with declination orb, especially if the two planets differ in latitude, but the mean probability is generally around (declination orb°)/12 within about 0.03.

Because the probability of a contact depends on where the planet is, it will also depend on the time period, which for slow-moving planets can cause severe sampling problems. For example Neptune had zero declination in 1862, maximum N declination in 1903, zero declination again in 1943, and maximum S declination in 1986. So if our charts happen to come from the 1860s or 1940s they will necessarily contain fewer declination contacts to Neptune than if they happened to come from the 1900s or the 1980s.

The **second challenge** is ambiguous because the Magi do not explain how to deal with those Sports Champion Aspects that are also Super Aspects (in each case the capitalisations indicate they have Connections, as in the next sentence). Initially the Magi note how the super rich and famous (eg Rupert Murdoch, Clint Eastwood):

"almost always have at least one, and on the average, two to three" of twelve Super Aspects so powerful that "anyone who possesses even one of these aspects has a jump start on achieving great success" (p.67).

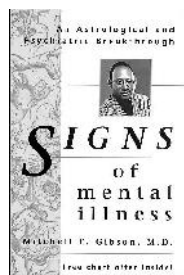
Later the Magi include a handful of other aspects as Super Aspects (p.142), thus increasing the total beyond twelve. Also the midpoints between planets in longitude or declination behave like planets and are just as important (p.147). The average champion athlete has two Super Aspects plus two of seventeen Sports Champion Aspects (p.205). The difference between Super Aspects and Sports Champion Aspects is complicated (seven aspects are common to both), but in broad terms Sports Champion Aspects involve Mars and Super Aspects do not.

Confusions aside, the twelve Super Aspects and eleven of the seventeen Sports Champion Aspects are all enhancements, which does nothing to resolve the ambiguities, effectively making the challenge unwinnable. The same problems apply to the other four Challenges.

Unfortunately the Magi's claims are presented uncritically without controls or statistical tests, in a manner that will be dreadfully familiar to readers of astrology books. Nevertheless the Magi assure their readers that everything has been subjected to "rigorous scientific statistical tests", the details being conveniently omitted because they are "beyond the interest level of most of our readers" (p.304), which is an interesting commentary on their target audience. However:

"anyone who wishes to obtain the study can contact us", although just asking for it implies "a very deep-rooted skepticism of astrology. In such a case no amount of statistical validation may be enough" (p.305).

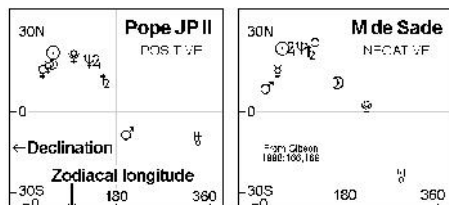
Attempts to obtain the promised information were unsuccessful. Now for the second book.



Despite this book's title it has little to do with zodiacal signs.

Dr Gibson's book makes similar claims for including declination along with longitude, but his charts are quite unlike most other charts in astrology, being basically declination plots with no zodiac circle, no houses, no angles, no Magi S-curve and no numbers, just gridlines every 5° in declination and every 20° in longitude on which planetary glyphs indicate their positions.

Here are two examples where the glyphs have been made three times their original size for legibility:



Gibson says Pope John Paul II (left) has an outstandingly positive chart, while the Marquis de Sade (right) has the cruellest chart he has ever seen. Their sinusoidal shape reflects how declination varies with longitude as shown on the Magi cover. He says the first has a weak Mars and Saturn, the second has a strong Saturn, except neither is obvious without supporting calculations.

But Gibson denies that neither is obvious:

Admittedly, this [chart] form is quite different from any other currently in widespread use, but I have discovered that most of the significant planetary relationships that are not at all discernible on the [traditional circular] chart are readily seen in the second format. In fact, I have found that there is a vast treasure trove of untapped data within the declination chart that may change the way we look at birth data altogether (p.25).

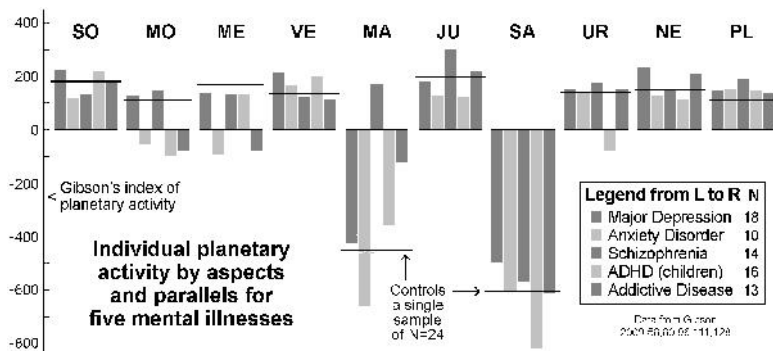
He acknowledges that he uses the same factors as the Magi Society (p.28), but he adds others based on his research, essentially the number of parallels and contraparallels for each planet (more contacts means more influence) and any activity at extreme declinations.

His orbs are 2°34' in declination for parallels/contraparallels, and 10° in longitude for major aspects (the Magi's orbs were 2°30' and 3° respectively). Based on their symbolism, all squares and oppositions are negative, as are all aspects involving Mars or Saturn. Similar allocations are made for parallels/contraparallels. Gibson points out that:

The Magi Society ... have been instrumental in expanding the vistas of astrological research [but] their work has been limited to the study of celebrities, financial matters, sports, and a small group of world events. To date, they have not done any definitive work on mental illness or the emotional aspects of human behavior. Therefore, this remains a totally uncharted area, even for those who are involved in the new research (p.28).

So he applied his method to five groups of mental illness patients from his psychiatric practice, each averaging 14 patients as diagnosed by the *Diagnostic and Statistical Manual of Mental Disorders* 4th edn 1994 (the standard manual for diagnosing psychiatric disorders), together with a single control group of 24 subjects with no history of mental illness or psychiatric treatment, and with ages and gender ratios said to be comparable with the test groups.

Gibson combines the counts for his 21 aspect/parallel factors into an "index of planetary activity" for each planet and presents the results for each group separately, which makes comparison difficult. So they are collectively replotted below to make comparison easier.



The "index of planetary activity" for each planet plotted for each of the five groups vs the control group shown as horizontal line.

The consistently strong negative index for Mars and Saturn is due to giving these 2 planets strong negative scores in first place.

Gibson claims the difference between each group and control group shows there is a link between chart and mental illness not explainable by chance.

Comment Studies of declination face a severe problem, namely that planets with the same

or opposite declination are usually widely separated in the sky, which would seem to deny any symbolic link unless the planets happen to be in aspect. The total disagreement over validity as noted in *Recent Advances* 1977:426-432 was earlier noted by de Herbais de Thun (*Synthèse de l'interprétation astrologiques d'après les principaux auteurs modernes* 1937:152):

Parallels are neglected by large numbers of astrologers. Many studies published in special journals do not mention them in the interpretations given. ... a reliable conclusion as to their value does not seem possible (p.152).

and was later confirmed by Fred Gettings (*Arkana Dictionary of Astrology* 1990) who notes that tradition allows a maximum orb of one degree only, and that

The whole realm of parallel aspects is very much in dispute in modern astrology, and some astrologers regard the parallel as effective only when the planets concerned are otherwise in angular aspects (p.365).

The usual rationalisation is that the Earth's rotation carries one body across the other in a kind of intermittent conjunction, except this cannot apply to a single birth moment. Thus Morinus in the 17th century held that parallels were effectively transits by diurnal motion, which does not explain contraparallels unless some symmetry operates as in midpoints. So we might expect the supposedly scientific studies of the Magi and Gibson to have given these problems due scientific attention, but they conveniently ignore them as if they did not exist.

In Gibson's case there are other problems: (1) His mental group sizes and control group size are very small (meaning large sampling errors). (2) His single control group cannot possibly match the ages and gender ratios of five different sample groups especially as four are of adults and one is of ADHD children. (3) There is no replication. (4) There are no statistical tests to show that the results are not due to chance. (5) The absence of the angles and their sensitivity to time is fatal for precisely timed births. (6) Declination contacts are too time-insensitive to make up the difference even at the level of his mental illness base rates (which vary with country but are generally 5%-15% except for schizophrenia 0.5%).

Also the above plots show that the mean trend of the five mental groups is always in the same direction as that of the control group, which suggests (given the absence of contrary evidence) that real differences do not exist. In other words this study, like the Magi's, tells us nothing about the value of declination in chart interpretation. Cynics might see both studies as being deliberately obscure in order to lure the unwary with claimed scientific but invalid support.

7.2.1995.2 Astrology as a science: new, pseudo or social?

Nicholas Campion. Introductory remarks at Kepler Day November 1995. *Correlation* 14(1), 56-59, 1995.

Campion claims that arguments between astrologers and scientists tend to be based more on cultural ideals than on mere evidence, so that debate tends to be obscured by differences in how astrology and science are defined. He considers three ways of defining science:

- The results of science (a body of information).
- The tools of science (methods of investigation).
- What scientists (practitioners of science) do.

And four ways of defining astrology as a:

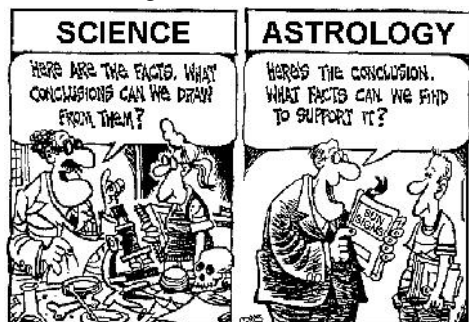
- Science (seeks empirical answers to questions).
- Neo science (seeks empirical validation of astrological claims).
- Pseudo science (does false science).
- Social science (reduces to a science or a humanity).

He concludes:

History, which is defined variously as a social science, art or humanity, has rehearsed the arguments between "art" and "science" which bedevil astrology. ... Perhaps we should withdraw from such scientific definitions altogether and, if we must define astrology in an academic category, call it a humanity [ie in the sense that it interprets data] (p.59).

Comment The merits of calling astrology a humanity are obvious – where it involves interpretation, astrology is elevated above all criticism based on empiricism. But none of Campion's

definitions of science tap its essential nature, which is *to put ideas to the test*. Hence the difference between science and astrology is contrary to what Campion suggests – science *always* tests its ideas but astrology *never* tests, or at least either the tests are inadequate or the results are ignored. Science (but not astrology) insists that knowledge must be based on sound



observation. In astrology (but not in science) anything goes. As US researcher Donald Bradley put it in his 1950 book *Profession and Birthdate*:

All improvements are welcome so long as the complacent surface of tradition is not disturbed (p.10).

But without a sound scientific basis (which astrology defined as a humanity is now incapable of having) nobody can legitimately claim that chart factor X indicates anything. All that could be claimed is something like "the ancient Greeks thought that X

indicates Y, but nobody knows if this is actually true". A claim to actual correspondences would automatically make astrology a pseudoscience – an art falsely posing as a science.

Astrologers are fond of dismissing science as "not the only source of truth", which seriously misses the point. Science is a fail-safe work in progress – the joy of finding things out.

7.2.1996.1 Astrology on the internet is of little serious interest

Joanna M Ashmun [1948-2009], *Correlation* 15(2), 35-51, 1996. An active and articulate researcher.

I surveyed astrology on the internet during 1996 and found that almost all of it is social or commercial talk of little interest to researchers. Hundreds of serious astrologers subscribe to mailing lists, some moderated and some not. The most striking quality of lists is that they discuss *everything*, often generating more heat than light, which says a lot about the power of astrology to generate mutual interest across social and cultural boundaries. But as people join and lose interest (it usually takes about 3 months), the newcomers bring up the same old topics, so the level of discussion does not deepen over time. Nothing is resolved. The way astrologers treat researchers and critics is no different from the way they treat other astrologers who disagree with them – they continue on as if the disagreements never existed. From experience with lists on other topics, I have to say that astrologers are less literate than average. Most would rather have an iffy quotation from Rudhyar or Jung to support their opinions than sound numbers. Many astrologers have university educations, quite a few have graduate degrees, and they must, therefore, have had to do some reading, writing, and scholarship at some time, but these presumed skills rarely escape to the mailing lists.

Overall, journals of all types including newspapers and popular magazines are mentioned on the lists no more than once in every 2000 postings. In June 1995, before my present survey, a poll on alt.astrology asked which five astrology books readers would pick if five were all they could keep. The top two (at least 3 picks each) were Ebertin's *Combination of Stellar Influences* and Hand's *Horoscope Symbols*. In total 107 titles were named, 93 of them only once.

Comment Unfortunately little has changed since 1996. Frances Clynes (*An Examination of the Impact of the Internet on Modern Western Astrology*, PhD thesis, University of Wales Trinity Saint David 2015) found that most astrologers see the internet as a mental area distinct from the (superior) offline physical world, suggesting that astrology has two basic modes perhaps similar to the facts vs meaning duality in 1.5.2. The internet is seen as both positive (connects astrologers around the world) and negative (makes poor quality information easily available).

7.2.1996.2 Sextus Empiricus's arguments against astrology

Bart Koene, *Correlation* 15(2), 26-34, Winter 1996. Nine references.

One of the most influential of ancient Western philosophers is the Greek physician Sextus Empiricus, who lived in the 2nd or 3rd century AD. Few things are known about him. We do

not know where he lived or worked, but his works have survived the ages. He practised an early form of skepticism that suspended judgement, a sort of ignorance is bliss. For example:

Q: What is the nature of X?

A: All we can know is how it seems.

Q: But what is its real nature?

A: Suspend judgement, and thus achieve tranquillity!

In his *Against the Astrologers*, which is Part V of his *Against the Professors*, Sextus inquires into astrology or the Mathematical Art, which is differentiated from the Complete Art (arithmetic and geometry), and from astronomy. He describes astrology as follows:

[Astrology] is rather the casting of nativities, which the Chaldeans [then synonymous with astrologers] adorn with more high-sounding titles, describing themselves as "mathematicians" and "astrologers," treating ordinary folk with insolence in various ways, building a great bulwark of superstition against us, and allowing us to do nothing according to right reason (RG Bury, *Sextus Empiricus*, 4 vols, Loeb Classical Library 1933-1949, ATP part V pp.2-3).

The basic assumption is that:

things on earth "sympathize" with those in the heavens, and that the former are always newly affected by the influences of the latter. [So] the seven stars [SO through SA] stand in the relation of efficient causes for the bringing about of everything which occurs in life, and that with them the parts of the zodiac co-operate (ibid pp.4-5).

He reports how the Chaldeans watched the rising sign (then the most important significator) by night by sitting on a high peak observing the stars after being informed of the birth by the sound of a gong. During the day they studied the sundials and the motions of the sun. Sextus's summary of significators would probably sound familiar to any modern astrologer – eighteen centuries has not wearied them! He then gives many arguments against astrology:

- As-above-so-below sympathy does not exist.
- Astrology cannot exist unless all things are destined.
- Forecasting sure events is useless (they cannot be avoided).
- Forecasting unsure events is useless (they can be avoided).
- Why birth and not conception?
- Birth time is uncertain (birth is a long process).
- Birth time cannot be accurately known by observers of the sky (who might be on a mountain peak).
- The sky cannot be observed in daytime or on cloudy nights.
- Many people are born at every instant but none were equal to Plato or Alexander the Great.
- Many people with different births nevertheless meet the same end.
- Astrological analogies (Leos are brave like lions) are absurd.
- Astrology is meaningless unless the same planetary positions produce the same result.

The last argument above shows his respect for replication as evidence:

I affirm that if the prediction is to be reliable, the same position of the stars ought not be observed once only in connexion with the life of some one person, but a second time with a second life, and a third one with a third, so that from *the equality of the resultant effects in all the cases* we might learn that when the stars have assumed a certain configuration the result will certainly be of one particular kind (ibid p.103, my emphasis).

Much of Sextus's criticism of astrology seems rather modern. Indeed, many of his arguments can be – and still are – used by modern critics of astrology! They show how one does not have to be an adherent of scientism, reductionism, materialism or (neo) positivism – just a few of the terms some astrologers use as invectives – to object to astrology. For Sextus was none of these. Nor was he dogmatic in his statements about astrology. For he would always point out how someone might convince him of the contrary. Koene's impression [in 1996] is that the most capable modern defender of astrology could not provide the necessary evidence that Sextus would accept. Of course the validity of this impression remains to be seen.

Comment It is instructive to compare Sextus's objections with those raised a thousand years later by the Italian scholar Giovanni Pico della Mirandola (1463-1494) in his famous twelve-volume *Disputationes adversus astrologiam divinatricem*, see 8.9.4.12. Their styles are different, and some objections raised by Sextus (birth timing and uniqueness) are not raised by Pico, and vice versa (astrologer disagreement), otherwise they are much the same. Today, some

objections such as precession (not mentioned by Sextus) have been countered by astrologers, but many are still ignored. If astrology seems to work, why bother with arguments against it?

7.2.1997.1 Aspect periodicity for 102 anthroposophic pioneers

Jos Verhulst, Astrological aspects in the horoscopes of 102 anthroposophic pioneers, as submitted to *Correlation* 1998. Although not accepted for reasons given below, the results demonstrate the problems faced by small samples.

Verhulst, a lifelong anthroposophist and Steiner supporter, had previously noted that when Rudolf Steiner was born during a full moon on 25 February 1861, it was inconsistent with his own observation that anthroposophic pioneers tended to be born near new moon. So it was logical to look elsewhere for connections. He decided to focus on conjunctions and oppositions in Steiner's chart because they were generally seen as the most important aspects. Apart from the full moon, Steiner's chart contains SO-180-SA, MO-0-SA, ME-0-NE, VE-180-JU, and MA-0-PL, all with orbs $\leq 13^\circ$. Verhulst explains his procedure:

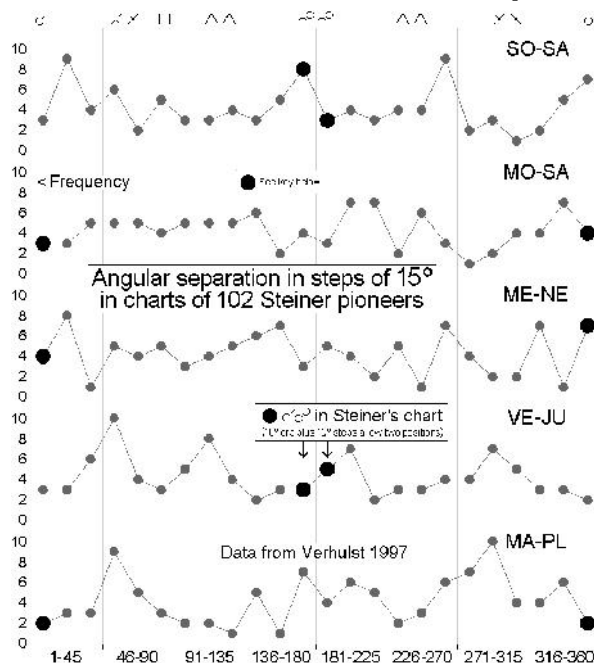
Because each pair contains a fast planet (SO-MA) and a slow one (JU-PL), and because the anthroposophic pioneers were born over a time span of several decades [actual distribution was not given], we can admit as a reasonable null hypothesis that the differences [slow minus fast] between the ecliptical longitudes of these planets (augmented with 360° when the difference is negative) have about an equal chance to show all possible values from 1° to 360° (0° is taken as 360°). ... Because the actual birth hour of the 102 pioneers is unknown, we calculated the horoscopes for 12:00 GMT. Of course this will tend to blur out ... aspects involving the fast-moving Moon ... but cannot induce apparent correlations as far as aspects between planets are concerned. Positions of the planets were rounded to the nearest degree. ... we divided the distribution of the 102 differences into 24 sectors of 15° . Sector 1 encompasses the interval 1° - 15° , sector 2 the interval 16° - 30° , ... sector 24 the interval 346° - 360° .

When he tested the resulting distributions for deviations from normality, the p values were

SO-SA $p = 0.012$, MO-SA $p = 0.30$, ME-NE $p = 0.18$, VE-JU $p = 0.002$, MA-PL $p = 0.10$,

which suggested that something unusual was happening. Harmonic analysis found periodic patterns that, although not sinusoidal, were suggestive of either 30° , 90° , or 120° aspects. When those periods were superimposed and tested by chi-squared, all were significant except for MO-SA (which were still present). Verhulst concluded:

The results presented here strongly suggest that a relationship, not explainable in astronomical or other conventional terms, exists among the horoscopes of Steiner and his 102 followers. ... On the one hand, planetary pairs forming aspects in Steiner's horoscope tend to show non-normal distributions in the horoscopes of his followers. On the other hand, these non-normal distributions tend to show aspect-like periodic patterns.



Comment In effect Verhulst looks at the distance between peaks. Thus the SO-SA distribution has 3 peaks fitting a 90° wave, the missing 4th peak makes it "non-sinusoidal". His test of normality is meaningless because normality is not a reasonable assumption for astronomical data. But the sampling error for a sample of only 102 divided into 15° sectors is enough to explain his results. As does his test of superimposed periods because it is applied after the results were known so their significance is inflated and invalid.

In other words such a test is admissible only if the "periodic patterns" had been specified in advance, just as the order of cards in a bridge hand has no significance unless it is specified in advance of shuffling. But the problems do not end there:

Verhulst has no control group, nor does he give the birth years of his 102 anthroposophists (other than they occupy "a time span of several decades"). Tests he didn't apply add to the bad news: Thus none of the ups and downs in his distributions are significant when analysed by a runs test (mean $p = 0.26$). The mean correlation between pairs of distributions is a negligible -0.01 . As shown in the above plots, Steiner's actual aspects do not favour consistently high points as might conceivably be expected if a real link existed.

A final problem is that Verhulst used 12 noon on 25 February 1861 for Steiner's birth. But both the time and date are wrong – they should be about 11:15 pm on 27 February 1861 as confirmed by a thorough search of the relevant archives by Günter Aschoff in *Das Goetheanum* Nr 9/2009. He wanted to sort out the disagreement between various publications:

For this reason, on behalf of the Dornach Working Group on Archives and History, he [Aschoff] collected everything he could find about Steiner's date and place of birth. The investigations showed that February 27 – and not February 25 – 1861, is Steiner's birthday (from the German abstract).

For example registry office documents showed that "25" is not a date but the running number of births in 1861. When Rudolf Steiner went to the secondary school in Wiener Neustadt, he and his parents gave 27 February 1861 as his date of birth. Part of the confusion may arise because Steiner suffered birth complications that required baptism immediately after birth, whereas the normal interval is about two days. Nevertheless according to their website Astro-DataBank prefers 25 (but downgrades it to "date disputed") over the authentic 27 because:

Anthroposophists [they favour 27] may appear biased as they seem to want to construct a proper incarnation data fitting an esoteric theory about Steiner being in a particular sequence of reincarnations (last update 14 May 2015).

Steiner's chart for the authentic date shows that the conjunctions and oppositions chosen by Verhulst are still within orb (some are wider, some are closer, "MO-O-SA" now approaches a semi-sextile), so his ideas are largely unaffected. But his results remain meaningless.

7.2.1997.2 Astrology is irrational

Jacob Ruijling, *AinO* 10(2), 8-9, 1997.

Astrology is more irrational than most astrologers realise. For example in their 1987 book *The development of personality*, Greene and Sasportas claim that a person's inner nature and pre-dispositions can be seen in their birth chart, which implies that a birth chart gives genuine information about its owner. But no evidence for this is given. Instead the information has to be accepted on faith. They reduce astrology to something like a religious belief in which criticisms and empirical investigations find no place.

7.2.1997.3 Assessing arguments for and against astrology

Angela Bourque, *Astrology: An assessment of its validity, appeal and potential harmfulness*. MA thesis, Department of Religion, Carleton University, Ottawa 1997. An informed and impartial assessment with 57 references.

The author was attracted by astrology and had a strong interest in it, but her research had uncovered much dispute about its validity. The arguments on both sides seemed to make sense but she was uncertain how to resolve them. Moreover, as part of her undergraduate degree, she had conducted a small study (50 subjects) of sun signs vs actual personality assessments:

What I found was that those who had a knowledge and interest in astrology tended to choose character traits for themselves that corresponded to their sun sign descriptions, while those who did not have such an interest did not. This left me with the feeling that perhaps the perception that astrological descriptions were accurate was more of a psychological phenomenon than a validation of astrology itself. I decided it would be interesting to pursue this question further and chose it as the topic of the present thesis (quote is from her Preface).

But because she had tended to support the pro side, an impartial approach was essential:

I decided that the best way to do this was to look at both sides of the debate fairly by outlining the arguments of several works devoted to this question. ... my own academic background is quite diverse, as I have two undergraduate degrees [Psychology with a minor in English Literature, Religious Studies with a minor in Philosophy] and have also taken several courses in Sociology/Anthropology, among other subjects. It also seems to me that to better understand

something it is best to look at it from several different angles. That is especially true for something such as astrology which seems to possess elements of more than one field of interest, in this case religion and science or astronomy.

She addresses arguments about validity, appeal and potential harm by carefully reviewing the following 7 works chosen for their credentials and approach. In () are the number of pages devoted to each work and her general assessment. One page is about 700 words:

Robert Parry 1991. *In Defense of Astrology: Astrology's Answers to its Critics* (3 pp, weak, unconvincing).

John Anthony West 1992. *The Case for Astrology* (8 pp, more persuasive).

Percy Seymour 1990. *Astrology: The Evidence of Science* (4 pp, mostly theoretical).

Maggie Hyde 1992. *Jung and Astrology* (5 pp, assumes Jung's ideas are valid).

Eysenck & Nias 1982. *Astrology: Science or Superstition?* (8 pp, open-minded, non-confrontational).

Culver & Ianna 1988. *Astrology: True or False? A Scientific Examination* (6 pp, representative of most scientists).

Ankerberg & Weldon 1989. *Astrology: Do the Heavens rule our Destiny?* (8 pp, scholarly, Christian but not preachy).

Her conclusion is that:

Each side of the debate for and against astrology is not without its strengths and weaknesses, but all of these must be weighed [via their associated evidence] before a fair decision concerning the validity of astrology can be made.

She does not identify any particular weaknesses in the arguments against astrology other than the difficulty of confirming the existence of demons, which of course is not always relevant. The nearest she gets is the argument cited by astrologers, namely that critics are ignorant and have no understanding of astrology, except (as she points out) the argument backfires:

This [ignorance] appears to be their explanation for why these critics do not agree with their positive assessment of astrology's validity. This does not seem to be the case, however. The critics mentioned in this paper demonstrate a very detailed understanding of astrology. ... Astrologers may not want ... to admit that intelligent, thoughtful people could reject astrology after really taking a close look at it. Instead they accuse them of being closed-minded or having a one-sided view of reality, based solely on reason rather than on intuition or the irrational [which they embrace].

But she is clear about the weaknesses in the arguments for astrology, where one concern is:

how astrology is supposed to work. Astrologers and supporters of astrology seem to use whatever explanation suits their purpose. If one [explanation] is being criticized, they will point to the possibility of another and seem to move from one to another in a way that appears rather suspect. They often make the claim of wanting to be viewed as scientific and yet refuse to be pegged down in ... such a way as to be open to disproof.

The evidence cited for astrological effects was Gauquelin, with Jung in a distant second place. She felt this was a disappointment for readers hoping to find something more persuasive, and summarised the situation in these words:

astrologers want the best of both worlds. ... many astrologers argue that experience with astrology is the basis for their assessment of its validity. They feel that anybody who gives astrology a fair chance will become a believer. However, not only is that not always the case, but they also fail to consider ... that astrology could seem to work without it actually possessing validity. There needs to be some sort of way that astrology could be examined that would allow at least a measure of objectivity. Without that, belief in astrology can only be a matter of faith. If it is true that astrological beliefs have become a sort of pseudo-religion, then astrologers and their supporters need to be clear in presenting it as such. It is very misleading to introduce to others something that is a personal belief system as though it was well-established fact (the above is from her Chapter 4).

As to why astrology is so popular, the reasons are complex. Its appeal seems to be:

in part, because of the socio-cultural atmosphere we are presently living within, and in part, simply because people want to believe in it. It seems a part of human nature to need to believe in something beyond the material everyday world. In our culture, where moral relativism* is embraced so enthusiastically, a "something" that does not dictate what is right or wrong (like astrology) is often seen as more appealing than one that does. [We have seen] how individuals can convince themselves of astrology's validity, without it actually possessing any in reality. People in our society seem less and less concerned with reality, no doubt because our reality seems more and more bleak. The only way to change that, though, is to deal with that reality, rather than hide from it.

[* Moral relativism is the view that moral judgements are true or false only relative to some arbitrary standard, for example views on bribery, or on taxing productive citizens, or on telling lies if it helps someone, depend on who you are. In moral relativism each person becomes their own judge and jury, deciding what is right and good. Not to be confused with matters of scientific fact, which by definition cannot depend on who you are. Thus "the sun is good" depends on who you are and is legitimately open to debate, whereas "the sun is hot" is not.]

But can astrology be harmful? She notes that astrological writings do tend to give:

the impression that what should be encouraged is concentrating on oneself, rather than spending time helping others. ... This certainly gives weight to the argument that astrology is a harmful belief system,

But is it dangerous? This may be too strong a word:

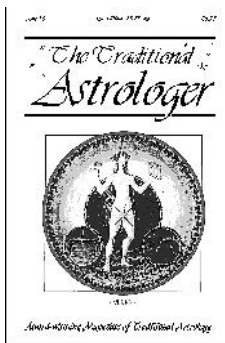
There certainly are current trends that could be seen as greater threats to our society than the increasing popularity of astrology. [Nevertheless] anything which causes depression, suffering and pain for others should be of concern to us, and the weight of evidence seems to be that deep involvement in astrology and other occult practices falls into this category. Therefore we can conclude that although astrology does not actually possess any real validity, its appeal and potential negative effects are real and should not be ignored by any of us (this is the author's concluding statement).

Comment We have found no critiques of her thesis, but (as shown by the present book) the research published since the author's 1997 thesis date has amply confirmed her conclusions. The weak evidence she cites in favour of astrology is now even weaker, while the entrenched positions held by astrologers remain unchanged.

7.2.1997.4 The Truth of Astrology competition

Geoffrey Dean *Correlation* 16(2), 40-56, 1997. A summary of each entry, and some implications for researchers

In 1997 the AA Newsletter *Transit* invited astrologers to submit "articles of up to 3000 words which put forward a case for, and demonstrate, the Truth of Astrology – whatever that may mean to the author" (July issue page 27). Prizes of £200, £100 and £50 were sponsored by the AA, the Lodge, *The Traditional Astrologer*, and Dr Norman Hurst, Britain's oldest astrologer. A total of 29 entries were received, including 8 from outside the UK, some from big names, which was good news because prize competitions have seldom attracted much interest, see 8.3.5. Even the 1983 \$US5000 superprize received only 34 entries, which suggests that this time the astrologers felt they were on safer ground, see 8.9.10.2. The Truth entries were kindly made available by Deborah Houlding (TTA) and Nick Campion (AA).



Of the 29 entries. 12 concluded that the truth delivered by astrology is effectively **meaning** (it provides meaning, it enriches life, it does good) rather than factual truth, which due to the fallibility of astrologers was held to be undeliverable. They argued variously that astrology delivers meaning because it exists, astrologers say so, it is simple, it gives us control, it is consistent with modern-day physics, correspondences exist, *as above so below* is unassailable, and it cannot lie. Some rested on circular arguments (astrology is true because it is true).

The other 17 entries focussed on **factual truth**, either by implication, observation, statistical tests, or chart interpretations, to show that astrology delivers truth ie verifiable facts. They focussed on lunar effects in oysters, the prenatal epoch, centuries of rich experience, tests of elections and relationships (all reporting $p \leq 0.05$ via invalid procedures), and how evidence for the truth of astrology is everywhere. Thus relevant charts fit Romanian events, earthquakes, world affairs, human character, nervous breakdowns and dogs.

That the entries saw truth as either meaning or factual was encouraging, because failure to recognise the difference has created much unnecessary dispute, see 7.7.1990.4 and 7.7.1995.2. But they still contained a disturbing level of error even among the big names. Many assertions, for example those linking suicide with the full moon, or the prenatal epoch with validity, were wrong. Gauquelin's results were invariably misrepresented. Some entries correctly noted that science cannot discover absolute truth, but without noting that nothing can.

Nearly all entries failed to recognise that no conclusions can be drawn from hits alone. Thus the supposed fit between charts and Romanian events, earthquakes, world affairs, human character, nervous breakdowns and dogs is meaningless – the question is whether they fit their actual charts better than control charts, but answers were nowhere in sight. Also missing

was an awareness of the perceptual, inferential and small-sample biases (hidden persuaders) to which people in general, and astrologers in particular, are abundantly prone. To avoid such problems we do not have to embrace mechanism, or materialistic science, or other supposedly anti-astrology approaches. All we have to do is think clearly and count the right things. Which is nothing special. Many people do it all the time, especially when shopping.

Implications The muddle and mistakes that go unnoticed when astrologers preach to the converted will no longer do. Eliminating muddle and mistakes is of course no more than any discipline has to achieve if it is to become established, so it should not be impossible for astrology to do the same. Indeed, since the cover of the *Astrological Journal* for September-October 1997 could announce "4000 years of astrological education", critics might wonder why it has not already done so. **Comment** The term *cherished beliefs* comes to mind.

7.2.1997.5 Top astrology books

Source: *Astrological Journal* 39(5), 19-25, 1997 and 39(6), 83-84, 1997.

In 1997 the editor of the *Astrological Journal* emailed members of the UK Astrological Association asking them to list their favourite top three astrology books of all time. The responses (number was not stated but was perhaps around 100) often gave more than three. They were:

1 Ebertin, *Combination of Stellar Influences* 1972. **2** Greene, *Saturn A New Look at an Old Devil* 1976. **3** Rudhyar, *The Astrology of Personality* 1970. **4** Hand, *Planets in Transit* 1976. **5** Michelsen, *The American Ephemeris for the 20th Century* 1980. **6** Mayo, *Teach Yourself Astrology* 1964. **7** Baigent, Campion, Harvey, *Mundane Astrology* 1984. **8** Arroyo, *Astrology Karma and Transformation* 1978. **9** Addey, *Harmonics in Astrology* 1976. **10** Campion, *The Book of World Horoscopes* 1988.

None are before 1964 or after 1988. Since the list is supposed to reflect the top books of *all time*, whatever happened to Ptolemy's *Tetrabiblos*? And why are they all in English? This led Patrice Guinard (1957-2021), curator of the CURA website (Centre Universitaire de Recherche Astrologique, or International Astrological Research Centre) to point out that none of the ten books would appear among his 30 favourite (historical and ancient) astrological books of all time. His own top ten non-historical books written in English in the 20th century were:

1 Dean, Mather et al, *Recent Advances in Natal Astrology* 1977. **2** Rudhyar, *The Astrology of Personality* 1936. **3** Seymour, *Astrology The Evidence of Science* 1988. **4** Fagan, *Astrological Origins* 1971. **5** Elwell, *The Cosmic Loom* 1987. **6** Hand, *Essays on Astrology* 1982. **7** Llewellyn, *A to Z Horoscope Maker and Delineator* 1910. **8** Cornelius, *The Moment of Astrology* 1994. **9** Pottenger et al, *Astrological Research Methods* 1995. **10** Addey, *Harmonics in Astrology* 1976 (from cura.free.fr/docum/15topboo.html, only Rudhyar (speculation) and Addey (investigation) appear in both lists).

Guinard's top ten astrology books in French were:

1 Nicola, *La condition solaire* 1965. **2** Gauquelin, *Les hommes et les astres* 1960. **3** Niroman, *Traité d'astrologie rationnelle* 1943. **4** Krafft, *Traité d'astro-biologie* 1939. **5** Verney, *Fondements et avenir de l'astrologie* 1974. **6** Barbault, *Les astres et l'histoire* 1967. **7** Selva, *Traité théorique et pratique d'astrologie généthliaque* 1900. **8** Santagostini, *L'horoscopie cartisienne* 1965. **9** Senard, *Le Zodiaque, clef de l'ontologie, appliqué à la psychologie* 1948. **10** Dax, *Psychologie zodiacale* 1950. [ibid]

In 2014 Philip Graves updated his survey of the most frequently held astrology books listed at LibraryThing.com, which is a collective catalogue of book data imported from more than 1000 libraries worldwide and six national Amazon sites. In 2017 it had 100 million books listed. None of the above lists contain a sun sign title. But of the top thirty out of Graves's top 125, eighteen are sun-sign or similar. Here are the rest with the number of holding libraries (Linda Goodman's *Sun Signs* was in first place at 778, her *Love Signs* in fourth place at 562).

1 Julia and Derek Parker *Parkers' Astrology* 275. **2** Robert Hand *Planets in Transit: Life Cycles for Living* 222. **3** Frances Sakoian and Louis Acker *The Astrologer's Handbook* 206. **4** Richard Tarnas *Cosmos & Psyche: Intimations of a New World View* 199. **5** Liz Greene *Saturn: a New Look at an Old Devil* 174. **6** Stephen Arroyo *Astrology, Karma & Transformation* 166. **7** Otto Neugebauer *The Exact Sciences in Antiquity* 130. **8** Isabel M. Hickey *Astrology: A Cosmic Science* 123. **9** Stephen Arroyo *Astrology, Psychology and the Four Elements* 121. **10** Stephen Arroyo *Chart Interpretation Handbook* 119. **11** Robert Hand *Planets in Composite: Analyzing Human Relationships* 113. **12** Llewellyn George *The New A to Z Horoscope Maker & Delineator* (Revised and Enlarged Edition) 112.

Coming in at #40 Ptolemy *Tetrabiblos* 94. #47 Dane Rudhyar *Astrology of Personality* 89. #118 Margaret E. Hone *The Modern Text-Book of Astrology* 49. Interestingly John Addey's *Harmonics* was not in the top 125.

We could find no comparable surveys of astrology books in other European languages.

7.2.1997.6 Does synchronicity explain meaningful coincidences?

TC Rowe et al. Motivation and meaningful coincidence. *Journal of Scientific Exploration* 11(4), 487-498, 1997. Jung had postulated synchronicity to explain unusual but meaningful coincidences that otherwise seemed inexplicable.

Random pairs of same-sex college students, 18-19 years old and unknown to each other, were each given 17 topics (names, places, dates, health, hobbies, interests, education, experiences, food tastes, habits, temperament, career plans, art, music, clothing, religion, possessions). In 45 minutes they had to find as many mutual coincidences as possible. For 36 pairs of each sex the mean was 37. With duplicates removed the total was 728 for females and 818 for males.

A new set of 114 male and 164 female students were divided into same-sex pairs. They had to pick items from the relevant list that were a hit (ie true for them). The mean % hits were:

Type of item	Topics with the most unusual items			
	Experiences	Family	Habits	
Unusual items*	33	26	20	) ie no great
Remaining items	21	16	39	) difference

* Rated true by $\leq 22\%$ of students, so for 2 students paired at random p of a hit = $0.22 \times 0.22 = 0.05$

None of the participants were related or knew each other, so unusual hits could not involve synchronicity. "However, had there been an actual connection between the pairs ... many of these [unusual hits] would likely be labelled synchronicities by the parties involved" (p.494). So there was no support for synchronicity as an explanation for meaningful coincidences.

Comment If the different kinds of events a person could potentially experience in a day is about the same as their vocabulary, ie 30,000, and they typically experience 300, the chance of a miss between two people is $[(30,000-300)/30,000]^{300} = 5\%$, ie synchronicity is to be expected, thus confirming the above. The universe is not sending us coded messages after all.

7.2.1998.1 How clients react to fake readings

Kari Coleman. My psychic adventure. *Swift* [JREF Newsletter] 2(3+4), 1 & 6-9, 1998. Coleman is an actress pretending to be a Tarot reader for Penn & Teller. She knew nothing about Tarot, so she bought Tarot cards and read books on cold reading, Tarot, astrology, graphology and palmistry just to learn the jargon. So her readings were 100% fake and provide interesting controls for real readings. Her account has been abridged to one-fifth of its original length:

She describes a typical day of being taped giving fake Tarot readings:

I would start with "The cards tell me a story. I receive pictures and images that will not mean anything to me, but perhaps are very significant to you. If you remain open, then we can explore together and find insight into your destiny". Then I launched into the usual [Barnum] statements that would hook them, and started making guesses based on my observations and their feedback. One person wrote on a comment card that I was amazing, and two people summoned the manager to tell him how I knew stuff I couldn't possibly have known.

All my acting training was paying off. I was getting really good, really fast. I ended every readings with stuff like "You have good instincts. Trust yourself. You make your own magic." I couldn't believe how easy it was to make people believe I could "see". It freaked me out. I had to keep taking breaks just to get my head together.

People want to hear positive things about themselves. That's all it is. Tell them what they want to hear. Make some guesses and keep going when you miss. One by one, I read people's cards and then asked them on camera how suited to them the reading was, or how much it applied only to them. They all responded favorably, and in each case I called for the cameras to shut down. I then took hold of their hand and explained exactly what had just happened. I looked them right in the eye and told them everything. I said, "What you have experienced is called a cold reading. I am not in any way psychic. The techniques I used on you are the same techniques that all psychics use. And you are not alone. I've said the exact same thing to all these other people and they all responded favorably".

Now some insights you won't find in astrology books, at least not so clearly stated:

What you cannot know until you've done it is that when you are reading for someone, they trust you. They open themselves up to you, and you tell them nice things about themselves. Sometimes they offer up very personal hopes and dreams. This happened several times today. I then had to face them and tell them I'd lied. It was the hardest thing I've ever done. But people were happy to talk. They just wanted someone to listen to their problems, or share their

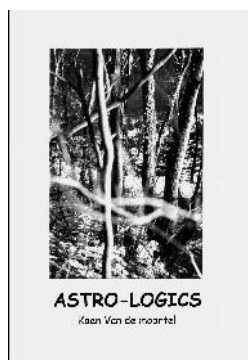
hopes and dreams. They wanted to go over funny stories about a loved one they'd lost or just sit and remember them out loud with someone. When I took away the voodoo, the fact that we had "shared" didn't go away. There is all the joy you need in human interaction. I really made sure that after we were done I gave each person, for lack of a better way of saying this, a part of me. I felt I had taken away something fake and I needed to replace it with something real. Human contact, human caring, human interaction.

Comment Other control readings are provided by reversed charts 7.2.1987.4 and wrong charts 8.9.9. Unless, contrary to 8.6.10, authentic readings can be shown to be more successful than controls there is no reason to suppose that astrology "works" because of astrology.

7.2.1998.2 Can astrologers pick politicians from painters?

Suitbert Ertel, *Correlation* 17(1), 3-8, 1998.

A German astrologer had published an improved method of chart reading and asked me to test his skill. So I gave him accurately timed birth data for 20 Scottish politicians and 20 Scottish painters, mixed together in random order, copied from documents at Edinburgh's birth registration office. He was confident of being able to tell which was which, but his judgements were no better than chance. The challenge was then posted on the internet. Eleven experienced astrologers asked for the birth data and sent in their judgements (five more asked for data but did not respond). Their methods were rather diverse and all seemed to be seriously applied. But none performed significantly better than chance, which was 10 hits for politicians and 10 hits for painters. For politicians the range was 7–13 hits (four scored 12 hits $p = 0.25$ and one scored 13 hits $p = 0.13$). For painters the range was again 7–13 hits (again four scored 12 hits and one scored 13 hits). Nor did they succeed as a group (mean 10.7 hits, $p = 0.75$, effect size 0.068). Their mean agreement (0.056) was equally poor. The result is consistent with previous studies [see 8.6]. Includes birth data.



7.2.1998.3 Book review: *Astro-Logics*

Jan van Rooij, *AinO* 11(1&2), 33, 1998. A review of Koen Van de moortel's *Astro-Logics* (2nd edition, self-published in English, Ghent Belgium, 2002), one of the few books by an experienced astrologer that is critical of astrology.

The author (an MSc in physics) looks at popular topics such as tropical vs sidereal zodiacs, house systems, and aspects and orbs. In each case he uncovers serious theoretical shortcomings, so he concludes that modern astrology needs to be based on facts rather than the traditional myths. However there are statistical problems typical of astrology such as aspect frequencies. The yes/no answers provided by horary astrology should make it ideal for testing, but horary astrologers strongly disagree on the rules said to be based on years of experience, so "something is wrong with the way most astrologers draw conclusions from experiences" (p.102). Included is his own highly original empirical study into the attraction between people (see 8.4.4), which demonstrates how expensive resources are not essential for good research. The book should be mandatory reading for astrologers. It should bring astrologers and researchers more closely together, even though Van de moortel is not convinced that astrologers are prepared to let this happen.

7.2.1998.4 Master astrologer Leo Knecht tested by van Rossem

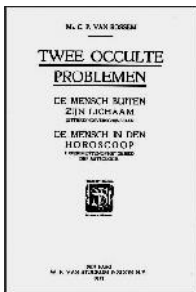
Rudolf Smit, *AinO* 11(1&2), 2-21, 1998. In English *Correlation* 16(1), 3-18, 1997.

Leo Knecht (1882-1957) was one of the Netherlands' most eminent astrologers. He was tested in a 1933 blind trial by lawyer Cornelis Van Rossem, who gave him the birth data and gender (and nothing else) of ten subjects selected for precise birth times, distinct characteristics, and the availability of someone who knew them well. Knecht (pronounced K'nekt) had to describe characteristics that could be verified, and had to avoid anything that was general, ambiguous, or hard to verify. In some cases Knecht was asked to focus on particular issues such as career or health, or whether the subject had a very unusual character trait. As a precaution, and unknown to Knecht, Van Rossem had altered the birth co-ordinates very slightly, which made no

significant change to the chart but prevented identification of the registry office and therefore identification of the subjects by inspection of registry records. In his 1933 book *Twee occulte problemen* [Two occult problems, see below], Van Rossem presents Knegt's ten readings in columns side by side with his own comments and those of the independent assessor.

Knegt's interpretations were found to be both accurate and at times amazingly specific, certainly more specific than most astrologers today would consider possible. For example his correct prediction that one female subject would find a position on a passenger ship could hardly be more specific considering that (1) in those days not many women had paid positions, (2) the subject never had a job before, (3) the position of stewardess on a passenger ship was certainly much harder to come by than the position of office clerk, and (4) Knegt did not use Pluto since it had then hardly been introduced into astrology, nor did he use midpoints or other modern ideas – his interpretations were largely based on planets in houses. Similarly he correctly identified a formidable swindler, a prominent inventor, marked nervous disorders, and long-term troubles due to swollen feet. In effect Knegt seems to have been living proof of the impossible. So how did he do it?

For its time the Van Rossem test was quite good but by today's standards there are many deficiencies. For example, it was not double blind and it could have been influenced by three kinds of artifact: (1) Those that Van Rossem was unaware of because he was a lawyer and not a psychologist. (2) Those that nobody was aware of because it was the early days of experimental psychology. (3) Those that we ourselves are unaware of because Van Rossem does not give enough detail to answer our questions. For example, was all of it done by post, were there time limits, where did he get his data and his second assessor, did anyone check that the printed results were identical to the original records, might Knegt be already familiar with some of the charts (at least four of the subjects were public figures), and so on. We do not know, so we are unable to draw conclusions.



Left: *Twee occulte problemen*. One of the two problems is described above. The other is phantasms, out-of-body experiences, and survival beyond the grave, for which Van Rossem gives a review of opinions and evidence that fills 60% of his 213-page book.

Right: Leo Knegt around 1950.

To try and find out how Knegt did it, I took the birth data for 5 of his subjects to see if readers could match them to (1) the case histories, (2) correct specifics from Knegt's interpretations, (3) Van Rossem's comments. For example they had to pick the chart that matched (1) The case

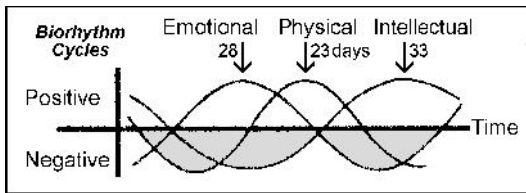
history *A public and typical social figure; the native was a well-known speculator; a marked ascent in life followed by an inglorious end.* (2) These correct specifics *Big spender. Short-lived role as author. Solid relationships in political and economic circles.* (3) These Van Rossem comments *Everything I asked for was in the interpretation. Even the special talent was hit right on the head. Also the psychological description is excellent.* The point is, in each case Knegt was successful and the way he was successful is shown in detail, so astrologers cannot argue that the test is unrealistic. I gave them a year in which to reply. **Comment** For the disappointing results see 7.2.1998.7.

7.2.1998.5 Biorhythms and the grand delusion of experience

R Chaffin and J Skadburg. Effect of scoring set on biorhythm data. *Journal of Applied Psychology* 64(2), 21-217, 1979.
 TM Hines. Comprehensive review of biorhythm theory. *Psychological Reports* 83, 19-64, 1998. Three-cycle biorhythms were enormously popular in the 1970s with various books claiming that wonderful (or dreadful) events would occur on days easily calculated by biorhythm theory. Like astrologers, advocates of biorhythms fit cycles to events (and vice versa) and are convinced they work. But biorhythms did not last. The reason has an important message for astrologers.

A biorhythm two-cycle theory was independently proposed in the 1900s by Berlin surgeon Wilhelm Fliess (1858-1928) and Viennese psychologist Hermann Swoboda (1873-1963). In

the 1920s a further cycle was added by Viennese engineer Alfred Teltscher, and the resulting three-cycle version became hugely popular in the 1970s. It holds that every person is subject to 3 cycles – a 23-day physical cycle, a 28-day emotional cycle, and a 33-day intellectual cycle.



The cycles are exact, never change, and are set in motion at the moment of birth. Performance is said to be better in the positive phase, worse in the shaded negative phase, and is especially bad when the phase crosses from positive to negative called a critical day. Therefore by charting these cycles we can determine which days are propitious and which days are not. Hence their appeal.

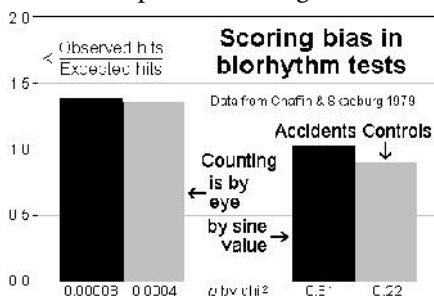
The three biorhythm cycles repeat after $23 \times 28 \times 33 = 21,252$ days or 58.2 years. During this time there are 3982 days with one crossing from positive to negative, 336 days with two, and 8 days with three, in all an expectancy of 4326 critical days, or 20.36% of the total.

In 1979 Chaffin and Skadburg noted that the theory was popular in the field of industrial safety but had given conflicting results. So they looked at 140 accidents recorded in three factories (meat packing, grain processing, making auto parts) during December 1975 through January 1977 to see how well they coincided with critical days calculated from each victim's birth date. And how the results compared with a control created by randomly pairing birth dates and accident dates. If a person had more than one accident, only the first was used.

For each accident victim a computer printed five lines showing the accident date plus two days on either side, with letters showing positions of the intellectual, emotional and physical cycles. The nature of the accident day (ie critical or non-critical) was then judged by eye :

Date	↓ Letters (printed by computer) indicate biorhythms ↓																								
8 / 28 / 76	I			P																					
8 / 29 / 76	I				P																				
8 / 30 / 76		I				P																			
8 / 31 / 76			I				P																		
9 / 1 / 76				I				P																	
From Chaffin & Skadburg 1979																									
Accident	Hour	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

The computer also printed a second version showing the three cycle positions as their sine values for the first and second half of each day, which of course are zero when their phases cross from positive to negative. So a sine value of zero for either half of the accident day indicated a critical day (hit), while other values indicated a non-critical day (miss).



The authors found that the counts made by eye were significantly more positive than the counts made by sine value. There was no significant difference between accidents and controls, so it was not explained by a bias in favour of accidents. Nor was it explained by births occurring early or late on the birth date (birth times were unknown), because the hits on the days before and after, and on 2- or 3-crossing days, did not differ significantly from expectancy.

The authors concluded there was a bias due to *looking for hits* (now known as confirmation bias). To test this conclusion they gave nine psychology students the by-eye printouts for 47 accidents randomly selected from the $N=140$, and told them to identify hits as accurately as possible (ostensibly as a test of computer graphics; biorhythms were not mentioned). Their hit rates were similar to the by-eye rates previously obtained by the authors, thus confirming their conclusion about scoring bias. The conclusion was further confirmed by the second author, who analysed 30 of the accidents using curves drawn by hand on the small charts provided by biorhythm expert George Thommen in his famous book *Is this your day?* revised edition 1976, the first English-language account of biorhythm theory. Here the hit rate for both accidents and controls was 50%, very much higher than the expected 20.36%. The high rate was explained by the small charts producing more borderline

cases and therefore more opportunities for the scoring bias to find hits. The bias *looking for hits* certainly applies in astrology (few astrologers look for misses).

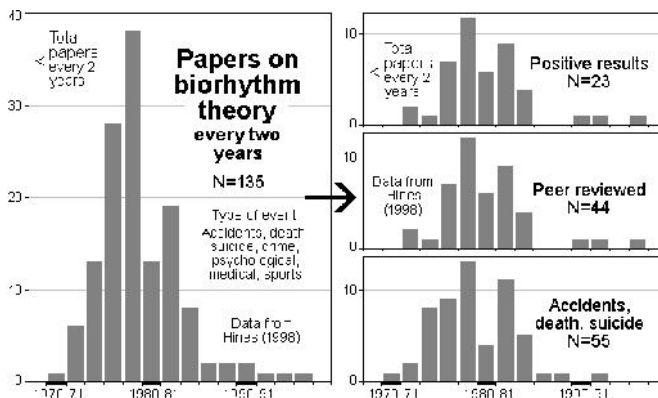
The authors conclude that their results:

provide a possible explanation for the inconsistency of the results reported in the biorhythm literature. Future investigations should avoid the possibility of scoring bias by using a numeric scoring procedure or should ensure against the operation of such bias by blind scoring of experimental data and control data" (p.217).

Their study was made at a time when visual methods were the norm for assessing biorhythms. The same year a critical review of nearly 40 biorhythm studies found that:

The conclusion of the numerous well-done studies that have examined the validity of biorhythm theory is clear – there is no evidence to support the theory. This should not be surprising, since, although there are many well-documented biological rhythms (not biorhythms), none are of the fixed, mechanical, and unchangeable type that the three biorhythm cycles are supposed to be (Hines, Biorhythm theory: a critical review, *Skeptical Inquirer* 3(4), 26-36, 1979).

Twenty years later Hines updated his review to include 135 biorhythm studies, both published and unpublished (a PhD thesis or a government report counts as an unpublished study). The results showed how research interest disappeared once the lack of support was confirmed:



Left: The number of studies plotted against year rises quickly to a peak around 1979, showing how researchers were attracted to this new field of study, only to fall almost as quickly when no clear support was found.

All this despite many studies, many topics, and generally large samples – median N = 137 cases, range 3-118,560, total 342,781.

Right: The same rise and fall applies regardless of how the studies are selected, whether (from top) by positive results, peer review, or topic. Which confirms how research interest disappears when there is insufficient support to justify further work.

Hines points out that this fairly rapid rise in research on a topic, followed by a decrease until the topic receives essentially no further attention, is characteristic of a pathological science such as N rays and polywater. Except that:

Support for biorhythms was often reported by nonscientists such as safety personnel who had little training in experimental methodology or statistical analysis. ... this often led to serious errors that caused several authors to think that they had found evidence for biorhythm theory when, in fact, they had not (p.31).

The errors included failure to cite supporting studies, failure to provide supporting evidence, failure to adequately describe procedures, failure to calculate outcomes correctly, and failure to apply statistical analysis. Their experience that biorhythms seemed to work was a delusion – in fact, given the enormous popularity of biorhythms, a grand delusion. The ten-year rise and fall in biorhythm publications is not dissimilar to that in astro-counselling, see 1.3.2.

Hines concludes:

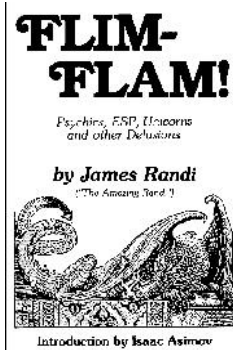
Biorhythm theory ... made numerous specific and easily testable predictions. One of the major reasons that the theory fell from favour so rapidly was the fact that these predictions were tested and found wanting (p.57).

Comment In this example the worn excuse that scientists are unwilling to look at evidence that would change their fixed minds is clearly wrong. And despite the general loss of interest, a later study could still address untested areas. For example Joncas et al, *Journal of Alternative and Complementary Medicine* 17(2), 143-146, 2011, applied biorhythm theory to acute myocardial infarction without success despite their very large sample of N=11,395.

As noted by Hines (1998), *genuine biological rhythms* such as circadian ("about 24 hours") are quite unlike biorhythms. They do not begin at birth (they begin in embryonic life), they vary

between individuals, and they have clear physiological origins. Other cycles in a general sense are experienced by most people, especially sports stars whose form varies between peak and off-peak due to diet, weather, over and under training, and of course creative writers suffering from writer's block. But the biorhythm story is not yet over:

In his 1987 book *Flim Flam!* James Randi had George Thommen personally prepare biorhythm charts for Randi and his secretary. Several listener's to Randi's radio programme had asked him how to get such charts. So he chose a woman who had agreed to accept a free chart in return for keeping a day-to-day diary to check its predictions for two months. The results were interesting:



At the end of the two months she telephoned to tell me ... the chart had been "at least ninety percent accurate" ... [But on checking] we discovered that she had been sent *my* chart, not the one intended for her. I blamed the whole thing on my secretary ... and promised to send her the correct chart to check against her diary. The very next day she called to report that this one was *even more accurate* ... We were thrilled, until we checked further, and I announced that – by mistake, of course – she had received *my secretary's* chart ... the woman hung up the phone (p.165).

Randi noticed how proponents have introduced variations such as harmonics, personal differences – some people are subject to biorhythms

but others are not (now they tell us) – widening the influence to include the days before and after, and adding further cycles such as a 38-day intuition cycle and a 53-day spiritual cycle. But as in astrology it was all speculation. There was no scientific interest. He concluded:

It is one of the purest – and simplest – forms of idiocy to assume the mantle of logic and science (p.172).



But the idea that biorhythms were relevant to compatibility had not escaped attention. It led London's *Girl About Town* to set up a test in August 1992 (over-stating the case as being based on "100 years of Biorhythm research") in which they computer-processed over 500 eager volunteers to find the three couples best matched by biorhythms. The couples were to be tested by an expensive night out on the town, hence the eagerness. Two couples did not hit it off, the third exchanged phone numbers: "One out of three ain't bad". Interestingly when all six volunteers met prior to their dates, two of the four non-hits got mutually interested enough (he bottom, she top right) to later exchange phone numbers: "Perhaps the computer got its wires crossed". Evidently a much bigger pool than 500+ was needed! (London's *Girl About Town*. 3 August, and 24 August 1992 pictured).

Also not escaping attention was the possibility of links between biorhythms and nature. The famous Italian medical surgeon Giuseppe Zoppis was interested in the biological effects of planets and the weather. In his 1979 book *Sistema di previsioni a lunga scadenza meteorologiche* [Long-term meteorological-biological forecasting system], 172 pages, 34 references, he sees some support for biorhythms in the similarity between: (1) The 28-day *physical cycle* and the 27.275-day solar synodic period, the 27.3215-day lunar sidereal period, and the 29.53-day lunar synodic period. (2) The 23-day *emotional cycle* and the 16th harmonic of the annual cycle ($365.256/16 = 22.83$ days). (3) The 33-day *intellectual cycle* and "a component of the geometric progression of ratio 3, a submultiple of the principal wave which has a period of 21,950 years", ie $(21,950 \times 365.256/3^5) / 1000 = 32.993$ days (p.167). Yes, numerology can succeed even when the premise is invalid – an act that astrology finds easy to follow.

In his article on biorhythms in M. Shermer (ed), *The Skeptic Encyclopedia of Pseudoscience* Volume One 2002:54-56, Argentinian chronobiology professor Diego Golombek concludes:

As is the case with astrology and other pseudoscientific approaches to human behavior, the relative strength of biorhythms theory is probably based on the subjective validation of advocates (p.56).

Subjective validation, also known as personal validation, is validation made not by controlled tests but by personal experience. Here something that *seems* to work is proof that it does work, even though the only thing actually working may be hidden persuaders. The term comes from Bertram Forer's 1949 study "The fallacy of personal validation: A classroom demonstration of gullibility", *Journal of Abnormal and Social Psychology* 44, 118-123, 1949. His demonstration used 13 statements taken from a newsstand astrology book. The "personal validation" in the title refers to the process of looking at a statement, seeing that it fits, and concluding that the system works. Just as astrologers do every day. But such conclusions are probably delusions.



Indeed personal validation even applies in situations where it might seem highly ineffective, as in bloodletting, a medical practice as old as astrology. For many centuries bloodletting was the standard treatment for almost every possible ailment from acne to scurvy and smallpox. It was popular because methods of testing were unknown, it fitted current humoral theories, and (due to personal validation) it seemed to work. Yet it is ineffective for nearly all diseases and is harmful because it can weaken the subject and help infections (7.2.2010.1).

The objection that neither biorhythms nor bloodletting are anything like astrological consulting rooms does not apply to the next example:

7.2.1998.6 Parallels between phrenology and astrology

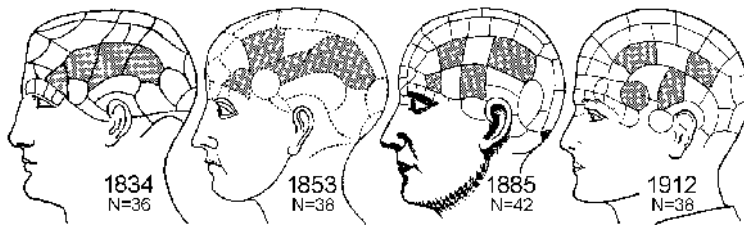
Geoffrey Dean, Parallels between phrenology and astrology, *Correlation* 17(1), 9-40, 1998. Phrenology's history is highly relevant to any approach such as astrology that relies on the testimony of personal experience. But its literature is too concerned with side issues (of philosophy, politics, religion, morality), too tedious to read (wordiness being the style of the day), and too hard to find (here the source is the library of the British Phrenological Society now held by the University of London) to allow easy assessment. Nevertheless phrenology has important lessons for astrologers.

Phrenology (reading character from brain development as shown by head shape) began in the 1800s and quickly became more popular than astrology is today. There are many parallels:

- Phrenology predicted the general tone of life, albeit not specific events.
- It was expressed with complete authority despite the absence of empirical support.
- It lent itself to cookbook interpretations where people felt bumps and ticked boxes.
- It attracted people of intelligence and a vast literature wherein every criticism was furiously attacked.
- It was promoted as a matter not of belief but of *experience*. To try it was to be convinced.

Phrenology flourished because practitioners and clients saw that it worked. So they were unmoved by what critics said, and for the best of reasons – it was "so plainly demonstrated that the non-acceptance of phrenology is next to impossible" (*The British Phrenological Year Book* 1896:64). As in astrology, personal experience carried the day.

How to read heads. For each bump (whose number N, location and meaning depend on which book you read) you guess its development and thus its meaning (based on speculation), which you juggle (more speculation) against all the other speculative meanings to obtain a final assessment of character and destiny. If unsatisfactory, try again. This was phrenology's secret weapon – it was based on an experience that could never be wrong. In the first head,

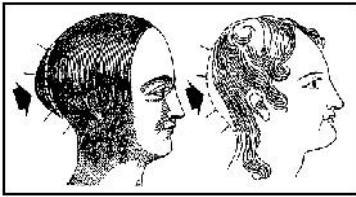


the shaded organs left to right are Tune, Ideality, Acquisitiveness, and Cautiousness, and they touch each other in a tight band. But in each later head they are more scattered until they no longer touch. Did this have any effect? No. It was in any case swamped by synthesis – thus large Amativeness by itself means *well sexed*, but with large Conjugality

warm affections, with large Alimentiveness *enjoys family meals*, with small Ideality *prefers value to beauty*, with large Time and Tune *loves dancing*, and so on (Fowler, *New Illustrated Self-Instructor in Phrenology and Physiology* 1918:76-77). No wonder phrenology could explain everything. The similarity with astrology is unmistakable.

Encouraging phrenological delusion

The approach guaranteed acceptance. People were unable to tell if hits were genuine or were due to circumstances, including not wanting to disagree with an all-knowing phrenologist.



Delusion in phrenology books. Two heads from LN Fowler's *New Illustrated Self-Instructor in Phrenology and Physiology* 21st edn 1918:61,126. They show Parental Love (arrowed) large and small with spikes added to indicate Fowler's organ boundaries, and dashed lines to indicate average contours. The largeness or smallness extends to the organ on each side, which is contrary to the independence required by phrenological theory. If organs were genuinely independent, the surface of the head should resemble a tessellated pavement, but it does not as any bald head will confirm.

Because phrenology seemed to work, it quickly entered all levels of Western life and thought. In Britain, Europe and America its influence was felt especially in anthropology, criminology, education, medicine, psychiatry, art, and literature. In France it also eroded established power and led to wide social changes. In Australia it rationalized the violence against Aborigines and explained the criminality of convicts. Many famous novelists such as Charlotte Brontë, Charles Dickens, and George Eliot (all born around 1815) accepted its principles and exploited them in their fictional characters. For ordinary people in all walks of life, a head reading was often required for employment or marriage. Western astrology never had it that good.

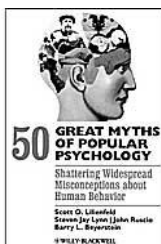
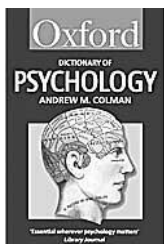
The Boy – what will he become?



Left: Frontispiece to a 72-page booklet provided by J Millott Severn, the last British phrenologist of note, c.1920. The booklet included interpretations on a 7-point scale for each of 49 bumps. For five shillings (about one-eighth of the then average weekly wage) Severn (pictured) would tick relevant tick-boxes. Such books were the norm in phrenology and through Bessie Leo (who was a student of phrenology) would have inspired Alan Leo's own tick-box approach and his production-line horoscopes.

Right: In 1931, after 25 years of work by the machine's inventor, phrenology became possible by machine. The headpiece contained 32 probes, one per brain organ, which allowed 32 two-line descriptions to be printed on a paper roll. The result resembled a sun-sign column. For example: *Suavity – Low Average. You do not make enough effort toward expressing consideration for others. Develop by studying how to please others. Exercise tact.*

But that was then. Today we know that the claims of phrenology are entirely false. Character is not indicated by head or brain size and shape because the brain does not work like that. Nor does character break down into the entities required by phrenological theory. Modern imaging techniques show that the brain involves *processes* such as moving, touching, hearing, and seeing (some localised in distinct areas, others distributed and interactive) but not phrenological *traits* such as Neatness, Curiosity, Love of Children, Attachment to Home, Veneration, and Relish for Food. So a bump here or a depression there cannot mean what it is supposed to mean, even though the underlying philosophy of *know thyself* has undeniable appeal.

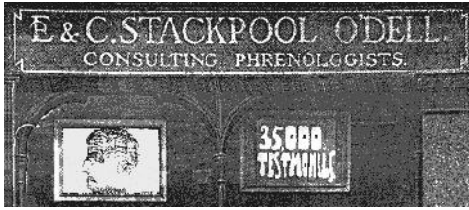


But phrenology for all its faults led to the discovery that brain and mind were associated and that localization existed. It established *function* as a psychological term and the expression of traits on scales such as 1 to 5. And it confirmed the futility of metaphysical speculations about human nature. Which is why phrenology but not astrology appears in histories of psychology.

Phrenology still provides appealing images for modern psychology books.

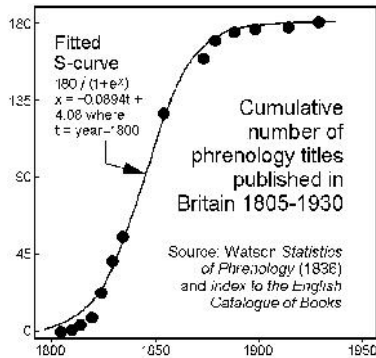
The delusion of testimonials

But how could phrenology become so wildly popular and so influential if it was actually false? Blame it on personal experience, which opens the flood gates for selective use of testimonials, and the flexibility of interpretation (see below). It is why both astrology and phrenology base their claims on personal experience even though few 19th century beliefs about man can match phrenology for the sheer extent of its influence despite the certainty of its invalidity.



This photograph of a famous phrenologist's shop window was taken around 1920 in London. Among other things it features a sign announcing 35,000 testimonials from satisfied clients. Could such testimonials be worthless? Yes! The same is true of any testimonials (including those for astrology) based on uncontrolled conditions. (Photograph is from Derek and Julia Parker, *The Future Now: How to use prediction in your life* 1975:60).

Testimonial delusions were helped by the flexibility of phrenology. When the humorist Mark Twain (under a fictitious name) visited the world-famous phrenologist Lorenzo Fowler (who was also the LN Fowler publisher of astrology books), he was told he had a "total absence of the sense of humour". But on a repeat visit three months later under his real name, he had



"the loftiest bump of humour he [Fowler] had ever encountered in his life-long experience". As before, Fowler had given him "an elaborate chart. It contained several sharply defined details of my character, but it bore no recognizable resemblance to the earlier chart" (see 7.2.1959.10).

The growth of most populations over their lifetime, whether of cathedrals, Christian saints, cars, computers, or phrenology books, traces an S-curve that shows when the end is near. For phrenology this was around 1900. Some people had said phrenology would last forever. In his 1898 book *The Wonderful Century* Alfred Russel Wallace (co-discoverer of evolution) held that "in the coming century phrenology will assuredly attain general acceptance" (p.192). It was all part of the illusion inspired by experience.

Or as the historian of psychology JC Flugel puts it:

By a piece of tragic irony phrenology was the most popular of all the doctrines of psychology in the whole history of the science, and at the same time the most erroneous. It affords a striking example of the danger of erecting a vast superstructure on inadequate observation and inexact methods (*A Hundred Years of Psychology* 1964:36).

Or as Dean and Mather put it:

Astrologers are like phrenologists: their systems cover the same ground, they apply them to the same kinds of people, they turn the same blind eye to the same lack of experimental evidence, and they are convinced for precisely the same reasons that everything works. But the phrenologists were wrong. So why shouldn't critics conclude for precisely the same reasons that astrologers are wrong? (*Astrological Journal* 28(1), 23-30, 1985:25).

Over 35 years have now passed with no reply from astrologers except to dismiss phrenology as irrelevant. But it could be argued that the existence of mutually incompatible systems throughout astrology such as tropical and sidereal zodiacs, all of which are nevertheless seen as factually valid by their users, has already given us a convincing answer.

Phrenology as an art form

Even so, in the 1980s a move was made to re-instate phrenology as an art form. Phreno-artists reject any link between head shape and character, and claim only that by *assessing ourselves in phrenological terms* such as Benevolence, Cautiousness, Ideality, Order, Veneration, and Philo-progenitiveness (parental love) we can achieve a physical, mental and spiritual whole:

People desire to know themselves at intellectual, emotional, unconscious, primitive and spiritual levels. ... Phrenology recognises that man as an entity does not stand alone, but incorporates all these levels and the exterior (Cooper and Cooper, *Heads, or the Art of Phrenology* 1983:100-101).

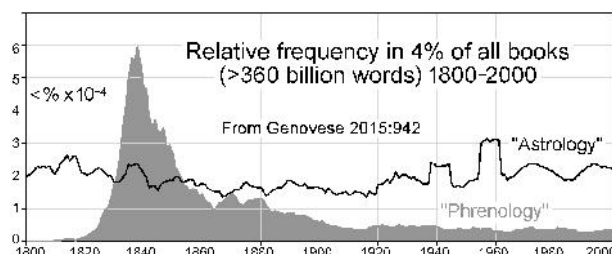
The merit of phreno-art lies in its "fascinating potential for aiding self-realisation ... its antiquity, discipline and deliberate idealism towards self-perfection" (p.104). Indeed, phreno-artists hold that it is useful in almost every situation. Thus it can give:

direction to self-awareness and meaning to life. ... It can help to evaluate such problems as bringing up children, choosing a career, a partner in life, assessing incompatibility and confusion, but above all it is for the self" (p.100).

It could be astrologers describing astrology. But the move to phreno-art lost out to self-help books that had greater appeal and effectiveness. On its own, meaning was not enough. And phrenology tended to attract unceasing parody. An example appeared in the UK's *Independent*

Long Weekend 11 January 1997:2, which suggested how to "improve people's personalities by rearranging their head bumps. With a mallet. Do not try this at home."

The relative popularity of phrenology vs astrology was recently assessed by JEC Genovese (*Psychological Reports* 117(3), 940-943, 2015) via the Google NGram Viewer, a body of words from English language books published between 1800 and 2000. Compiled by Michel et al (Quantitative analysis of culture using millions of digitized books, *Science*, 331(6014), 176-182, 2011), the body includes about 4% of all books ever published 1800-2000, contains over 360×10^9 words, and is searchable. The results for phrenology vs astrology are shown below:



The frequency of "phrenology" shows a marked rise and fall during 1820-1860 while "astrology" has been fairly stable during 1800-2000. Alternative search terms such as "cranioscopy" and "astrological" were less straightforward and did not disrupt the overall pattern. The frequencies plotted are those that exist in books excluding journals and will therefore reflect many things including historical interest. So they are only an approximation to social popularity.

Genovese suggests that the difference in longevity is because phrenology is a failed science (so empirical evidence mattered) whereas astrology is a system of magical thinking with a lasting intuitive appeal that makes it "impervious to empirical evidence" (p.941). See also 7.6.2012.1.

7.2.1998.7 Results of the follow-up Knegt test

Rudolf Smit, *AinO* 11(1&2), 34-35, 1998. A follow-up to 7.2.1998.4.

Only two readers sent in suggestions about how Knegt did it. They did not agree on the signifiers that Knegt might have used, so no conclusion is possible. As for the matching test, I had also advertised it in the UK Astrological Association's newsletter *Transit* in order to reach as large an audience as possible (then perhaps more than 1500 readers), but surprisingly only two astrologers responded. So I appealed to the Australian astrologer Dymock Brose, who had a large worldwide audience with his website and his monthly *Astrologer's Forum* newsletter, which quickly led to a further 19 astrologers responding. The results were disappointing. Most astrologers scored around chance level, namely one hit only. Only two astrologers reached three hits out of five. Overall there were 29 hits vs 21 expected by chance, whereas if each astrologer had equalled Knegt's performance there would have been 105 hits. Among the 21 astrologers there were 208 agreements, slightly less than the 210 agreements expected by chance. The effect sizes were hits 0.095, agreement -0.002.

Comment In 2006 Smit attempted a further follow-up of the matching test via the internet. Eight astrologers responded. One scored two hits, another scored one hit, the rest scored no hits, which overall was worse than chance. Most of them used Chinese astrology. Overall the results are very disappointing because, unlike almost all other tests, the material was known to give amazingly positive results at the hands of astrologer Leo Knegt (at least if we turn a blind eye to the possible problems outlined in 7.2.1998.4). Smit's test was an opportunity for astrologers to demonstrate a much-needed white crow and thus send the skeptics permanently running for cover. But the opportunity was missed.

7.2.1998.8 Re-enchanting the mind with divination

Stephen Karcher. Divination, synchronicity, and fate. *Journal of Religion and Health* 37(3), 215-227, 1998. Also Re-enchanting the mind: Oracles, reading, myth, and mantics. *Psychological Perspectives* 50(2), 198-219, 2007. Karcher is author of the acclaimed *Illustrated Encyclopedia of Divination* 1997 (includes astrology) and five guides to the I Ching.

As early as 1957 anthropologist OK Moore had noted that a magical practice like divination:

is, by definition and reputation, a notoriously ineffective method for attaining the specific ends its practitioners hope to attain through its use. ... [However] the utility of some of these techniques needs to be reassessed. It seems safe to

assume that human beings require a functional equivalent to a table of random numbers if they are to avoid unwitting regularities in their behaviour which can be utilized by adversaries (*American Anthropologist* 59(1), 69-74, 1957).

In effect Moore saw divination as an unknowing act of rational decision making. If the question was "where should we hunt?" random answers ensured that no area was over-exploited. Here Karcher takes this a step further by stressing that divination involves symbols:

By interacting with the symbols your awareness is moved and changed. You learn to see things differently. You become aware of what is hidden ... All divination systems act in this way: they "provide symbols". ... In traditional cultures the transforming and connecting power of a symbol was valued highly (1998:215-217).

							
Heaven	Earth	Thunder	Water	Mountain	Wind	Flame	Lake
Force	Pervading	Great Wielding	Attending	Great Accumulating	Small Harvest	Great Possessing	Displacement
Construction	Help	Preceding For	Grasping	Stripping	Viewing	Prospering	Clustering
Influence	Revering	Strike	Sprouting	Swallowing	Ascending	Growing	Following
Arguing	Leading	Deversence	Gorge	Enveloping	Dispersing	Before Completion	Containing
Retiring	Humiling	Great Exceeding	Limping	Sound	Unbinding	Discouraging	Conjuring
Coupling	Accruing	Preceding	Wailing	Concealing	Conciling	Hidden	Great Exceeding
Conceding People	Intelligence Hidden	Accruing	Already Fording	Adorning	Dwelling People	Radiance	Shining
Feeding	Veiling	Great Filling the World	Attending	Diminishing	Inner Nutr	Exciting	Upper

A classic example is the I Ching, a Chinese system dating from at least 5000 BC. It uses the language of symbols via 8x8 = 64 combinations of broken (yin) or unbroken (yang) hexagrams (six-line figures) for organising and displaying keywords. They were made by counting at random a set of 50 yarrow stalks (or today coin tosses). Meanings are quite elastic and are essentially unchanged since 200 BC. The divined outcome is found by exploring the tension between the inner (lower 3 lines) and outer (upper 3 lines).

Karcher stresses that, to him, the aim of divination is not prediction or problem-solving but:

to weave a spell, to re-enchant the mind, luring it into the realm of the Others [Jung's "architects of dreams and symptoms"] and opening a place for them in our imagination and perception. ... a turbulent hidden language that mirrors our experience (2007:198). [Test the results for yourself by applying random pairs of the above keywords to your own problems. The more seriously you try and the less you know about Barnum effects the better it should work. Thus the UK anthropologist David Zeitlyn (*Journal of the Royal Anthropological Institute* 7, 225-240, 2001) points out that "the I Ching is notoriously opaque and hard to interpret ... What is curious is that the same text may be construed as saying different things on different occasions" (pp.227-228).]

Comment Note the similarity to a birth chart. If we replace the I Ching keywords (*Heaven, Earth, Thunder, Water, Mountain, Wind, Flame, Lake*) with, say, Hone's planetary keywords (*Vitality, Response, Communication, Harmony, Energy, Expansion, Limitation, Change, Intuition, Elimination*), and random hexagrams with random birth charts, we can see the same potential for divination and the same engagement with gods and spirits as described by Cornelius in 7.7.1998.3. Given the longevity and status of the I Ching, we could reasonably claim that (1) divination would offer an ethical future for astrology provided we accept that (2) astrology itself is not a source of knowledge. On the other hand, unbelievers might have problems with the first and believers with the second.

7.2.1999.1 Theosophy and Dutch astrology

Jacob Ruijling, *AinO* 12(1&2), 30-106 [not a misprint], 1999.

A look at Dutch theosophical astrology, karma, reincarnation, and the right moment of birth. Examines the role of Theosophy leader Helena Blavatsky's ideas on the astrologies of Dutch astrologers Thierens, Libra, van Wageningen, Knecht, Ram, and Bunge (all of them also wrote on Theosophy). A connection with karma and reincarnation is found in the need for exact birth times, which is where its correction by the *Trutine of Hermes* finds a place. (The *Trutine* states that the natal Moon is conjunct or opposite the conception Ascendant, and vice versa.) This analysis and discussion of theosophical links with astrology is exceedingly detailed and has over 80 references, most of them Dutch.

7.2.1999.2 An insider's view of astrology books

Andrew Patterson. The following account is from articles that originally appeared in South Africa's *Astrology Today* and reprinted in *Considerations* in 1991 through 1999. Dr Patterson's background is important here, see 7.2.1991.1.

Astrology is a symbolic system where the only thing that matters is whether its statements are

consistent with the symbolism. If they are, then the statements are true because they could be true. But this line of reasoning is quite useless when it comes to anything specific. Whatever the outcome, astrology says only that it will be consistent with the symbolism – which with a little ingenuity can be made to fit anything. This is useful when the truth doesn't matter.

Symbolism brings other problems. If you examine enough chart interpretations you will find wordiness, disorder, vagueness, padding with quotes, fatedness, and a general reliance on symbolism as if it were somehow more than unproven beliefs. The following examples show these problems in action. Where possible they are taken from the astrological literature. Otherwise they come from talks, teaching sessions, and conversations fortuitously overheard.

Planets as influences or qualities (1) *Your luck lies in hidden realms. You will constantly find that you will get help at the last minute from an unexpected source.* Here the unexpected source refers to Jupiter, and the planets are seen as various influences such as *Venus romance*, *Mars energy*, *Jupiter luck*, *Saturn obstacles*. Or "Your Fate in the Stars". Just add padding and you can earn a good living from the gullible. (2) *Your power to expend energy is very high, being trined by the expansive Jupiter.* As usual *energy* refers to Mars. Here the planets are a set of qualities that we may have, rather than some external influence. Both approaches imply that everything is written in the stars and thus discourage the taking of personal responsibility.

Appearance *A short, slender person, not well formed. Long, thin face, thin beard. Chin long with black or dark coarse hair. Narrow chest. Long, small neck. Weak knees, and of a bad gait generally.* This example describes the appearance of Capricorn rising and is taken from Raphael's *The Key and Guide to Astrology* 1905. Given that a birth chart cannot indicate male or female, why should it indicate physical appearance?

Occupation *People with Sun in Scorpio are drawn to the recycling of materials, so you may consider being a scrap dealer. Alternatively, you would find satisfaction in being a butcher or surgeon.* Educated astrologers would regard this as nonsense, if only because they see sun signs as describing how the occupation is practiced (diligently, enthusiastically, passionately, carelessly), not what the occupation is. [See the cartoon in 11.3]

Intelligence *Any aspect between Mercury and Uranus, such as yours, bestows high intelligence.* But intelligence is something that charts are not supposed to indicate, perhaps because errors would be too obvious. I know a young woman who has a close conjunction between these two planets and is mentally retarded. Her mother (who knows some astrology) told me "Yes, but she is very intelligent, considering". There is a logic here that defeats me.

Character traits (1) *The two benefics Venus and Jupiter are in conjunction in the caring sign of Cancer, and the Moon in Pisces shows both sensitivity and intuition.* This says the person is caring, sensitive and intuitive. But other factors in the chart may indicate the opposite. If nothing else, this is mere flattery. (2) *People like you with Mars in Taurus are always found digging in the garden.* This may be quite untrue while being true of others without Mars in Taurus. If you tell astrologers you don't like digging, they may reply "well, you ought to!"

Charts of others *Moon in Pisces in 10th indicates your mother is an emotionally scattered person.* Even if the client did see her mother as emotionally scattered, we cannot assume this view would be shared by others.

Prediction of events Here is a verbatim interpretation of Moon in 6th house given to me by my own teacher of astrology as recently as 1977. It is similar to those found in early editions of Llewellyn George's *A to Z Horoscope Maker and Delineator* (1976). It betrays a fondness for bad news: *The 6th house is not a good house for any planet as it betokens poor health. If the Moon is in a mutable sign there is a danger of tuberculosis or other lung disease. In fixed signs the danger is gravel or stones. In cardinal signs there is stomach trouble or bad nerves.* There is an

aphorism that says Neptune in 8th house indicates death by drowning, so roughly one person in twelve should die by drowning, which is clearly nonsense. Why should Moon in 6th house be any less nonsensical? Note also the hedging "there is a danger of", so if disease occurs, the danger materialised, but if it didn't, it didn't. This is an example of the nonfalsifiability that is symbolism's occupational hazard – no conceivable outcome could prove the statement wrong.

Subjective feelings Here are 4 astrological statements that any person-centred astrologer might make. They concern feelings, perceptions, needs, and desires, respectively: **(1)** *You have an afflicted Neptune in the Ninth, so amongst other things you are deeply conscious of the plight of the poor.* **(2)** *Your Moon is square Pluto, which while showing a fundamental lack of security may also make you experience your mother as threatening and dominating you.* **(3)** *The Moon's house tells us where you need and seek emotional security. In your case it is in 2nd house, so you will seek security in money and material possessions.* **(4)** *You want to be the boss, to run things, to be master of the house.* Generally speaking, people react well to statements that describe their inner life, even though their inner life is unobservable and therefore beyond verification. Which explains its popularity with astrologers.

Designed to impress **(1)** *The danger you face in continuing your power struggle with your child is that you might perceive yourself to have won, in which case you run the risk of being emotionally hamstrung through guilt.* **(2)** *Your animus is represented by Mars and the Sun, and the signs they occupy tell us how it is coloured. Meanwhile there is a fundamental clash between your Senex and your Puer which must be resolved.* Both statements could be useful if the client gets something out of them, but not otherwise. Could anything prove them wrong?

Clarity or mystical wonder? **(1)** *The Moon stands for the Process of Being, and Saturn is the Principle of Crystallisation, so in your chart ...* **(2)** *To understand your Scorpio, we must first explore the myth of Pluto and Persephone.* Such statements may be acceptable to astrologers when gathered to talk shop, but not to clients who prefer clarity to mystical wonder.

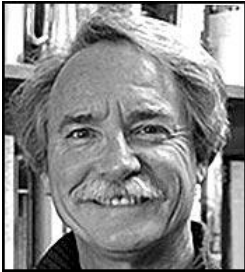
Poetic images **(1)** *To understand how the Moon operates in your chart, think of a flock of heavy black-winged birds, turning towards the sunset on an autumn day, the last rays of the dying Sun probing gaps in the rain clouds.* Poetic images like these appeal to people who judge the truth of ideas by the way they feel, where they react with "Oh yes! I relate to that! It speaks to me!". So who needs a birth chart when you can have poetic images? **(2)** *Moon-Pluto's emotional life reminds me of a gannet, a bird who dives headlong into the water for its food and then comes up to digest what it has caught.* The above statement is from Sue Tompkins' *Aspects in Astrology* (1989). Only mildly poetic, it shows that such statements really do exist in print.

Esoteric statements *Because you have Sun in Taurus, your task in this life is to overcome your desire for material possessions, and your Moon in a Water Sign indicates your death from thirst in the Gobi desert in a previous life.* More and more astrology books claim connections between charts and past lives, even future lives, but why should anyone believe them? Do such visions reflect an actual reality or merely a vivid imagination?

Statements of universal validity **(1)** *When Sharon reaches her mid-teens, she will be affected by a Neptune transit, which will cause her to be uncertain about how she will make it as an adult.* Really? Isn't that true of every girl in her mid-teens? **(2)** *When things seem to be going badly, why not seek out a friend to talk to?* Yes, why not. A barman might even be cheaper than an astrologer. To say nothing of Aunt Fanny with her pot of tea and endless supply of tissues. And what about that favourite opening line: *This is a chart with great potential.*

OK, but does any of this really matter? Interpretations have traditionally been made on the assumption that astrology is helpful because it is true. But these chart statements point to an astrology that is helpful for quite a different reason, namely because it does not *need* to be true. It is helpful because it generates a mass of ambiguities, which astrologers and their

clients then interpret in whatever way suits their situation, so the interpretation cannot fail. It seems that shrewd practitioners instinctively use as much ambiguity as clients will tolerate while instinctively denying its involvement. **Comment** Which then raises the question: could astrology be harmful? For more on this see 10.5 (the answer is yes, if only sometimes).



7.2.1999.3 Response to a debunking of criticisms

IW Kelly *Skeptical Inquirer* 23(6), 37-43, 1999 with 37 references. Here summarised in fine print are his responses to Valerie Vaughan's debunking (in larger print) of five criticisms (in italics) of astrology in *The Mountain Astrologer* 80, 35-42, 1998.

1. Astrologers fail to produce positive studies. But only because research is time-consuming, costly, and without access to research funding (p.12).

Since the 1950s much scientific research has already been produced by astrologers and their critics. Most of the results are negative, with many studies by astrologers being just as negative as those by critics. Hardly the critics' fault, so the debunking makes no sense.

2. Astrologers ignore the scientific approach. But scientists insist on statistical analysis using random samples, whereas chart factors interact, so conditions are never random (pp.13-14).

If this was true then astrologers could never know what each factor means. And because astrology only inclines, not compels, it is necessarily statistical. If astrologers are asked to match people with their horoscopes, "believers expect them (and they themselves expect) to perform much better than chance. But research shows they do not" (p.38).

3. Astrology lacks scientific evidence. But astrology is more like a philosophy that includes the metaphysical. Testing isolated factors ignores the wholeness of the chart and person (p.14).

Why do astrologers reject scientific tests but accept experience ("experience shows that astrology works") when they are essentially the same except experience involves decreased carefulness? And why should testing isolated factors be futile when at any astrological conference you can overhear astrologers saying things like "I gesture a lot because I'm a Gemini"? And Vaughan herself (p.16) links debunking with Pluto in Sagittarius. Astrologers cannot have it both ways.

4. Astrologers disagree on fundamentals. But in physics one can discuss whether light is a wave or a particle. In behavioural genetics biologists can formulate competing opinions like "nature versus nurture". And doctors make a respectable living giving second opinions (pp.12-13).

At first sight this seems like a valid argument – but only if astrology were just starting, as the quoted sciences are. If they were as old as astrology with its claimed millenia of growth and refinement, their disagreements would have been resolved long ago. If disagreements in science were like those in astrology, we would still be in the Stone Age.

5. Astrologers appeal to whatever is fashionable. But scientists of course do exactly the same thing, as when they attempt to bring science to the masses (p.13).

But here scientists are trying to increase public interest in science whereas astrologers are trying to increase the credibility of astrology by association. They are definitely not the same thing.

Vaughan also advanced three reasons for **why critics are against astrology**:

6. Critics cannot bear an unexplained phenomenon like astrology (p.16).

This makes no sense for there are nonparanormal explanations for why astrology seems to work [see 8.9.10.12], and they all fit its known characteristics. What critics are objecting to is astrologers' failure to recognise this.

7. Critics fear losing control in the political class war against astrology (p.15).

This does not explain why scientists succeeded and astrologers did not, although it may be because scientists (but not astrologers) have the means for detecting errors in their ideas. There is nothing here about fearing to lose control.

8. Critics are driven by scientism, the view that the scientific method is the best way, perhaps even the only way, to gain knowledge about the world, ie about "reality" (p.12).

This is a common ploy made to negate any scientific or philosophical criticism. But it inflates a simple testable claim like "does a birth chart match its owners better than a control" to an absurdly grandiose claim about "knowledge of the world". Science may not be the only approach to the second but it is a very reliable approach to the first.

In effect readers of the *Mountain Astrologer* article are being told that *all* criticisms of astrology are glib, misinformed, and out-of-date – a view endlessly repeated in astrology magazines and books and at conferences. But many criticisms are increasingly not like that. Nor would they

discredit astrology if astrology delivered what the books claim, Kelly concludes:

In short, rather than address *informed* criticisms of astrology, Vaughan's article addresses only *misinformed* criticisms as if the former did not exist. The converted are thus comforted without having to reconsider their beliefs. Whatever one may think of astrology, its students deserve better than this (p.42). [See also comment at end of 7.2.2002.2]

7.2.2000.1 How one man made a huge difference

Simon Best, *Correlation* 18(2), 3-8, 1999. Charles Harvey (1940-2000) was the guiding light and driving force behind the AA, the AA research library, the Urania Trust, AA annual conferences, London research conferences, Kepler Days, and the international research effort. His direct and indirect influence on astrological research was more than that of any committee. Here are excerpts from his obituary by former *Correlation* editor Simon Best. Read them and be inspired. Charles's chart has Leo rising, Sun in Cancer, a Jupiter-Saturn conjunction (in a Gauquelin plus zone) sextile Venus, and a Mercury-Mars conjunction sextile Uranus and sextile Neptune, as apt a fit to his life as one could wish.

Charles' influence was everywhere. He was a founder trustee of the Urania Trust (1970), President of the AA (1973-1994), Vice-President of the Faculty (1977-1986), co-founder with Michael Baigent and Nick Campion of the Institute for the Study of Cycles in World Affairs to promote the study of mundane astrology (1980), appointed co-director with Liz Greene of the Centre for Psychological Astrology (1992), and elected AA Patron (1994), a position that had been vacant since the deaths of Ingrid Lind and John Addey. His main astrological interests were harmonics, cosmobiology (midpoints), mundane astrology, and financial astrology.

Personal Reflections

In 1972 I was in New Zealand studying for a Master's degree in Psychology. I had persuaded my supervisor that my thesis should assess astrology, so I wrote to the AA's section, then at 36 Tweedy Road, Bromley, Kent. This was in fact the home address of Charles, who responded to my first letter with great encouragement and lists of references to existing research. Further correspondence produced copies of reports, addresses of other researchers, more references to explore, and always with his characteristic enthusiastic encouragement.

Thanks to his help, my thesis was accepted in 1974. When I returned to the UK in 1977 for a holiday, I finally met Charles at the AA Conference at Nottingham. He was immediately welcoming, affable and keen to introduce me to anyone he thought I should meet, which seemed to be almost everyone! In 1978 I returned to the UK for good. The same year I met Charles again at the AA Conference, this time at Cambridge, and he was again enthusiastic about research. Indeed, his enthusiasm for research would lead to him becoming a key link in the astrology-science debate. Without Charles there would be no *Recent Advances*, no *Correlation*, [and no *Understanding Astrology*] and no British astrological research tradition to lead the world, all reflecting the original scientific aims of the Association as envisaged by his close friend and mentor John Addey.

An Inspiring Force in Astrological Research

At the time *Recent Advances* had just come out and was causing quite a stir with its confronting of astrological claims with empirical findings. But Charles had not just inspired *RA*, he was also a major contributor to it, and indeed it was only through his contacts and research library that Geoffrey Dean and Arthur Mather were able to compile it in the first place. In any event, Charles remained optimistic that research would eventually provide the irrefutable proof that astrology needed for academe to take it seriously again.

Over the following months I met Charles at various London meetings and he talked about gathering together those interested in research with a view to setting up various projects, some possibly funded partly by the AA. Encouraged by the success of *Recent Advances*, he was also keen to stimulate discussion and debate, and in May 1979 his inspiration culminated in a weekend meeting of astrologers and psychologists at the Institute of Psychiatry.

The flyer prepared by Charles perfectly illustrates his philosophy and approach to research. It announced "A weekend research seminar and discussion" whose aim was "to focus attention

on current statistical studies and results, and to discuss as fully as possible ways in which this kind of astrological research can be most usefully developed." The list of illustrious speakers testified to Charles's persuasiveness for they included Professor Hans Eysenck (who had made the venue available), John Addey, Jeff Mayo, Zip Dobyns, and of course Michel and Françoise Gauquelin. The occasion was also a testimony to Charles's foresight, for it was the beginning of what was to become an ongoing series of London Research Conferences.



Left: Charles Harvey in 1976. **Right:** Moderating a session at the 2nd London Research Conference, November 1981 with an audience of 110 including 12 speakers. Left to right: John Addey, Dr Theodor Landscheidt (Germany), Charles Harvey, the Gauquelins (France), Thomas Shanks (USA). Photo: Geoffrey Dean.

AIR Group and *Correlation* launched

The momentum of that first conference stimulated a small group of us to meet regularly, usually in London, to discuss research ideas and challenging theories. We called it the AIR group, for Astrological Investigation and Research. The initial core group comprised myself, Patrick Curry, Mike Startup, Nick Kollerstrom, Frank McGillion and Beverley Steffert, with Charles always either present or keeping in touch with ideas and support. In due course we were regularly joined by Mike O'Neill, Graham Douglas and David Stevens. An augmented London AIR group is pictured below. For another picture of AIR members see 8.1.1.



Left: To broaden the discussion of research this AIR group meeting in September 1983 at the Institute of Psychiatry included palmists and sympathetic academics. Seated left to right are Charles Harvey, Danielle Claret (palmist), Jane de Rome (astrologer and palmist), and Mike O'Neill. Standing left to right are David Stevens, Nick Kollerstrom, Dr Rowan Bayne (academic), Martin Budd, Simon Best, Patrick Curry, Mike Startup, Graham Douglas, and Jonathan Cainer (due to become the UK's top pop astrologer but not an AIR member and present only for this one meeting). Not in the picture are Dr David Nias (Institute of Psychiatry) and Dr Geoffrey Dean (behind the camera). Among Charles's suggestions were (1) because charts indicate potential, awareness is important, so before matching charts to personality or ability, give natives an awareness test and reject those who are unaware, and (2) in his experience, students get much more accurate chart interpretations for people who are famous, ie actualised, so choose natives who are actualised. **Right:** In 1999 *Principles of Astrology* was Charles's final book co-authored with wife Suzi.

Toward the end of 1980 Charles asked me (presumably because I was now a medical journalist and editor) if I would be editor of a revived *Correlation*, to be a forum for the scientific approach that had been stimulated by *Recent Advances*. The original *Correlation* had been a quarterly scientific newsletter edited by Fleming Lee during 1968-70, after which time it appeared irregularly in the *Astrological Journal* as review articles edited by Arthur Mather. Charles saw very clearly that the time had come for a journal devoted exclusively to empirical findings and debate. So with the assistance of the AIR group and others acting as consulting editors, the new *Correlation, Journal of Research into Astrology*, was re-born in 1981.

The London research conferences continued to attract attention and a growing number of open-minded academics, among them Professor Alan Smithers at Manchester University, Dr Percy Seymour at Plymouth Polytechnic, Professor Peter Roberts at the City University in London, and Professor Suitbert Ertel at the Georg-August University in Göttingen. And despite all his commitments, astrological and otherwise, Charles was always there, always in a good humour, never stuffy, leading from the front, encouraging, supporting, liaising, networking.

Following the untimely death of John Addey in 1982, Charles had become the driving force behind the Urania Trust, an educational charity founded by Addey in November 1970 to encourage the study of astrology and to act as an umbrella for existing organisations. The UT's first objective was to establish a centre in London. Thanks to Charles, the objective was realised in 1989 with the opening of the Astrology Study Centre, a three-storey complex of small rooms housing the UT, AA, and combined AA/Lodge libraries, and a focus for meetings ranging from local lectures to national Kepler Days. In 1991 Charles originated and edited the first of an ongoing series of UT Yearbooks, which became the world's foremost listing of astrological organisations, libraries, periodicals, schools, events, and general resources. In effect it was his own address book writ large for all to use.

In 1998 his dream of seeing astrology become once again a focus of academic study took a giant leap forward when an anonymous donor offered £1,000,000 for the establishment of a Chair of Astrology at a British university. Now called the Sophia Project, and operated under the aegis of the Urania Trust, it led Charles characteristically to call a meeting of astrologers and sympathetic academics to explore options. The meeting occurred in March 1999 but, sadly, Charles was by then too ill to attend. His death in February 2000 at a time when his dream was within realisation is thus all the more tragic. He was irreplaceable.

OFFICIAL ACADEMIC RESEARCH CONFERENCE at the Institute of Psychiatry
 100, Denmark Hill, London S.E.5.
 Sat. 22nd July 1988, 10.00am - 5.00pm

LIGHTS LONDON ASTROLOGICAL RESEARCH CONGRESS

THIS IS A LUNAR TRIP FOR PEOPLE TO ENLIGHTEN THEIR PATH
 LIGHTS LONDON ASTROLOGICAL RESEARCH CONGRESS

ASTROLOGY : THE EVIDENCE

Sat. 18th & Sun. 19th November 1989, 10.00am - 5.00pm.
 The Royal Hall, 100, Strand, London WC2R 0EL
 For a full programme of talks see p. 10

This is a vital research project in the way an astrology research. It is a large conference that will bring together the most important experts and has been in the development of a large volume of research. The talks will be the most important research in the field.



The ASTROLOGICAL ASSOCIATION & URANIA TRUST
 PRESENT THE 10TH LONDON

ASTROLOGY

CONFERENCE

SCIENCE...

RESEARCHERS

RESEARCHERS

10.00am RESEARCHERS IN ASTROLOGICAL RESEARCH - 2nd of 10th day
 A conference of the state of the research in the field of astrology
 from those undertaking astrological research in the field of
 the research in the field of astrology.

RESEARCHERS IN ASTROLOGICAL RESEARCH

10.00am RESEARCHERS IN ASTROLOGICAL RESEARCH - 2nd of 10th day
 A conference of the state of the research in the field of astrology
 from those undertaking astrological research in the field of
 the research in the field of astrology.

INTERNATIONAL RESEARCH CONFERENCE ON ASTROLOGY

IN SEARCH OF THE TRUTH

10.00am RESEARCHERS IN ASTROLOGICAL RESEARCH - 2nd of 10th day
 A conference of the state of the research in the field of astrology
 from those undertaking astrological research in the field of
 the research in the field of astrology.

From left:
Flyers for the 1981, 1989, 1996 Conferences.

Charles's fine print always promised success for astrology. Thus the 6th conference in 1987 (addressed to *Astrology, Science and Symbolism*) "reveals some of the exciting vistas opening up on the frontiers of astrological exploration". But that was then. Today 30 years later he would no doubt attribute the dismal reality to a lack of appropriate tests, but the prospects for improvement do not seem good. Another conference picture of Charles is in 7.3.1987.1.

7.2.2000.2 On observing symbolic correlations

RH King and DJ Koehler. Illusory correlations in graphological inference. *Journal of Experimental Psychology: Applied* 6(4), 336-348, 2000. Like astrology, graphology is said to be based on observed correspondences between nonverbal factors (stars, handwriting) and personal qualities (personality, behaviour). Unlike astrology, graphology provides a sample of actual behaviour (handwriting) to infer personal qualities. So the observational process can be investigated unambiguously, whereas in astrology the usual uncertainties (eg in birth time) conveniently confuse the issue. This study is important for its improvements over the classic pioneering study of Draw-A-Person tests summarised in 9.9.7.

Via a graphology bookshop survey the authors identified two books that were held to be the best for learning graphology (Amend and Rais, *Handwriting Analysis: The complete basic book* 1980; Roman, *Handwriting: A key to personality* 1952/1996), which led to these 6 main handwriting features, their labels, and the personality dimension they were said to indicate:

----- As claimed by graphologists -----

Feature	Labels	Personality dimension	
Size	Small-Large	Modest-Egotistical	) Labels are
Speed	Slow-Fast	Cautious-Impulsive	) aligned with
Rhythm	Regular-Irregular	Regular-Irregular	) personality
Shape	Angular-Rounded	Analytical-Intuitive	) dimension eg
Spacing	Compact-Expansive	Introverted-Extraverted	) slow = cautious
Slope	Ascending-Descending	Optimistic-Pessimistic	) fast = impulsive

To generate test samples, students at the University of Waterloo in Ontario copied with a ballpoint pen on to unlined paper a 143-word cooking recipe that contained numbers as well as letters. Samples were discarded if they contained mistakes, exceeded one page, or were not in normal handwriting. The result was a set of 40 handwriting samples, identical in content and differing only in handwriting style, which were photocopied and bound into casebooks.

To calibrate each sample, the authors and eight university colleagues rated each handwriting feature on 7-point scales labelled as above. For example they had to rate each handwriting *size* on a scale from 1 = *small* to 7 = *large*. No special instructions, assistance or explanations were given, yet the mean agreement across all judges was extremely good ($r = 0.89$ to 0.97). So in each sample the mean rating of each feature was a very reliable measure of its quality.

Question: Are graphological claims based on *empirical* correspondences between handwriting features and personality, or a *symbolic* correspondence such as big writing = big ego?

To test **symbolic** correspondences a 7th dimension *cooperative-competitive* was added to hide the match between six features and six dimensions, which if known could have biased the results. 80 introductory psychology students unfamiliar with graphology rated the similarity between each end of the 6 features and each end of the 7 personality dimensions on a 7-point scale from -3 opposite in meaning to +3 similar in meaning. No two ends of a feature or trait appeared on the same page, and graphology was not mentioned. Here are two typical results with mean ratings confirming a strong symbolic correspondence:

Feature	Trait label	Mean rating	Interpretation
Fast	Cautious	-2.05	Fast is strongly opposite in meaning to cautious
Fast	Impulsive	+1.75	Fast is strongly similar in meaning to impulsive

To test **empirical vs symbolic** correspondences, fresh students unfamiliar with graphology received the 40 handwritings in which each handwriting (a full left-hand page) was matched on the opposite page with seven personality descriptions, each on an 11-point scale from 0 to 10 with a score circled. Unknown to the students the scores had been rigged to show in *Experiment 1* either no correlation with the six handwriting features (mean $r = 0.00$ sd 0.15), or in *Experiment 2* near-perfect correlations ($r > 0.95$ for the first two and last two features in the previous list, two of which were in the direction claimed by graphologists and two were in the opposite direction, with $r = 0.19$ and 0.29 for the remaining two features).

Cases were equally divided into two books A and B. In B all profiles had been inverted, so every positive correlation was now negative and vice versa. This division allowed empirical and symbolic correspondences to be individually evaluated because inversion should have no

effect on purely symbolic correspondences. Thus small handwriting will always symbolically indicate a modest person regardless of whether it does or not, in the same way that a strong Mars will always indicate an aggressive person, other things being equal.

Back at the experiments there was either no link or a near-perfect link between handwriting features and personality dimensions, with half of the links being inverted.

Each student received a bound book containing the 40 handwriting samples paired with the rigged personality profiles and had 15 minutes to judge whether particular features (listed on a separate sheet for easy reference) seemed to go with particular personality traits (ditto), but note-taking was not allowed to maximise reliance on intuition. After this time, which was experienced as neither too short nor too long, the books were replaced by 12 judgement sheets, one for each end of each handwriting feature (eg small writing, large writing) and each end of the seven personality dimensions, all with explanatory descriptions (eg analytical = inquiring, logical, problem-solving, intuitive = irrational, acts on hunches). On each sheet they had to indicate (on 9-point scales centred on 0=average) their estimated correspondence with each of the 7 personality dimensions. For this there was no time limit.

Computer analysis then gave the correlations between features and personality for empirical vs symbolic correspondences. They showed that symbolism had dominated the judgements:

Expt	Actual rigged correspondence	<i>r</i> for empirical		<i>r</i> for symbolic	
		Book A	Book B	Book A	Book B
1 N=78	Zero*	0.04	-0.14	0.63	0.68
2 N=58	Near-perfect	0.51	-0.31	0.70	0.71

*A judgements vs B judgements should give a correlation *r* close to zero reflecting their chance association in the rigged scores. In fact *r* = 0.83, confirming that symbolic correspondences dominated the judging.

In all cases the perceived symbolic correlations are significantly much higher (*p* < 0.01) than the perceived empirical correlations regardless of whether the actual rigged correspondences are zero or near-perfect, even though the latter are still detected. The authors conclude that the links claimed by graphologists between handwriting features and human personality are largely an illusion. Symbolic correlations such as big writing = big ego are proxies for non-existent empirical correlations, in which case the observed results (p.336):

may partially account for continued use of graphology despite overwhelming evidence against its predictive validity.

Comment In other words if graphology seems to work it is for the wrong reason (symbolic correspondences). The results in the present book indicate that the same is true of astrology, where correspondences based on symbolism are proxies for actual correspondences, which even if valid would still be too small to be useful. The nearest equivalent palmistry study involved reversed readings, the nearest equivalent astrology study involved reversed charts, both with results compatible with those above, see 7.2.1987.4. For more on symbolic correspondences see 9.9.7 ff (illusory correlation).

7.2.2000.3 Confessions of a former graphologist

RJ Tripician. Confessions of a (former) graphologist. *Skeptical Inquirer* 24(1), 44-47, 2000. In 1972 the author came across the analysis of a handwriting similar to that of an associate. It seemed so accurate that when he retired (he was an electronics engineer) he studied graphology and eventually became a Certified Professional Graphologist.

Along the way he noticed that graphology books tend to agree on the meaning of handwriting features like size and slant, but none describe an orderly empirical approach to interpretation, It seemed like received wisdom, so he developed a computer program to score each factor and thus automate the process of synthesis. This, plus critical surveys of graphology in the scientific literature (which "most graphologists likely don't read", p.46), plus the following typical problems, led him to seriously doubt graphology's validity and reliability:

(1) Many meanings seem like pure sympathetic magic, for example a lower case *a* with an open top is like an open mouth, indicating an inability to keep a secret. (2) Most graphologists require much personal information such as age, sex, nationality, and profession, so analysis

usually degenerates into cold reading. **(3)** Interpretations are subjective and often disagree. Comparison with his computerised scoring system showed that graphologists were shaping the handwriting data to suit their preconceived ideas. **(4)** Controlled tests show that graphology is neither valid nor reliable enough to be useful. He concludes:

The motivation to study graphology apparently stems from a desire to possess esoteric power. As I have personally observed many times, this gives the graphologist a feeling of power over the subject. ... Graphology has its staunch adherents as do astrology, numerology, palmistry, chiromancy, phrenology, etc. As [US skeptic Martin] Gardner (*The Night is Large* 1996) says: "My own opinion is that the gullibility of the public today makes the citizens of the nineteenth century look like hard-nosed skeptics" (pp.46-47).

Comment The author's arguments are also relevant to astrology. He doubts whether graphology can survive, which at a professional level may well be true. Thus in 2009 Bangerter et al (*International Journal of Selection and Assessment* 17(2), 219-230, 2009) found no evidence to support the belief that graphology is widely used for personnel selection in Europe, or that handwritten applications are commonly required for the same purpose. They conclude:

Few recruiters are interested in interpreting handwriting. ... organizations should be aware that instructions requiring handwritten application letters may invite incorrect and undesirable inferences about the nature of their selection procedures (eg that they regularly use graphology as a selection tool) (p.229).

But graphology may still survive in the short term at a popular level due to people's ability to believe weird things despite sound disconfirmation, although in the long term it may be different – think of phrenology and bloodletting. For more graphological insights into astrology see 7.2.1992.3 (includes a meta-analysis) and 7.2.2000.3.

7.2.2001.1 Blame it on radiation after all?

Irina Predeanu, *Les Cahiers du RAMS* 9, 16-23, 2001. Author is a Romanian PhD in astronomy who believes that many astrological claims are supported by astronomical evidence such as magnetism and radiation.

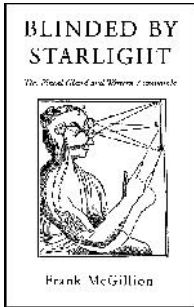
For example: **(1)** The Moon and Venus are traditionally feminine, and both have negligible magnetic fields. **(2)** Venus and Mars are traditionally crucial planets in issues of affective warmth, and both emit micrometric (infrared) radiation from their atmospheres due to excitation by solar corpuscular radiation. **(3)** The larger planets have a specific radio emission whose characteristic wavelength is longer when the planet is furthest from the Sun. **(4)** During each Jupiter-Saturn conjunction, the magnetic tail of Jupiter completely envelops Saturn, significantly perturbing its own magnetic field and radiations. **(5)** Jupiter's radio emissions between 5 mHz and 50 mHz are stronger than those of the Sun. Similar frequencies are used in ultrasonic diathermy to stimulate organ repair. **(6)** Significant radio emissions from Jupiter vary in accordance with Jupiter's synodic period and with certain angular relationships with the Sun. **(7)** The Moon exerts a complex influence on the Earth. At New Moon (Moon conjunct Sun), tides are maximal, sky is darkest, solar corpuscular radiation is reduced, and the Earth's magnetosphere captures a fresh influx of particles from the lunar surface. At Full Moon (Moon opposite Sun), the sky is 300 times brighter than at New Moon, perturbation of the magnetic tail of the Earth is significant, and the tide is higher.

Comment How does this explain why Leos are generous or why wrong charts work? How do barely detectable influences explain supposedly dominating (but so far unproven) astrological effects? Just because planets emit radiation does not mean they can do astrological things like predict your personality and your destiny, or do non-astrological things like disrupt TV programmes and cook your dinner. In effect the author is invoking correspondences to explain correspondences, which is precisely the position we need to escape from.

7.2.2002.1 Astrology between religion and science

Gustav-Adolf Schoener, *Astrologie als Religion und "Erfahrungswissenschaft"* [Astrology between religion and "scientific experience"], REMID, Marburg 2002. Dr Schoener is at the Department of Religious Studies at Hannover University and is noted for his interest in astrology. This brief summary is based on the English translation by Shane Denson at www.esoterica.msu.edu/VolumeIV/astrology.htm, which has 19,200 words including bibliography and 80 footnotes. Not included here is Schoener's account of the importance of astrology in the history of religions.

Astrology assumes that all of nature including the planets has a spiritual essence linked by analogies and sympathies. It claims to provide a spiritual interpretation of the world based on scientific knowledge about planetary positions. That is, it wants to be religion and science at the same time. The absence of convincing scientific support for astrological claims makes it difficult to see astrology except in religious terms. Religious scholarship does not consider whether an idea is true or not. It considers only whether people hold such ideas, and the effect of those ideas on their experiences. Thus the mysterious ideas of astrology can be viewed in the same way as the ideas of life after death, purgatory, karma and reincarnation.



7.2.2002.2 A modern plea for Urania

Frank McGillion. Excerpted from *Blinded by Starlight* 2002, a readable 259 pages of speculations, comments and published research mainly about the possible relation of the pineal gland to astrology. Although much is now dated it includes important arguments for the serious study of astrology, to which McGillion brings a rare and much-needed combination of professional scientist (PhD), accredited astrological study (DFAstrolS), and long experience.

A problem with astrologers is their dogmatic insistence that specific planetary patterns are associated with specific issues. So when astrology is used as a counselling tool it immediately introduces elements of superstition and fated destiny, which makes it unlike conventional systems of psychotherapy.

But if astrology can act productively (as has always been claimed) it deserves examination.

As for sun sign columns, and regardless of your personal views, professional astrologers exist and need to make a living. If they can do so through such columns without breaking the law, it is no more (or less) than their right. Nevertheless sun signs are only a single chart factor:

Indeed, the number of potential chart factors usable in an interpretation runs into millions, which is more than enough to make hits not just highly probable but absolutely certain. If you scan enough noise you will eventually find a signal whether it is there or not. This does not necessarily disprove astrology – it merely shows it must work even for beginners.

As for the pineal gland and the melatonin it produces, artificial changes or removal in rats within six days after birth have been shown to affect later development and behaviour, albeit potentially reversible, which is potentially (if vaguely) relevant to astrology. There are also many beliefs about pineal function as an intermediary between the physical and metaphysical worlds. But they are based on belief rather than on observable objective fact, so they are precisely located in the area that many feel is best left to those who wish to be part of it.

Which perhaps is the main problem for those interested in the stars past and present. Today astronomy has become a respected academic discipline with many sub-disciplines such as cosmology and astrophysics, but the part that dealt with how stars affect us (ie astrology) is now dismissed by most academics as a superstition fit only for the gullible and poorly educated.

And if we take the scientific approach as our only yardstick for assessing astrology's worth, it is hard to disagree. Nevertheless in the context of history, astrology's claim to be taken seriously is as good as many others, so it deserves a fair and disinterested hearing based strictly on the evidence. Similarly astrologers must accept that their claims must be justified in the same way, otherwise they risk not only personal criticism but further damage to astrology's reputation.

Comment The fair and disinterested hearing that *Recent Advances in Natal Astrology* began in 1977 is now followed up four decades later by the present book. It provides the evidence that astrology needs if it is to become evidence-based and have the same high standards as in any other field. But only a few astrologers have accepted that their claims need to be justified in this way. None have succeeded in producing positive replicable results commensurate with their claims. And they still largely address only those criticisms that are misinformed, see 7.2.1993.3. Which reflects what experienced critics have long known – true believers never change their minds, even when their beliefs are glaringly wrong.

Here is an example: The claims of a dozen flat-earthers were recently tested across a 16-km-wide lake 250 km southeast of Los Angeles by raising a balloon on one shore until it became visible to viewers on the opposite shore (*Skeptical Inquirer* 42(6), 14-15, 2018). Although the balloon had to be raised nearly 16 metres before it became visible, confirming that the surface of the lake was curved and not flat, the flat-earthers immediately denied the test's validity. Never mind that the Moon as seen from the USA is upside down when seen from Australia, so the earth cannot be flat. In such company most astrologers could have stood with pride.

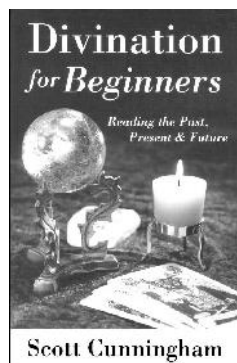
7.2.2002.3 What does "evidence-based" actually mean?

Stephen Goss and Suzanna Rose. Evidence-based practice: a guide for counsellors and psychotherapists. *Counselling and Psychotherapy Research* 2(2), 147-151. 2002. Such practice has been influential in the UK since the 1970s.

It means that any practice should be supported by rigorous research evidence to ensure that clients are getting the best value for money. It requires regular systematic reviews that are readily accessible by practitioners. The reviews can be of any kind including qualitative but they must be of good quality, rigorously critical, and synthesised into coherent statements to guide practitioners, clients, and researchers. The authors conclude:

Those who ignore these concepts risk being regarded as biased by their prior beliefs rather than practising in the best interest of their clients. From the point of view of the client, such a response is clearly unacceptable (p.150).

Comment This book is a start, but most astrologers dismiss anything critical. Abandon hope?



7.2.2003.1 Investing chance with meaning

Scott Cunningham, *Divination for Beginners: Reading the Past, Present & Future* 2003. First published in 1993. The late author was a lifelong practitioner and this book was among his last. He kept meticulous notes of his research, often allowing a year or more between drafts to make sure his facts were correct and his writing was easy to understand. And it shows. Here you get straight talk about divination with no mystic obfuscations.

The author stresses that true divination does not tap into knowledge that is usually unknown to the conscious mind. There is no need for mystic rituals, special clothes, or belief in higher beings. Use the technique you are most comfortable with. Avoid vague questions. Be prepared for occasional mistakes. Always check important divinations two or three times to guard against errors in technique or interpretation. Realise that symbols are more difficult to interpret for other people. If all you see in clouds are clouds, you are not thinking symbolically. Ignore their outward form and ignore cookbook meanings. Divination produces symbols that speak to you personally. Avoid preconceived ideas. Think positively, avoid negative thoughts, and know that you do have control over your future. As a result: "anyone, psychic or not, can successfully practice divination" (p.8).

The author describes more than a hundred home-tested techniques based on watching water, smoke, birds, and so on, which by themselves become divination only if preceded by a request for information. All of his techniques, such as casting lots or taking coloured stones from a bag, reduce to tossing a coin. What makes them divinatory is the symbolism. Indeed, the methods, thoughts, and intent of his approach parallel those in an astrological consultation, and watching clouds is especially like reading charts:

Cloud watching is directly related to other gazing techniques. It may require symbolic thought to fully penetrate the inner meaning of the presented response. On a day when clouds race across the sky, or when thunderheads build up to impressive size, sit or stand with your back to the sun and look up toward the sky. (Ideally it shouldn't be completely overcast.) Think of your question and gaze into the clouds. Study their shapes, blinking normally. Soon they may form a symbol, or you may become aware of a symbol that was already present. Examine this image and determine what connection it has with your question. This art doesn't always require interpretation – if the diviner earnestly seeks messages from the clouds, they may plainly reveal the future in recognizable shapes (pp.95-96).

Comment In other words divination is a way of investing chance with a meaning it would not otherwise have. You get an ambiguous outcome that you are forced to explore to make sense of it, thus exploring areas of your problem you might not otherwise explore, thus ob-

taining answers you might not otherwise obtain. Divination does not conjure up automatically right answers out of nowhere. In fact (depending on your stored information) none of them may be right. If you remember that, what harm can it do?

7.2.2004.1 Astrology and the sex-trafficking of girls in Nepal

Padam Simkhada and Dhruba Simkhada, *Correlation* 22(1), 52-62, 2004.

Over 5000 Nepali girls are trafficked for prostitution each year. The business is highly profitable because there is a strong demand for Nepali sex workers in Indian brothels. Many Nepali astrologers believe that some parents will have surrendered their daughter on the basis of astrological indicators. But a sample of 100 Nepali sex workers and trafficked girls showed no links with astrological factors. Conclusion: Astrology does not explain why some daughters are entered into prostitution.

Comment If astrology does not compel, to what extent can it really *explain* anything? The question is not as difficult to answer as it may seem. See 7.2.2011.2 (Bayes theorem).

7.2.2004.2 Keep this away from critics!

Kennet Gillman. Review of Rafael Nasser's *Under One Sky*, in *Considerations* 19(3), 94-96, 2004. In his book Nasser presents blind interpretations of an anonymous but accurately timed birth chart by twelve leading astrologers each using a different technique (asteroid-centred, archetypal, psychological, Uranian, modern Western, Western sidereal, light-hearted, medieval, Hellenistic, Vedic, evolutionary, and mythological). Astrologer Gillman is also a statistician.

The anonymous subject was a female born in the USA on 16 January 1943 at 4:18 pm CST at 36N19, 95W19, who provides a 45-page autobiography specially written for the book:

We learn that she is a healer, who as a young child was abused by her father, that she has been twice married but has no children, that she experienced painful spinal problems as a result of a car crash, and that she has spent much time overseas, once briefly emigrating to New Zealand.

The astrologers' blind interpretations are the main feature and occupy 330 of the book's 489 pages. All the astrologers know is the subject's sex and birth data:

I read what each had to say but had some difficulty evaluating their comments, especially when it came to their descriptions of the woman's personality traits [see also 4.6.4]. These seem to have been accurately identified for the most part, but clients I see don't really care about such things. They knew all there was to know about their own personal quirks long before they made an appointment. Now they are more concerned about specific items in their futures; money and love usually being at the top of their list. I decided to create a tally sheet for six life-defining happenings in the woman's life, noting whether or not an astrologer identified these (p.95).

Here are the six happenings and the techniques that identified them:

Major happening	Identified by this technique
Abuse by father	Archetypal, Vedic (Asteroid-related was close).
No children	Medieval (Archetypal and Asteroid-related were close).
Divorce and remarriage	Medieval, Uranian, Vedic.
Spinal problems	None (Western sidereal was close).
A healer	Archetypal, Asteroid-related.
Much time overseas	None.

Gillman comments:

Not a great success rate. Six [Evolutionary, Hellenistic, Light-hearted, Modern Western, Mythological, Psychological] failed to identify any of these six major life happenings. Is it asking too much to expect they should have? (p.95). [None got three. Archetypal got two and one close. Medieval and Vedic got two each. Asteroid-related got one and two close. The dominant theme is inconsistency.]

And then concludes:

This is a fascinating book: a showcase of the state of the Astrology as practiced at the start of a new millennium. ... but be sure to keep it far away from anyone prone to criticize astrology – the evidence it contains about today's level of astrological know-how could make them insufferable (p.96).

Comment Perhaps, but the hurdle is being set extremely high. It could even be argued that the diversity of possible happenings is so large that even a small number of hits is a notable achievement. On the other hand, the astrologers were leaders in their respective fields, and

marriage, children and health would seem to be obvious topics in the life of a woman aged 70. Unfortunately there was no control group to evaluate the probability of hits arising by chance, which is yet another reason for keeping it away from critics.

7.2.2004.3 Exploring Sedna with 25 astrologers and 24 skeptics

This analysis of a survey about the newly-discovered Sedna is of special interest because (1) such discoveries are infrequent but are very relevant to how meaning is derived, (2) it involved both astrologers and skeptics, (3) the astrologers were highly experienced, (4) it asked about the role of empirical research. The original survey data is from Rosalind Park, *Sedna, a new power in astrology?* MA thesis Bath Spa University College, May 2004.

In 1930 astronomers announced the discovery of Pluto, then the 9th planet. In 2004, just 74 years later, astronomers announced the discovery of Sedna in the outer reaches of the solar system. Sedna is slightly smaller than Pluto, is three times further from the Sun, and takes a century to traverse each sign. It is named after an Inuit goddess living in the frigid arctic ocean.

To find out how astrologers and non-astrologers ("skeptics") saw the influence of this new discovery on astrology, Park circulated those whose email or postal addresses she had (or could obtain) with a 15-item questionnaire. Most of them responded. Here are the results:

Respondent details		Skeptics	Astrologers	Comment
Number of responses		24	25	Samples were
Proportion of females %		25	45	evenly matched
Mean age in years		51	48	by sex and age
Years of experience in astrology		-	19	
Knowledge of Sedna's discovery %	Unaware	38	4	As expected, astrologers were more aware of Sedna's discovery than skeptics were
	Aware	54	56	
	Familiar	8	40	
Involvement in astrology %	Professional	-	60	Skeptic readers of sun sign columns tended to be female
	Student	-	36	
	Sun sign reader	16	4	
	Open minded	42		
	Unbeliever	42		
Perceived influence of Sedna on astrology %	Major	0	28	Astrologers disagreed even more than the skeptics did
	Minor	12	36	
	None	21	20	
	Don't know	67	20	
Which of these provides an astrological meaning for Sedna? %	Distance	21	28	Nobody chose intuition. Astrologers total exceeds 100% because some chose more than one source (but with no clear agreement)
	Geometry	0	24	
	Mythology	8	56	
	Symbolism	4	8	
	Intuition	0	0	
	Don't know	67	40	
Have you already looked at Sedna in birth charts? %	Yes		17	15) Mean 17) experience 19) in years
	No but hope to		33	
	No, waiting on others		42	
	No		8	
Do you use any non-Ptolemaic bodies in your chart readings? %	Yes, Pluto		92	Only one astrologer (with 35 years of experience) expressed no interest in new bodies
	Chiron		63	
	Lunar Node		46	
	Asteroids		17	
Role of empirical research in finding meanings for Sedna %	None*		9	16) Mean 21) experience 19) in years 15)
	Minor		30	
	Major		43	
	OK if supports symbolism		17	

Here N=23. *Chosen because "meanings cannot be derived by materialist science"

What would convince you that Sedna meanings were >>	-- Astrologers % --		The same would also settle disagreements?
	Correct	Incorrect	
Research	8	0	32 yes
Experience	82	90	58
Consensus	5	5	10
Don't know	5	5	0

Here the preference for experience over the previous endorsement of empirical research tells us that such research is seen as important to avoid personal prejudice, but the meanings thus derived still need to be tested in chart readings with clients. (Which implies that the traditional meanings used throughout astrology have been tested enough.)

Meanings for Sedna. 13 of the 25 astrologers made these suggestions:

6 males mean experience 18 years: Consciousness, death of feminine nature, female wisdom, focus, guide, healing, inspiration, isolation, mentor, oceanic, origins, past lives, purpose, tidal, transformation, undercurrent.

7 females mean experience 15 years: Cold fingers, compulsion, consciousness shift, erratic, feminine struggle, feminism, foreign, grief, innocent, irrational, loneliness, misunderstood, paradox, passive, protection, rejection, sea-change, tolerance, vanity, victimised.

Correlation with personal variables for 25 astrologers and 24 skeptics:

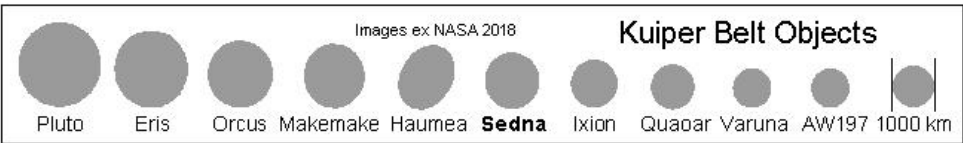
Each variable was ordered in the increasing direction. Their names and correlation *r*'s are shown below. Astrologers are above the diagonal and skeptics are below the diagonal. An individual *p* is <0.05 if *r* (ignoring sign) is >0.39:

1	2	3	4	5	6	Description
...	.08	.10	-.07	.34	.03	1 Sex (1 male, 2 female)
-.08	...	-.28	-.09	-.47	-.03	2 Age in years
-.04	.31	...	.23	-.05	-.20	3 Knowledge of Sedna's discovery
.47	-.08	.21	...	.06	.32	4 Involvement in astrology
-.29	-.23	.07	.15	...	-.14	5 Perceived effect of Sedna on astrology
...	...	...	...	...	...	6 Role of empirical research in deriving meaning

Despite small sample sizes the larger correlations were generally in the expected direction. The *r*'s in **bold** show that:

- Knowledge of Sedna's discovery was highest among younger astrologers and older skeptics.
- Skeptics sufficiently involved to read sun sign columns tended to be female.
- Perceived influence of Sedna was highest for younger astrologers and female astrologers.
- Support for empirical research was highest among the most experienced astrologers.

Comment Apart from the unusual topic, there is nothing in the survey results that would conflict with the findings in the present book. To be sure, the suggested meanings for Sedna show little of the agreement needed for even minimal use, but a forced common theme might fit the current (2018) meaning, which is something like "awakening of spirituality".



By 2020 several more distant bodies had been discovered, all of them moving so slowly that their potential use in individual charts seems as helpful as using fixed stars (N=10²²).

7.2.2004.4 A massive overdose of pseudoscience

Arthur Mather. "Guinard's *Manifesto*: a massive exercise in pseudoscience". From www.astrology-and-science.com. The *Manifesto* has 42,000 words in two parts based on Guinard's 1993 PhD thesis at the Sorbonne. It claims astrology has psychic causes, that its meanings are valid but untestable, and are wrongly ignored due to bias. In 1999 an English translation was online at <http://cura.free.fr/> with revisions through 2003. This summary includes Guinard's response.

In her review in *Correlation* 20(2), 63-64, 2002, Shelley Jordan feels the *Manifesto* represents:

"some of the most revelatory astrological writing of this current era". It is "an eloquent and sound explanation of the nature of [astrology] and a vigorous polemic against [those who] persecute it". The *Manifesto* "asserts that astrology is not [to do] with events but with states of consciousness", which makes it "an entirely new astrological genre". In the end it is an "epic analysis [that] should be required reading for all serious students or opponents of astrology".

In his letter in *Correlation* 21(2), 54, 2003, Kevin Hawley disagrees:

The *Manifesto* holds that astrology is "incapable of being examined or tested by material methods, [hence] to get to The Truth we must stop investigating astrology and simply contemplate our navels for the rest of our lives". Hawley concludes "the sheer pomposity and narrow-minded arrogance of the article is truly breathtaking". Indeed, it is "deeply offensive and insulting to astrological researchers ... a non-testable, self-indulgent monologue [that is] a complete and utter waste of time".

There are several things about the *Manifesto* that could explain such conflicting views. It has long rambling arguments, unexplained concepts, and is so devoid of clear threads that Shelley Jordan's "required reading" can seem like mental torture, if not actually Kevin Hawley's "com-

plete and utter waste of time". My review took many laboured months to prepare and appears below [in abridged form], with my comments in small type prefixed by AM.

Part 1. Why astrology has been ignored in modern thought

Astrology has its own logic, language, and reasoning, which cannot be assessed by experimental science or by the reasoning of philosophers. Instead astrology arises from the psychic state of the person, whose interior world is determined by four astrological structures – planets (activity), houses (where the activity is applied), transits (timing), and signs (quality). They operate at the interior mental level, not at the level of fact or events or what is concrete.

AM: By asserting that astrology is a purely mental phenomenon unconnected with anything concrete, and that it cannot be tested by experimental science, Guinard is protecting it from anyone who might disagree, such as most astrologers and most scientists. Here we get our first indication that Guinard's approach amounts to pseudoscience.

The four astrological structures are cyclical (moon monthly, sun yearly, planets various) and are "imprinted on the neural organization, which reproduces the periodic variations of the planets". The astral impressions are culturally translated as unspecific symbols and archetypes. This process exists in nature and would continue to operate even if there were no astrologers.

AM: If such a process existed why has it not been detected in routine brain scans? Unfortunately we might easily miss such points under his paralysing overburden of impenetrability such as "Astrology cannot be defined in any domain but its own: the egalitarian domain of the qualitative potentialization of psychic reality".

Today we no longer interact with natural psychic reality but increasingly with material substitutes as technology advances. Astrology gives meaning, a way of better understanding ourselves. Its reality is qualitative, not quantitative.

AM: Guinard devotes many paragraphs to what he sees as the alienating influence of science. He implies that the practical achievements of science should be rejected in favour of faith in an astrological doctrine and wishful thinking. But if astrology gives meaning, then that meaning can be tested. (Guinard later dismisses this as absurd, see below).

Astrology "requires a reorganization of language and knowledge. ... It has recourse neither to experimental reason, nor to faith, nor to discursive reason, but rather to [astrological] reason".

AM: This is a circular argument – astrology requires us to assume it works in a way that is explained by astrology.

Part 2. How denial of astrology manifests in academia

Acceptance of astrology requires us to accept that psychic qualities are real, arrive from the heavens, and are felt emotionally. Astrology is attacked not because it is false knowledge or bad metaphysics but because (contrary to the ideology of academia) it helps to organise our consciousness and make sense of the chaotic diversity of our awarenesses.

AM: This is hardly a logical reason for attack. The real reason is that the claims of astrology are incompatible with the way the world is known to work. The claims are not the result of convincing investigations or tests by astrologers, and the beliefs they are based on are readily explained by non-astrological factors such as cognitive illusions, wishful thinking, and vested interests. [Guinard later questioned this statement, see below for his question and my answer.]

Attempts to prove astrology are not needed because astrology needs recognition not "confirmations"; it needs concepts not "facts". Complicated data analyses lead to illusory results that are a caricature of respectable research. If astrology is found lacking, then it is a matter for astrologers to decide, not the presumptuous incompetence of know-alls in lab coats.

AM: Not everyone would agree that astrology needs recognition of its untested claims. It seems that Guinard wants to deny any assessment that is objective and free of vested interests. Such denial is typical of pseudoscience.

Historians see astrology as an obsolete superstition, whereas it is a body of knowledge arising from a larger world view, an opening of the mind to psychic potential. Sociologists want to reproduce only the prejudices of the scientific community.

AM: Criticism from historians is hardly justified unless they have had the relevant training in psychology, especially anomalistic psychology. An untestable astrology cannot be a body of knowledge, only a body of belief. The dismissal of justified criticism as "prejudice" is again typical of a pseudoscience.

Astrologers are divided by endless controversies. By accepting fictitious points such as nodes

and midpoints, the astrologer is forgetting that his model must reflect the real world. "This is why the astrological reading of human reality must remain an impractical ideal".

AM: So how meaningful can astrology be? How can it have no effect on our relations with the world when it is supposed to influence us emotionally via cosmic rhythms? Where should we go from here?

My conclusion

Guinard's position of untestability allows him to safely attack any contrary view and is thus pure pseudoscience [see 4.4.3]. But his claim of untestability is problematic (a point stressed by Kevin Hawley) because by definition the situation cannot then be reliably known by anyone including Guinard. So why should anyone believe his claims about astrology?

Guinard's response

In March 2004 Guinard replied curtly that I had "totally missed his points ... What can be read here is just some remarks issued by a Popperian novice", by which he presumably means anyone who expresses concerns about untestability. Later, in his *Coldbaby* available since 2009 at <http://cura.free.fr/cura2/904coldb.html#rrdd>, he concludes that "there is nothing serious in the nauseating review ... but just obscurantist anti-astrological assumptions, issued from ideological trends of the 18th century".

AM: What is obscurantist about requiring some form of factual proof for claims relating to knowledge? (*Obscurantist* means one who strives to prevent enquiry or enlightenment). Surely the obscurantist is the one attempting to cloud issues with a mantle of untestability, making it impossible to separate them from competing claims or from fantasy.

"Science gives positive results. Pseudoscience just borrows statistical formulas with no results other than alleged debunking conclusions. Who would pay attention to a scientist in a biology laboratory who would only declare ... "we have found nothing of value"?"

AM: Everyone who prefers sound observations to speculation! I am not denying our right to believe anything we like. But the truths revealed by science can be tested by anyone. We can hardly object if people see meaning in Santa Claus.

"The statement *"If it gives meaning, then that meaning can be tested"* is incoherent and absurd. ... [The reviewer] wants to lead us into the province of the testable, which is precisely the main obscurantist prejudice against astrology".

AM: The prejudice is against gullibly accepting supposedly untestable speculations. In astrology there are millions of speculations and we can have them for nothing. Knowledge we have to work for. As for testing what is meaningful for the individual, there are well-established ways of doing this via interviews, questionnaires, and brain scans. Where is the problem?

"As for" *"the claims of astrology are incompatible with the way the world is known to work. The claims are not the result of convincing investigations or tests by astrologers, and are readily explained by non-astrological factors such as cognitive illusions, wishful thinking, and vested interests"*. How does [the reviewer know this?] ... These alleged "cognitive illusions, wishful thinking, and vested interests" have nothing to do with that collective conception of reality which is more or less engaged in by astrologers and a rather large proportion of people that have heard about astrology."

AM: This position has been established by decades of studying both the astrological and psychological evidence [see for example 8.9.10.2]. It is based on evidence, not speculation, but people generally – and astrologers in particular – are seldom aware of it, which of course is precisely the problem. Astrologers insist on using the whole chart but never the whole evidence. Ignorance is allowed to rule their arguments. Guinard concludes his response as follows:

"The *Manifesto* has been poorly presented in this review, and the sceptical reviewer could barely hide his obscurantist assumptions against my writings and against sane astrology. The exterminator has shown that he has not the ability to understand new views, nor to enter into any philosophical argumentation ... he does not try to investigate astrology fairly, but just wishes to smash any positive result, claim, idea. Any further discussion with this kind of person would be a total waste of time and energy."

AM: Guinard's response boils down to name-calling and a plea for the uncritical acceptance of untested ideas as long as he agrees with them. It is scientifically naive, a classic example of pseudoscience and how not to think critically. Of

course testability by itself does not guarantee the status of science, only the semblance of science. But it is an essential first step, especially when the premise being tested has already failed in other areas (as astrology has).

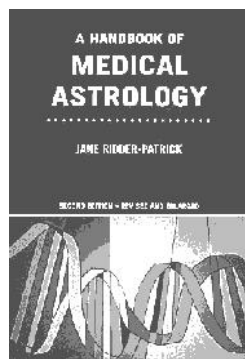
Comment Guinard assumes that astrology as experienced by astrologers has no ordinary explanation, but as shown by the results in the present book he is almost certainly wrong. His position of untestability allows him to attack all contrary views including those arising from empirical tests, but (as Mather points out) to absolutely no avail because if ideas are untestable then by definition they cannot be reliably known by anyone. Guinard's comments represent the kind of classic pseudoscience (with or without the name-calling) that is the default model every time an astrologer closes their mind against awkward facts. Mather's classic response is generally applicable to their arguments and deserves close study.

7.2.2006.1 Does medical astrology open a new era of medicine?

Jane Ridder-Patrick. *A Handbook of Medical Astrology*. Second edition revised and enlarged 2006, 222 pp. The author is a pharmacist and professional astrologer, and editor of the AA's *Astrology and Medicine Newsletter* founded in 1997.

Ridder-Patrick brings together claimed symbolic links between medical conditions, herbs, and diverse chart factors – planets, signs, elements, qualities, houses, aspects, midpoints, transits, progressions, parts, degree areas – in a way that attracted rave reviews from astrologers:

masterpiece ... indispensable ... outstanding contribution ... immensely practical and informative (from back cover).



But there is no attempt to validate the claims, so it is 100% symbolism, 0% tests, even when tests have been published (none with convincing positive results, which would explain their absence). Instead there are bald statements based on Ridder-Patrick's wide experience, such as:

naturally strong constitutions as can be seen from their birth charts (p.15).

and the usual default of supposed statistical irrelevance:

Astrology can be useful in providing insights concerning the diagnosis, prognosis and most effective treatment for individuals and their illnesses. It is in the ability to address the specific, individual case that astrology excels. [Whereas] The experimental data that provide the guidelines for orthodox medical assessment and treatment are based mainly on statistical averages (p.23).

The only empirical support comes from an infrequent citing of findings such as supposed lunar correlations with bleeding and homicide (p.50), even though the support disappears when the full research base is considered as in 8.5.4. And from comments such as:

Astrologically the time around Full Moon has always been regarded as unfavourable for surgical operations, as have times when the Moon is Void of Course [ie no more aspects before it changes sign]. Neither is it favourable to operate when the Moon is in the sign ruling the part of the body to be operated on, nor when it is in those signs opposing or squaring that sign. I have however come across many cases where operations at these times have been completely successful, presumably because nowadays there is a great deal that can be done to control bleeding so it is no longer the problem it once was (pp.50-51).

The more convincing explanation – that success is due to the invalidity of signs see 8.3 – was ignored, which reinforces the views given in 7.2.1989.2 and 7.2.1993.4 that medical astrology is unethical or at least hopelessly uncritical.

On the other hand, bringing together a vast multitude of claims based on symbolism with no attempt to sort out the mess (there is not even an index) does provide astrologers with an engulfing cloud in which appropriate faces can hardly fail to be seen, so we might understand the hope expressed by Charles Harvey in his preface written in 1989:

[For a] transformation of astrology's position in Western thought to come about, it will be necessary for science to arrive at an understanding of the real principles of astrology. ... Now in this work Ridder-Patrick, with her deep understanding of medical and astrological principles, opens the way to a new era of astro-diagnosis and astro-medicine. [It is] vitally important work for the true healing of mankind and the world (pp.9-10).

But even in 1989 Ridder-Patrick's uncritical approach hardly justified such hope. The 2006 edition is no better – the folly of applying symbolism to practical matters of health could

hardly be better illustrated. The author may have good intentions but the wrong thing done for the right reason is still the wrong thing (Wright and Cummings (eds) *Destructive Trends in Mental Health: The Well-Intentioned Path to Harm* 2005). To be sure, in 1990 she had stated:

I know from more than ten years of almost daily hands-on experience that astrology is a valid and useful tool for understanding our world and our relationship with it (see 4.1.3).

But for others to claim *without the slightest empirical support* that the principles of astrology open the way to advances in medicine will be seen by educated people as clearly absurd and clearly unethical if it gives rise to false hopes. The reference to science in the double helix design on the cover is entirely misleading. Astrologers cannot expect to be taken seriously if they can issue such rave reviews about medical astrology. Does it have to be like this?

7.2.2006.2 Saving a disenchanted world with astrology

Richard Tarnas, *Cosmos and Psyche: Intimations of a New World View*, 569 pp, Penguin Viking, 2006. This account is based on reviews by Geoffrey Dean, *Skeptical Inquirer* 30(4), 56-58, 2006, John Heron, *Journal of the Scientific and Medical Network* 95, 11-16, 2007, and Kieron Le Grice, *Journal of the Scientific and Medical Network* 96, 13-15, 2008.



How it started

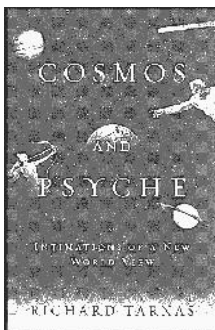
In K Olivetti, *Jung Journal*, 9(4), 98-124, 2015, Tarnas (left) and psychiatrist Stanislav Grof (right) describe their days in the 1970s-1980s at Esalen, a 1962 non-profit retreat centre in California supporting alternative methods for exploring human consciousness. They could not explain the differences in psychedelic experiences between people and those for the same person. The MMPI and other tests were not helpful.

But a visiting astrologer suggested they look at transits to the person's birth chart. And when they compared their own transits with the records of their own LSD sessions over the years:

We were astonished to see the precision and the consistency of the correlations. What was happening in our sessions under those transits were archetypally potentiated versions [ie they matched the symbolism] of the more everyday experiences that were described in the [astrology] texts" (p.110).

Comment In 1919 Jung (1876-1961) adopted *archetypes* to describe universal themes such as Father, Rebel, and Death, supposedly transmitted genetically via what he called the *collective unconscious* supposedly common to all people, and which emerged in *synchronicity*, where the same transcendental meaning (ie going beyond ordinary experience) arises simultaneously in both the human mind and an external event, especially in emotional crises. Archetypes cannot be examined directly like a personality trait, only as outcomes; they have no specific content and can easily match almost anything (is the glass half-full or half-empty?). Ernest Gallo, a lecturer in critical thinking at the University of Massachusetts, comments:

Richness of meaning is secured by progressively emptying the archetype of specific – and hence limiting – content: in the end the archetype become an empty domain ... whose pretense to scientific rigor depends solely on the slipperiness of its private language (Synchronicity and the Archetypes, *Skeptical Inquirer* 18(4), 396-403, 1994).

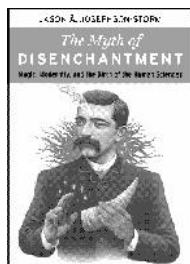


Mix this slipperiness with the slipperiness of astrological symbolism and seeming profundity is guaranteed. Thus a Mars transit is unable to predict concrete Mars things like bullying or trading in knives but only the archetypes of Mars (*energy, assertiveness*), giving many possibilities all making astrological sense except we cannot predict which possibility until after the event. Of course the vaguer the prediction the better the hit rate, so should anyone be surprised? **End of comment.** Later came *Cosmos and Psyche*:

Cosmos and Psyche: Intimation of a New World View

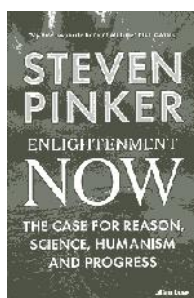
Here Tarnas sees the modern world as disenchanted, lacking any spiritual dimension, and "spectacularly inadequate to the depths, complexity, and grandeur of the cosmos" (p.40). But there is hope, because astrology promises "the emergence of a new, genuinely integral world view", one that "can reunite the human and the cosmic, and

restore transcendent meaning to both" (p.490). Tarnas is dismayed that skeptics "assume the entire universe is ultimately a soulless void" (p.40) when astrology indicates the opposite. To him mystery (enchantment) is to be valued before concrete knowledge (disenchantment).



But is the world really disenchanted? Richard Jenkins (*Max Weber Studies* 1(1), 11-32, 2000) notes that in a world where there is more to life than the material or the explainable, disenchantment may not even be a possibility (p.29). US historian of religion Jason Josephson-Storck in his 2017 book *The Myth of Disenchantment* points out that the idea of disenchantment formed when Britain, France, and Germany were in the midst of occult and spiritualist revivals, and that attempts to suppress enchantment have failed more often than they succeeded. So "we have never been disenchanted" (p.3).

Taking a deliberately pragmatic approach, Harvard professor of psychology Steven Pinker in his 2018 book *Enlightenment Now* points out that many intellectuals see science as stripping life of its enchantment, freedom and dignity (p.34). But they are seriously cherry-picking:



It's easy to extol transcendent values in the abstract, but most people prioritize life, health, safety, literacy, sustenance, and stimulation for the obvious reason that these goods are a prerequisite to everything else. ... And here is a shocker: *The world has made spectacular progress in every single measure of human well-being* (pp.51-52).

His point is supported by 75 graphs and over 2200 references and notes:

We will never have a perfect world ... But there is no limit to the betterments we can attain if we continue to apply knowledge [including science] to enhance human flourishing. ... For it requires only the convictions that life is better than death, health is better than sickness, abundance is better than want, freedom is better than coercion, happiness is better than suffering, and knowledge is better than superstition and ignorance (p.453).

Tarnas ignores such contrary views. For his purpose the world has to be disenchanted.

Putting astrology to the test

Tarnas's approach is simple – he explains what each planetary archetype means and then gives examples of it in action. His examples occupy more than 400 pages and are drawn from an impressive range of philosophical, religious, literary and scientific sources and involve two kinds of comparison: (1) historical events vs specific angular relationships between the five outer planets JU-PL, and (2) the lives of prominent people vs their birth charts. Here the archetypes are essentially the principles behind each planetary god as given in Western astrology books.

The idea seems simple enough but there are problems. The archetypal god of war was Mars to the Greeks but the Sun to the Aztecs (Phillips and Jones, *The Mythology of the Aztec & Maya*, 2006). It is possible to join any archetype with any other archetype – even opposites like Jupiter and Saturn are meaningless when taken on their own without the other, just as day is meaningless without night – which as noted in the above Comment makes the doctrine impossible to falsify. As if there was not enough nonfalsifiability already in Tarnas's work.

Archetypes in historical events

Tarnas explains what each planetary-pair archetype means, and then shows how it can be discerned in the events that are coincident with it. For example, Saturn-Neptune (materialistic Saturn conflicts with spiritual Neptune) means either the enlightening of materialism or the dimming of spirituality. Like any planetary pair it manifests when the planets are in major aspect to each other, especially the conjunction, square, and opposition. For example a Saturn-Neptune conjunction occurred in 2005 (coincident with the Asian tsunami and New Orleans flooding), or, given the traditional connection between Neptune and the sea, "death caused by water" (p.471). Why the rest of us survived is not explained.

Archetypes in birth charts

Tarnas shows how a particular planetary archetype can be discerned in the lives of prominent people whose births are coincident with it. He considers the possibility that such events might

be expected anyway, but the exactness of the timing, and the correspondence with the planet transited (thus Uranus transiting natal Venus differs from Uranus transiting natal Mars), leads him to discount that possibility (p.114). He adds:

I have seldom researched a biography for which I had sufficiently detailed records of the major inner and outer events in a person's life where I did not find the above patterning readily visible (p.125).

Which seems unremarkable given the generality of archetypes, the diversity of events, and his unusually large orbs of 5° that can extend the applicable period to 10 or more years.

Fatal defects

An archetype's meaning has so many possible outcomes that it reads like an entry in Roget's thesaurus. Thus Tarnas's brief summary of the Jupiter archetype requires more than 80 words:

Jupiter: the principle of expansion, magnitude, growth, elevation, superiority; the capacity and impulse to enlarge and grow, to ascend and progress, to improve and magnify, to incorporate that which is external, to make greater wholes, to inflate; to experience success, honor, advancement, plenitude, abundance, prodigality, excess, surfeit; the capacity or inclination for magnanimity, optimism, enthusiasm, exuberance, joy, joviality, liberality, breadth of experience, philosophical and cultural aspiration, comprehensiveness and largeness of vision, pride, arrogance, aggrandizement, extravagance; fecundity, fortune, and providence; Zeus, the king of the Olympian gods (pp.90-91).

Ironically his brief summary for Saturn *limitation* is more than twice as long. When multiple planets are involved, as is nearly always the case, the resulting collective archetype requires many pages to even briefly describe each possible outcome. The problem then gets worse:

Tarnas picks the factors to be examined and ignores the rest. Remarkably, he does not claim that the world experiences planetary-type events when the planets are in aspect. He claims only that such aspects correspond with periods in which the relevant events are more readily discernible. So the events do not stop when the aspect is out of orb but "continue to unfold ... well after the alignment is over" (p.466). In other words archetypal events can be observed outside the aspect period, so his claim would seem almost impossible to falsify.

Unfortunately Tarnas ignores relevant work by others such as Gauquelin's (negative) results for transits, and astrologer Marjorie Orr's 2002 book *The Astrological History of the World*, which looks at the same planets but considers only conjunctions with orbs of "a few degrees" (p.15). Lack of scholarship might be acceptable from a beginning student but not from a professor of philosophy intent on upsetting current world views.

Problems due to dismissing statistics

Statistical studies are dismissed with no explanation other than they have "added relatively little to the astrological understanding" (pp.76 and 462-463). Which will be news to readers of the present book. Tarnas seems to be supporting the view of US philosopher and former physicist Charles S. Peirce (1839-1914) that "It is ... easy to be certain. One has only to be sufficiently vague". Which lands Tarnas in deep trouble, as when he looks at the "archetypal dynamics" of aspects between the five outer planets and concurrent historical events using unusually large orbs of up to 20° (p.148). If correspondences are found (they are always found), then to him his astrology is proven. More specifically:

I have become convinced, after the most painstaking investigation and critical assessment of which I am capable, that there does in fact exist a highly significant – indeed a pervasive – correspondence between planetary movements and human affairs, and that the modern assumption to the contrary has been erroneous" (pp.68-69).

But among five outer planets there are 5C2 = ten possible pairs, from which Tarnas considers six. Their motion is sufficiently regular for the chance of an aspect to be calculated by simple arithmetic. With his large orbs, and regardless of the historical event chosen from an almost unlimited supply, there will nearly always be several planetary pairs in aspect to compare it with. Thus for his chosen six pairs an orb of 15° produces at least two pairs in aspect 98% of the time and three pairs 90% of the time. For the ten pairs from which Tarnas has chosen six, an orb of 20° produces at least five pairs in aspect 99% of the time and six pairs 95% of the time. Since a whole pageful of words may not be enough to describe the archetypal possi-

bilities of each pair, finding a correspondence in all this mess will be even easier than finding faces in clouds. By now it will be clear that hidden persuaders are everywhere.

Similar problems arise when Tarnas looks at birth charts. His chart interpretations routinely break astrology's Golden Rule, perhaps the only rule that astrologers other than newspaper astrologers have ever agreed on, namely *no chart factor shall be judged in isolation*. That is, only the whole chart can mean anything, just as we cannot extract tomato from a pizza and conclude it is tomato pie. A complication here is that astrologers, having agreed on their Golden Rule, immediately disagree on what the whole chart should consist of. One astrologer might specify N factors while another might specify $2N$ or even $10N$ factors. And they can disagree not just on number but on everything else, for example Eastern astrologers (who outnumber Western astrologers by an order of magnitude) use a different zodiac and exclude planets beyond Saturn, so already three of Tarnas's five are off-limits.

But Tarnas seldom looks at whole charts however defined, or gives actual charts or even birth data, perhaps a case of "trust me, I'm a philosopher".

Bring on the controls

Controls are of course absolutely essential and would have avoided all such problems. But nothing so materialistic is allowed to upset the enchanted findings. Moreover, as every first-year psychology student knows, positive cases do not necessarily indicate a correspondence. As when Nelson's counting positive cases in his astrology-like forecasts of radio quality led to apparent hit rates of 93%, which for thirty years led him to promote the wrong conclusion, see 7.4.1978.2. So we need to know if Tarnas's apparently positive results also apply to control events and charts. If they do, we conclude that no correspondence exists unless more rigorous tests show otherwise. But Tarnas does not use controls or even hint at their importance:

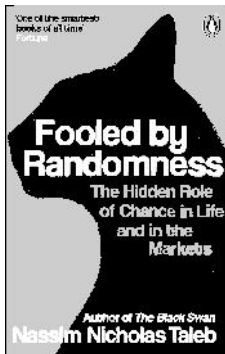
The coincidence between planetary positions and appropriate biographical and psychological phenomena was in general so precise and consistent as to make it altogether impossible for me to regard the intricate patterning as merely the product of chance (p.66).

Tarnas seems unaware that astrologers can match wrong charts to people and events just as effortlessly as they can match right charts. Former astrologer John Heron gives this example:

I once gave a talk to a group of friends, all of whom believed in their tropical sun signs, and convinced them – by ostensibly plausible but spurious arguments in which I did not really believe – that it was better to use the sidereal zodiac. Once they were persuaded, I went round the room and announced to each one their new sun sign. In every case, they embraced the new sign with a sense of liberating insight (p.12). [ie they saw what they believed]

Conclusion

Cosmos and Psyche shows how not to do research by an academic who should know better. Why be disenchanted when you can have nonfalsifiability? For an update see 7.7.2020.10.



7.2.2007.1 Astrology as a reverse Turing test

Adapted from Nassim Nicholas Taleb. *Fooled by Randomness: The hidden role of chance in life and in the markets*. 2nd edition 2007. As an aside Taleb invents the reverse Turing test (p.72), and mentions astrology as evading disproof (p.127) via its many ways of explaining error (see 4.8.2). But he does not bring the two together. Here we fill the gap.

Taleb argues that human beings are driven to seek non-existent patterns in the randomness of life events, and are thus fooled by it.

The Turing test was proposed by British computer pioneer Alan Turing (1912-1954), who laid the first foundations of artificial intelligence and in WW2 broke the codes of the German Enigma coding machine. Here Taleb describes the test and suggests it could be applied in reverse:

A computer can be said to be intelligent if it can (on average) fool a human into mistaking it for another human. The converse should be true. A human can be said to be unintelligent if we can replicate his speech by a computer, which we know is unintelligent, and fool a human into believing that it was written by a human (p.72).

He then shows how computers fed with postmodernist texts:

can randomize phrases under a method called recursive grammar, and produce grammatically sound but entirely meaningless sentences that sound like Jacques Derrida, Camille Paglia, and such a crowd [ie leading postmodernists]. Owing to the fuzziness of his thought, the literary intellectual can be fooled by randomness (p.73).

To illustrate his point, Taleb gives examples that include these excerpts:

The neodialectic paradigm of expression implies that consciousness may be used to reinforce hierarchy; but only if reality is distinct from consciousness can we assume that language has intrinsic meaning (p.73).

Sound is the change in the specific condition of segregation of the material parts, and in the negation of this condition; merely an abstract or an ideal ideality, as it were, of that specification (p.74).

Which one is computer-generated and which one is from the German philosopher Hegel? If you have no idea, welcome to the club. Taleb comments:

Hegel writes a jargon that is meaningless outside of a chic Left Bank Parisian café or the humanities department of some university extremely well insulated from the real world (p.74). [Hegel is #2]

Back at the reverse Turing test (and here we follow Taleb's lead) astrology can be said to have *no connection with the heavens* if: (1) An interpretation can be produced by a computer (which we know is unconnected with the heavens) and fool a human into believing it was written by an astrologer. (2) A chart taken at random can fool a human into believing it is theirs.

As shown in 8.6.11 and 8.9.9, both (1) and (2) happen to be true. Today's computerised chart interpretations are routinely sold by established professionals as genuine articles. And clients are no more able to pick their own astrologer readings than their own computer readings. The conclusion (that astrology has no connection with the heavens) then follows automatically.

However, Taleb's aversion to nonsense disappears when it comes to art and poetry, see 8.9.8 for an example. So where does he draw the line?

The answer is aesthetics. Some aesthetic forms appeal to something in our biology, whether or not they originate in random associations or plain hallucination. Something in our human genes is deeply moved by the fuzziness and ambiguity of language; then why fight it? (p.75). [ie the ability of clouds to reveal faces should not be sneezed at]

7.2.2008.1 Parallels between tasseography and astrology



Jacqueline Towers. *Simply Tea Leaf Reading* 2008, 156pp. Most of the book is devoted to shapes (including astrological symbols) and their meanings. No references, excellent index.

Tasseography, more commonly known as tea leaf reading, is the reading of shapes left in a cup by tea leaves, coffee grounds, or anything with bits in it. It originated in China and is as old as drinking from cups:

In the 17th and early 18th centuries, tasseography was widely practiced because it didn't require the use of unusual objects that would have marked the practitioner as a witch. Everyone had tea and a teapot in the home, so nobody could be accused of witchcraft just for owning those items. ... In the later twentieth century, tea leaf reading fell out of fashion, probably due to the rise in popularity of fortune-telling cards. Tea leaf reading and coffee ground reading are now regaining popularity all around the world (p.13).

The author asks the obvious question:

Why should people read leaves and grounds rather than other things? Why not read coins, peanuts, clouds in the sky, or anything else? The truth is that intuitive people can "read" just about anything. For example, it used to be common for people to read the flames in the fire as the coal or wood burned in the household hearth. Africans still read messages from the shapes in clouds, as well as reading stones, shells, bones, and seeds. In Europe, there were specialist readers who asked their clients to bring them a few dried leaves, and then crumple them in their hands and let them fall onto the ground, so that the reader could then read the shapes (pp.1-2).

At which point we can see how certain parallels with astrology emerge:

The best readers are those with an artistic eye, who can see shapes forming that look like boats, trees, rabbits, and the like. ... anyone can learn to read the leaves. ... All you need to do is to pick out the shapes and look them up in the dictionary, and you will then be able to give anyone a reading. But if you keep going and if you read for more and more people, you will find the shapes gathering together more quickly in your mind's eye; and second, you will start to build up a repertoire of leaf meanings in your own mind (pp.2-3).

An open-minded attitude is essential to our being able to receive (and distinguish) anything. There has to be a willingness to respond to non-physical stimulus, and an ability to trust the information received (p.5).

Especially as:

In time, you will build up your own personal dictionary, and your interpretation of certain shapes may be different from those in this book. This is normal, because good readers always develop their own ideas as to the specific meanings in time. This applies to tea leaves, tarot cards, numerology, and much else, because it is the personal touch that makes these readings so magical. Some of you will find that ... your intuition about people and situations starts to expand and develop. You may even find yourself becoming psychic (p.151).

The only downsides are:

People take what they hear seriously. ... if you think the news is particularly bad, perhaps give up some of your integrity and soften the message. Professional readers know that the information that they receive from the tarot, from tea leaves, or from their spiritual guides can sometimes be over the top and too harsh. They know that the problem that they see can turn out to be less black than it appears in the reading. It is entirely possible to pick up on someone's worry or unsettled state of mind and think that this indicates some future disaster. So do take care.

The only other downside is that you will become too good at tea leaf reading. So ... the world and his wife will soon be at your door, asking you to read for them ... At this point, you can choose to become a professional by asking your clients to pay you a little money for their readings or you can learn to say no. ... You need to enjoy giving readings and you will want others to get something out of them, but you don't need to become a sucker (pp.151-152).

Comment Things like using the right kind of tea (bigger leaves make better shapes), the right kind of cup (plain white interior that is not fluted or too narrow, not mugs), and the right ritual to leave the best shapes (the client holds the cup in both hands to drink the tea, you then hold the cup in both hands and swirl the dregs three times, with the handle towards you for the reading) are as relevant as using the right zodiac and chart form. But notice how tea leaf reading and chart reading reduce to the same basic idea – you see shapes with meanings that initially you have to look up but later modify in the light of your own experience. If it works for tea leaves and coffee grounds then (as the author points out) it will work for anything including faces in clouds. All you need is open-mindedness, imagination, sensitivity, and a lack of critical thinking. Which, if you think about it, describes astrology to a T.

7.2.2009.1 Are you sure archetypes cannot be tested?

Keiron Le Grice, *Foundations of an Archetypal Cosmology: A Theoretical Synthesis of Jungian Depth Psychology and the New Paradigm Sciences*. PhD thesis in Philosophy and Religion, California Institute of Integral Studies, 2009. His chief supervisor was Richard Tarnas, author of *Cosmos and Psyche* 2006, whose views (see 7.2.2006.2) are here expanded.

Le Grice notes that scientific research into astrology has failed to support a significant link between the heavens and human life, but this is easily explained due to a fundamental misconception by astrologers and scientists about the nature of astrology, which does not:

reveal the specific, concrete details of human life such as one's career or one's material circumstance [but only] the archetypal meaning of human experience; and it is because of the archetypal, multidimensional nature of astrological correlations that it eludes the orthodox scientific method of investigation (p.72).

The archetypal meanings are the planetary principles given in astrology textbooks like Mars *aggression* and Saturn *limitation*. Thus a Mars-Saturn aspect could manifest as anger (Mars) or an inability to express anger (Saturn), or as someone inclined to fight or not fight. The exact outcomes are unpredictable (which is what supposedly makes them impossible to test), but all are consistent with Mars *aggression* and Saturn *limitation*. To Le Grice this sort of thing makes for "a relatively coherent view of reality":

In an age when, for many, the traditional religions no longer provide the spiritual sustenance they once did, an astrologically informed world view ... could help to bring us into a meaningful conscious relationship with a deeper cosmic order shaping our lives (p.308).

Comment Le Grice does not explain how anyone could know anything about archetypes when by definition they have no consistent link with anything observable except by seeing faces in clouds. In effect it is like defining ghosts as invisible in order to explain why they cannot be seen as opposed to defining ghosts as imaginary. Also the assumed inutility of scientific tests requires concrete outcomes to be so diverse that no clear path from archetype to outcomes is possible. But see how this changes when the direction is reversed:

A concrete outcome must by definition relate back to its originating archetype. So astrologers and their clients should be able to pick the correct chart (ie the correct archetypes) from several, but there is no evidence that they can perform better than chance, see 8.6. Indeed, there is some evidence that archetypes can indeed be tested. Three examples:

Factor analysis of the preferences by 151 subjects for various images of *Hero* and *Mother* in good, bad, and indifferent versions found significant $p < 0.005$ agreement (Maloney, *Journal of Analytical Psychology* 44(1), 101-116, 1999).

Akansha Dutt (*An Examination of Archetypal Inference in Tarot Symbolology*. PhD thesis, Chicago School of Professional Psychology 2013) gave a list of 12 major archetypes with meanings in A-Z order (*Caregiver, Creator, Destroyer, Fool, Innocent, Lover, Magician, Orphan, Ruler, Sage, Seeker, Warrior*) to 6 faculty members with at least 10 years experience of the Tarot or of Jungian theory, and 44 graduate volunteers. They had to rank the three archetypes that best matched each of the 22 Major Arcana cards from the 1909 Rider-Waite Tarot deck designed for "spiritual transformation and the elevation of consciousness". The results showed much scatter, each card being matched to typically 7 top-ranked archetypes. Agreement was best for *Death, Emperor, Tower*, worst for *High Priestess, World, Chariot*, and in between for *Fool, Fortune, Magician*. So matching meanings to archetypes was far from clear-cut.

A total of 237 subjects either freely guessed, or selected from a list, one meaning word for each of 30 symbols (mostly photographs) representing things like earth, health, power, salvation. The subjects had little conscious knowledge of their meaning but scored better than chance, albeit not for all pairs. On seeing two sets of symbols and meanings (15 matched correctly, 15 incorrectly, thus egg correctly matched *potential* not *shell*), correct matches were recalled more frequently than incorrect (52% vs 48%). But it was unclear whether this was due to archetypes or simple "descriptive similarity" (Bradshaw and Storm, *International Journal of Jungian Studies*, 5(2), 154-176, 2013).

If controlled tests of astrology provide no support for astrological claims, they also provide no support for archetypes other than as a large cloud in which to see unlimited faces.

7.2.2009.2 Proving astrology with 30 cloned cows

Suzel Fuzeau-Braesch. *Astrology Off the Beaten Path: A Scientific Study of Planets and Personality* 2009:67-72. Cells from the animal to be cloned are put into the unfertilised egg of another animal from which the nucleus (and thus its genetic material) has been removed. The resulting egg containing the donor's genetic material is treated chemically or electrically to stimulate cell division. Eventually it is transferred to the uterus of a surrogate mother where it continues to develop until birth, just like an egg that has been fertilized naturally. The result is a baby with the same DNA as the adult donor. If clones are genetically identical but behave differently, might the difference be explained by astrology?

In France the Institut National de la Recherche Agronomique was working on 30 cloned cows, each delivered by caesarean section under a local anaesthetic with the date and time being carefully recorded (the place was the same for all). Each was separated from its mother and fed from bottles with identical contents. They were raised in groups of two or three while young, after which they lived with the herd.

The longevity and behaviour of cloned animals is known to differ. To see if the differences could be explained by astrology, SFB persuaded the researchers to join her in a double-blind experiment in which they identified the main dominant animals and she calculated the birth charts, each blind to the other. When finished, they compared notes. She points out that the sample was too small to allow statistical analysis, but the results were suggestive:

- Of seven cows with an angular Jupiter, three had Jupiter alone with no moderating factors due to other planets, and two of the three were aggressive or dominant.
- Six cows described as calm were under Venus or Mercury, in one case Uranus, in another Venus/Saturn/Pluto in soft aspect with the angles.
- Of four cows that became more vigorous with more character, two had an angular Mars.
- One cow with Saturn alone on an angle was described as "nervous, curious, becoming calmer".
- One cow with Neptune alone on an angle was described as "calm, discreet".
- One cow with Uranus on an angle and a SO-JU-SA trine "knocks about in milking stall, slow to get used to equipment".
- Of three cows described as obstinate, one had Sun in Leo, the other two had no clear correspondence.

Unfortunately SFB does not indicate the orbs used, nor the birth data for each cow, so an independent assessment is not possible. She concludes:

Most significant, in this empirical approach, it is obvious that each clone, in spite of identical heredity, can have an individual pattern of behavior. So far, no other scientific explanation has been proposed to explain this difference in behavior. Given these first empirical observations, the study of birth sky charts in this context is clearly a new and

promising prospect. The results ... correspond perfectly to a classical astrological law, which states that a strong relationship exists between what are termed "angular" sky elements and personality (pp.71-72).

Comment But other scientific explanations are indeed known. The above clone technology has been around since the 1970s and is now common practice. Today hundreds of cloned animals exist, including cows, sheep, goats, pigs, cats, rabbits, mice, and a few endangered species. But the number of species is limited – the process of replacing an egg's nucleus is traumatic, which some species resist, some more than others. The process is very expensive (the first pet cat clone cost \$50,000) and inefficient (the first cloned sheep "Dolly" needed nearly 300 tries). There are high rates of death, deformity, disability, and infection, probably due to programming errors in the sample of transferred DNA. Thus a normal embryo receives copies of most genes from both parents, only one of which is turned on (a form of insurance not available to clones), which is thus exposed to any defects in the DNA from a single donor.

In general more than 90% of cloning attempts fail to produce viable offspring. Health is not a good indicator of long-term survival, and some clones have died for no apparent reason. For example, Australia's first cloned sheep appeared healthy and energetic on the day she died, but an autopsy failed to determine a cause of death.

Far from being a man-made invention, cloning is a natural form of reproduction that has allowed life forms to spread for more than 50 thousand years. It is the reproduction method used by plants, fungi, and bacteria; and many trees, shrubs, vines, ferns and other herbaceous perennials form clonal colonies to reproduce themselves. Many horticultural plant cultivars are clones, having been derived from a single individual, multiplied by some process other than sexual reproduction. For example, some European grape cultivars are clones that have been propagated for over two millennia.

More to the point, the resulting animal clone is not a true identical clone of the donor animal. Only the clone's chromosomal DNA is the same as the donor's. Some of the clone's genetic material still comes from short segments of DNA in the denucleated egg. Add environmental effects on personality, and clones can end up as variable as normal births. Some examples:

Archer et al (*Applied Animal Behaviour Science* 81(4), 321-331, 2003 and 82(2), 151-161, 2003) found that cloned pigs can be as variable in physical appearance and behaviour as normally bred pigs. Two litters of cloned female pigs (N=4,5) were compared with two control litters of purebred pigs (N=4,4) of the same breed and sex and born within the same week as the clones. They found that things like size, weight, hair type, food preference, temperament and behaviour preference were not the same because the DNA has been modified during the cloning process in such a way that it affects the activity of certain genes. Thus the benefits of cloning are better realized when the clone has offspring of its own, because any genetic errors will be corrected. Clones may be genetically identical to the original animal, but the similarities end there. At the time, the authors' lab had the largest number of cloned pigs in the world.

Coulon et al (*Theriogenology* 68(8), 1097-1103, 2007) compared five cloned heifers with five normal same-age heifers for locomotion, exploratory, vocal and social behaviours, both in a group and alone. There were no statistical differences between clones and their controls in frequencies of both dominant and non-dominant behaviors. Both clones and controls were significantly less dominant in their own group than in a mixed group, ie they favoured their own company, but the effect was linked to body weight and age rather than to a cloning effect. In an unfamiliar environment, clones showed more exploratory behaviours, but this could be due to environmental factors after birth rather than to cloning.

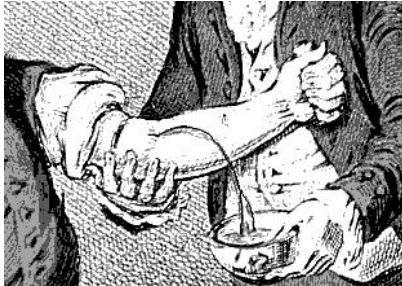
Søndergaard et al (*Applied Animal Behavior Science* 141(1-2), 20-24, 2012) tested the effect of cloning on six minipigs and six controls using 24 behavioural variables. The results showed that the variability in the clones was much the same as in the naturally bred controls.

Bierbach et al (*Nature Communications*, 8, 15361, 2017) point out that both genetics and environment are seen to have an effect on animal behaviour. But what happens when both genetics and environment are identical for all individuals? To find out, they studied the Amazon *molly*, a fish that reproduces clonally so that each offspring is an exact genetic copy of its mother. Newborn Amazon mollies were either kept individually under identical conditions from birth, or kept for respectively one or three weeks in groups of four before being separated. After seven weeks, the researchers found that the fish showed the same behavioural differences regardless of their history. Which suggested that tiny differences in environmental conditions, or in random changes in gene function, both impossible to completely remove from any experiment, were the source of the behavioural differences.

Experiments with cats show that nutrition in the womb, social contact with the mother during the first four weeks, and their general environment is as important as genes in determining a cat's personality. And having the same DNA doesn't always produce the same coat pattern. So the clone will not necessarily act or even look like the original. In other words cloning does not lead to duplication. For example one famous donor is a splotchy brown and tan on white, while her clone is striped grey on white. The donor is reserved, her clone is playful. For good pictures of these cats see <https://www.britannica.com/list/cc-the-first-cloned-cat>

Conclusion: There is more than enough scientific explanation for the observed differences between clones to deny their potential as an unambiguous test of astrology.

7.2.2010.1 Parallels between bloodletting and astrology



Bloodletting is an example of an invasive medical practice that is as old as astrology. For many centuries it was wildly popular despite being invalid and sometimes fatal, so a comparison with astrology seems overdue. The bloodletting information below is from the history of medicine literature. Specific quotes are from G Greenstone, The history of bloodletting, *BC Medical Journal* [British Columbia] 52(1), 11-14, 2010 .

There are surprisingly many parallels between astrology and bloodletting. Both began more than 3000 years ago in respectively Mesopotamia and Egypt. Both were in common use by 100 AD. Both continued with the Greeks, Romans, Arabs, and Asians, then spread through Europe during the Middle Ages and Renaissance and eventually to America. Both were wildly popular in their day. Thus astrology was seen as relevant to everything that humans could experience, while bloodletting was the standard treatment for almost every possible ailment from acne to scurvy and smallpox. Both aroused intense feelings in practitioners and opponents (think of Pico vs astrologers in 1495), and intense argument about their validity:

At the Edinburgh School of Medicine Dr William Alison (1790–1859) and Dr Hughes Bennett (1812–1875) were a study in contrasts. The former was a dignified old-timer and strong believer in bloodletting, while the latter was an arrogant newcomer and resolute debunker of bloodletting. Whereas Dr Alison followed the old tradition of clinical experience and empirical observation, Dr Bennett believed in the new methods of pathology and physiology supported by the microscope and the stethoscope. ... Both were implacable in their points of view, thereby underlining the significant gap between their beliefs in empirical observation versus scientific verification (Greenstone p.13).

The same was of course true of astrology. Both were confronted by advances in knowledge that were strongly resisted but which eventually discredited them for most of their claimed applications – bloodletting in the late 19th century and astrology in the late 20th century. Today bloodletting is known to be ineffective for nearly all diseases and is actually harmful because it can weaken the subject and help infections. In which case:

We may wonder why the practice of bloodletting persisted for so long, especially when discoveries by Vesalius and Harvey in the 16th and 17th centuries exposed the significant errors of Galenic anatomy and physiology. However as Kerridge and Lowe [*Medical Journal of Australia* 163, 631-633, 1995] have stated, “that bloodletting survived for so long is not an intellectual anomaly – it resulted from the dynamic interaction of social, economic, and intellectual pressures, a process that continues to determine medical practice” (Greenstone p.14).

In other words facts alone were not enough even when they seemed decisive, as Ignaz Semmelweis (1818-1865) found when asking doctors to disinfect their hands in obstetrics. Facts against established views have no effect unless they are supported by (1) good reasons why the established views are wrong, and (2) a superior substitute, neither of which applied to bloodletting for most of its long life. Thus the nature of disease, the key to curing disease, and ways of measuring treatment effectiveness, all remained elusive until the second half of the

19th century. But once they were established, so were (1) and (2), and bloodletting started to disappear. Its longevity meant nothing, and it was gone by the early 20th century, although it was still recommended by Sir William Osler in the 1923 edition of his textbook *The Principles and Practice of Medicine*. Today it survives in Western medicine only for rare disorders of iron metabolism and red blood cells, where a reduction in blood volume can be helpful.

The same points (1) and (2) apply to any successful overturning of established views, which was cynically expressed in Max Planck's 1906 maxim that "a new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it".

Comment Today parts of astrology are just as wildly popular as bloodletting once was, and are just as invalid. But times are changing. Will future astrologers be able to shout proudly from the rooftops that astrology is "so plainly demonstrated that its non-acceptance is next to impossible"? Before venturing an opinion, bear in mind that this is what *The British Phrenological Year Book* 1896:64 said about phrenology, see 7.2.1998.6.

7.2.2011.1 How to talk with gods: visit an astrologer

Lindsay Radermacher, *The role of dialogue in astrological divination*. Masters thesis in Theology and Religious Studies, University of Kent at Canterbury, 2011. Radermacher's views are not necessarily shared by divinatory astrologers in general, but they most usefully build on and extend the divinatory ideas of Geoffrey Cornelius, see 7.2.1998.8.

Having a divinatory astrologer read your chart helps you "meet with the divine ... a form of transpersonal intelligence" (page i), where you and the astrologer together seek "information by means other than natural ones" (pp.72-73). The aim is to make the unknown known.

Historically the "means" has been something *externalised* like a spirit or god. But in modern divinatory astrology it is something *internalised* like the unconscious or a higher self. Either way, both diviner and client accept that the means is potentially effective and helpful. But there is an important difference. Historically the aim has been to tell the client's future whereas in modern divinatory astrology the aim is to uncover topics for discussion – hence the importance of dialogue.

While traditional astrology (*as above so below*) is "a means towards self-knowledge" (page v), divinatory astrology involves the *interaction* between astrologer and client where astrological symbols and imagination play a central role. The client asks the diviner questions which are then discussed rather than directly answered. It is not about knowing the client's future but about enabling a better life in the present. It is a joint venture in which the astrologer feels in touch with something beyond normal experience. To non-divinatory astrologers (as most are) and non-believing clients this meet-the-divine the approach will seem irrational (p.82).

So how does it work? Easy. Diviners need a *ritual* (a set of fixed actions often with words) to create a sense of numinous mystery and a mind receptive to divine influences. As an example of such fixed actions, Radermacher cites the Tarot, where a traditional ritual might involve:

observing particular ways of shuffling and spreading the cards; being clear whether the Tarot reader or her client is to turn over certain cards; perhaps keeping the pack in a silk cloth or a particular container; laying out the cards on a special surface; washing one's hands before touching the cards, and so forth. By exerting 'control' over these details of pre-divination ritual, the Tarot practitioner is moving towards a position where rational control is diminished, and a space opens up [to which] the Tarot reader and the client respond (p.86). [Although Radermacher sees astrology and Tarot as having similar divinatory characteristics (p.80) she does not actually compare them, whereas Gettings gives numerous reasons for preferring Tarot, see 7.2.1986.2]

But unless both diviner and client are serious and focused, the process is unlikely to work. When it does work the result can be seen as proof of a divine origin (p.87). A crucial part of the *astrological* ritual is the significance given to an accurate time of birth:

If this later turns out to have been chronologically inaccurate, it does not – strangely – seem to affect the efficacy or radicality of the chart. This curious phenomenon is part of Cornelius' argument against the 'seed moment' and the 'machine of destiny' (p.95). [This is related to the wrong chart effect, see 8.9.9]

The ritual allows the strong desire for wisdom and a greater good to take priority over an interest in the future for personal gain or idle curiosity, thus allowing mysteries that are resistant to direct verbal expression to manifest through the interpretation of symbols. But there is a problem. Over her many years as a professional divinatory astrologer:

I have often been approached by people in a state of excitement, bringing charts to show me, in which they regard the presence of certain symbols to be hugely significant. My (private) assessment of the astrological symbols involved is that they often seem to be either inappropriate or imprecise in relation to the given situation. ... these charts evidently have meaning for the people who bring them, yet they did not 'speak' to me at all (p.107).

So is her approach true divination or merely seeing faces in clouds? She concludes that this is something that "continues to be problematic" (p.107), but offers no solution.

Comment Although the divine may be accepted without question in theology and religion, its existence has resisted empirical confirmation during more than 130 years of increasingly sophisticated psychical research, at least beyond the extent explained by hidden persuaders. So we legitimately expect the author to compare divine mechanisms (implausible) with those of hidden persuaders (highly plausible) – a challenge she evades by declaring that testing is inappropriate (p.13), thus adding nothing to the debate. For example she interprets *Sun in Cancer in fourth house, square Moon in Libra in seventh house* as:

You are someone who is very attached to your home environment; has strong feelings about your family and likes to look after others, and to be cared for in return. Sometimes, however, this conflicts with your instinct for fairness, and your more rational and intellectual awareness of the need for equal partnership in one-to-one relationships (p.182).

This is a classic Barnum statement, so it is no surprise that clients might see it as "shockingly appropriate" (p.86), that their reasons for doing so might differ, and that wrong birth data "work with extraordinary accuracy" (p.95). Yet Radermacher sees each chart factor as:

standing for something beyond itself, and together they reflect the infinite variety of human experience. Since any one symbol carries a huge range of associations, we can begin to appreciate the sheer complexity and breadth of reference within the scope of astrological interpretation. [Thus] a collection of astrological factors in a horoscope has the potential for multiple interpretations. ... it is the particular context in which each chart is situated [ie the client's circumstances] that gives precision to the process of interpretation (pp.182-183).

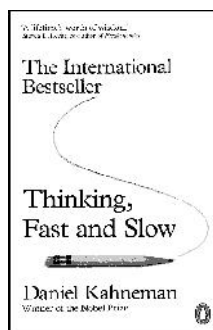
In short, it provides perfect clouds in which to see faces. Indeed, it is irrelevant where the clouds come from – Tarot, astrology, wrong charts, all would work, although (depending on the diviner, client, and situation) some might work better than others. The problem that "continues to be problematic" could be resolved by blind tests in which the relevant variables are manipulated, so we could soon know whether *meet the divine* is genuine or merely a case of *meet hidden persuaders*. By making the process transparent its improvement would then in principle become straightforward. But instead of a testable transparent process Radermacher generates a smokescreen of misdirections as in this typical example:

To consider the phenomenon of synchronicity brings up a number of concepts central to divinatory astrology: space, time, meaning (as apart from content), significance, and the inner "psychic" experience as against the outer "external" event. What is significant for an astrologer may or may not be so for a "lay" reader, thus an event may lose any sense of being meaningful. Synchronicity takes us into areas that appear to go beyond ordinary concepts of space and time, yet – apparently paradoxically – the chart, the method of divinatory judgement for an astrologer, is necessarily connected to a particular time and a particular space (p.98).

As a result her speculations are left open to even more needless speculations including opposing speculations such as those by Pope Sixtus V (arguably in closer communication with the divine than astrologers are):

We condemn and reject all types of divination ... the detestable study ... We decree and declare against astrologers ... and ... others of either sex who practise, advertise, teach or learn the aforesaid damned, idle, fallacious, pernicious arts or sciences of divination: ... or utter forth detestable villainies and sins of this kind (from his Bull *Coeli et Terrae*, as quoted by PG Maxwell-Stuart, *Astrology from Ancient Babylon to the Present* 2012: 274-275).

The result is a clash of arguments that leave us conspicuously none the wiser. But as usual, why have arguments when you can have tests?



7.2.2011.2 Armchair tests using Bayes Theorem

Daniel Kahneman, *Thinking Fast and Slow* 2011. There are many books on Bayes Theorem. Most are not the easiest to understand and apply, and none include astrology. What follows draws on other sources as cited in the text, and adds examples that involve astrology.

Bayes Theorem allows plausible decisions when we have no actual data. The theorem is attributed to the UK mathematician and nonconformist minister Thomas Bayes (1702-1761), who among other things showed how a benevolent God was not inconsistent with human suffering (his argument, which soon went out of fashion, was that God made man as happy as man was capable of). Here's how it works:

Suppose we claim that X in a chart indicates Y in the real world, where X can be anything we like no matter how complicated, and Y can be anything we like from a trait such as generosity to an event such as marriage. Without astrology the best predictor is the base rate. The base rate for literacy is >50%, so our best prediction is *yes this person can read*. The base rate for murder is <50%, so our best prediction is *no this person is not a murderer*. So what happens when we add astrology using chart indication X? According to Bayes Theorem, the probability (0–1) that the subject is actually Y when their birth chart contains X is:

$$\text{probability of subject being Y when their chart contains X} = yb / (yb + n(1-b))$$

where b = base rate, the proportion of Y in the general population.

y (yes) = probability that a person with Y has chart indication X (= a true positive)

n (no) = probability that a person without Y has chart indication X (= a false positive)

n is generally close to the frequency of X expected by chance

In other words, astrology improves our prediction over the base rate b by this much:

$$[yb / (yb + n(1-b))] - b$$

and we can estimate this improvement by observing or guessing the values of b , y , n (if we haven't the foggiest idea, we guess anyway). Here are two examples based on observed values of b , y , n . The value of the quantity in [], the probability that the subject is actually Y when their birth chart contains X, as calculated via Bayes Theorem, is shown in the last column:

Chart indication	Prediction	Observed probability that the chart contains X			Probability that the subject is actually Y when the chart contains X
		Base rate (proportion of Y in population)	when the subject		
			is Y	is not Y	
X	Y	<i>b</i>	<i>y</i>	<i>n</i>	
Mars in kS	Sports champion	.000010	.22	.17	.000013
Various	Extreme EN scores	.070	.504	.496	.071

In the above examples astrology has improved our prediction over the base rate by b -minus-the-last-column, which in each case is positive (0.000003, 0.001) but of no practical value.

The predictions made by astrologers, say of managerial ability or shipping disasters, have base rates of usually much less than 0.1, in which case it can be shown that the chart indication will usefully raise the hit rate above the base rate only if the correlation between chart and reality exceeds about 0.5. If it does not (observed correlations are close to 0.0, see the plots in 8.4 and 8.6, so in practice 0.5 may be unattainable), then using astrology instead of the base rate will make the prediction worse. Here is another way of looking at the same problem:

Suppose we want the birth chart to be right 9 times out of 10. It is not enough to require 90% of people with X to have the predicted Y because this ignores the occurrence of Y in people without X (we cannot assume it is zero). So we apply Bayes Theorem in reverse. That is:

We simply work backwards to see what b (base rates), y (true positives) and n (false positives) have to be to give 9/10 (ie 0.9) in the last column. If we put $b = 0.1$ (putting $b < 0.1$ makes the case worse), and $n = 1-y$ (putting $n > 1-y$ makes the case worse), it turns out that chart indication X cannot deliver 9 hits out of 10 unless at least 98.8% of

people with X in their birth chart have the predicted Y. But a hit rate of at least 98.8% is equivalent to a correlation of at least $(98.8-50)/50 = 0.976$, see 8.2.1, which in practice will be much less attainable than 0.5. Indeed, if the stars incline but never compel, it is not merely unattainable, it is impossible.

Because Bayes Theorem applies regardless of how we think astrology works (rays, energies, spirit guides, faces in clouds) or what it involves (symbols, meaning, intuition, hidden realities), it deserves wide application in astrology. Indeed, just as Bayes Theorem allows us to calculate the improvement that astrology makes to prediction, it allows us to calculate the improvement that evidence makes to belief in astrology. That is, it evaluates:

$$\text{initial belief} + \text{evidence} \rightarrow \text{improved belief}$$

Because we are now dealing in personal beliefs whose level, unlike say the Mars effect, cannot be quantified, we have to guess the relevant probabilities, which are **A**, the probability that astrology is true. and **B**, the probability of the evidence if astrology were actually true. Here is a worked example. If you argue that it all depends on what is meant by astrology, and what is truth anyway, just substitute your own definitions:

How likely is it that astrology is true? If it were no more true than untrue you would guess 50%. But in your experience it is mostly true. So you guess

$$\mathbf{A} = 80\% \text{ (0.8 on scale of 0-1)}$$

Now consider the hundreds of test results in this book showing that astrology is little better than guessing when non-astrological factors are controlled.

How likely would these hundreds of test results be if astrology were true?

You reluctantly accept that we are not suppressing hundreds of thousands of tests all with amazingly positive results, so you accept that the probability has to be small. But you don't want to be dismissive ($B=0\%$) so you guess

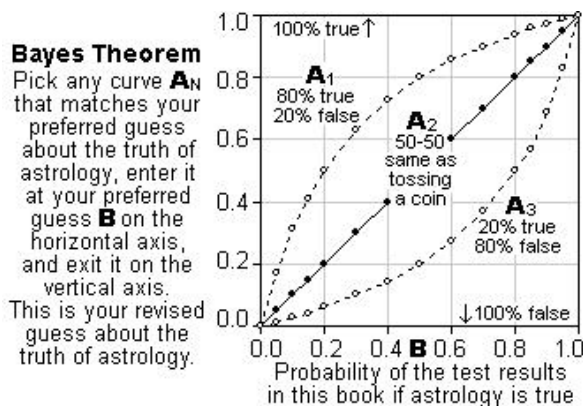
$$\mathbf{B} = 10\% \text{ (0.1 on scale of 0-1)}$$

Now apply Bayes Theorem to revise your initial guess of $A = 0.8$. Revised probability that astrology is true given these hundreds of test results is

$$\frac{AB}{AB + (1-A)(1-B)} = \frac{0.08}{0.08 + 0.2 \times 0.9} = 0.31$$

In other words, given the hundreds of test results in this book, you should revise your previous guess of 0.8 (astrology has an 80% chance of being true) down to 0.31 (astrology has a 31% chance of being true). If you guessed $B = 0.2$ or 0.01 instead of 0.1, you should revise your previous guess to 0.50 or 0.04 (astrology has a 50% or 4% chance of being true).

The above equation is a simplified version of the previous version, where $A=y$, $B=b$, and $n=(1-A)$. Previously n was unrelated to y , but in this case n is necessarily $= 1-y$ (probability that astrology is not true = $1 - \text{probability that astrology is true}$), which simplification allows the apparent complexity of the equation to be summarised in this simple plot, which in turn allows you to assess in a single glance your true response to the test results in this book:



Here the above expression is plotted with **B** on the horizontal axis, the revised guess on the vertical axis, and **A** as various curves.

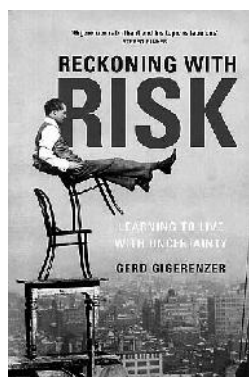
The caption at left shows how it works.

The plots show how $B=0.5$ leaves unchanged every preferred guess **A** about the truth of astrology.

Values of $B < 0.5$ move every preferred guess **A** about the truth of astrology closer to 0%. Values of $B > 0.5$ move every preferred guess **A** closer to 100%.

In effect any belief in the truth of astrology can logically be kept unchanged only by denying the relevance of the test results in this book.

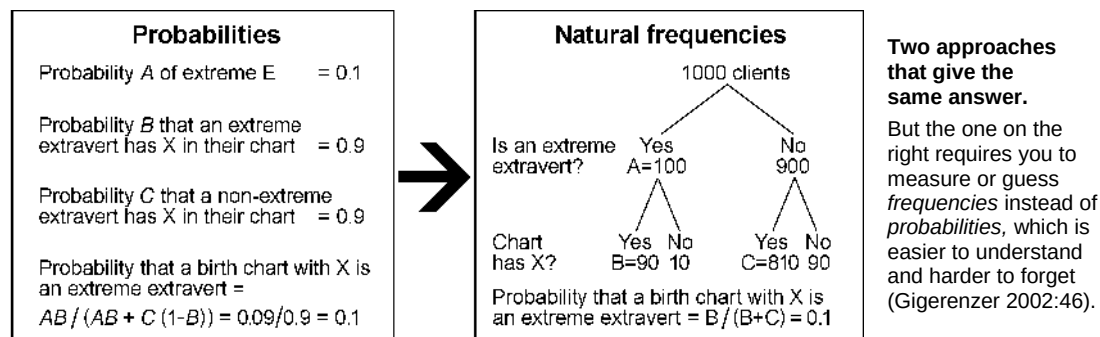
Unfortunately the extra complexity of the previous version cannot be reduced to a similar simple plot. But help is at hand. Former professor of psychology Gerd Gigerenzer (*Reckoning with Risk* 2002) points out that our minds are not used to working with probabilities. Even if students have learned Bayes Theorem in formal classes they tend to forget all of it within a few weeks (p.242). Indeed, even professionals have problems and tend to get the wrong



answer, often by an order of magnitude (p.44). So if you find the equations intimidating you are in good company.

However, Gigerenzer found that when students learn Bayes Theorem based on natural frequencies (which we are used to working with) and ignore probabilities, they find frequencies easier to understand and no longer do they forget everything. Ditto for professionals.

So natural-frequency Bayes Theorem is ready-made for astrologers who judge the success of their astrology by counting rather than probability. To see how it works, suppose you want the birth chart to tell if your client is an extreme extravert. Here is Bayes Theorem via probabilities (left) compared with Bayes Theorem via natural frequencies (right):



In this case a personality test would necessarily beat anything that factor X could offer.

Comment Bayes Theorem is especially useful because it allows us to update assumptions on the basis of new information. Compared with traditional statistical methods such as linear regression, Bayes Theorem is more like how people actually think (Patrick Tucker, *The Naked Future: What happens in a world that anticipates your every move?* 2014:23).

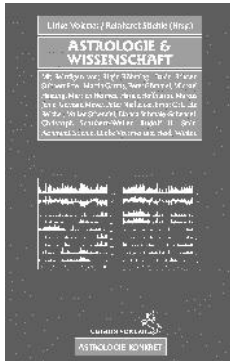
But our assumptions about astrology may soon be outmoded by technology. For example, the most important predictor of health problems (other than unhealthy behaviour such as smoking and drinking) is overreacting to routine but taxing events (Piazza et al, *Annals of Behavioral Medicine* 19 October 2012). Keeping track of reactions used to be beyond most people, but today it is easy. Sensors of bodily reactions plus software that can process everything from Facebook posts and emails to logs of physical activity and mood based on tone and cadence of speech (data is limited only by how much can be collected – the present average since sensors began of 20,000 data points per user is rapidly increasing) gives users an instant readout of their physical and psychological state, thus allowing them (if they wish) to see how, say, missing an appointment or overeating or too little sleep affects them.

Furthermore, if the data from thousands of users is combined, giving vast databases popularly known as *Big Data*, medical software can predict what a particular user is likely to suffer from next. But analysis of Big Data can be applied to almost anything. Thus the long-term prospects of say a romantic relationship is predictable from three things: (1) Similarity, which includes music, religion, education, income, location, and many other things that can be measured by questionnaires. (2) Collaboration and interaction on a daily basis, which includes nonverbal factors, how well someone listens, how often they interrupt, and reactions to particular kinds of humour, all difficult to measure and even more difficult to analyse until now. (3) Reaction to stressful events, all now easy to measure and analyse.

Indeed, measurement (by portable transceivers) of key aspects of human interaction including speech volume, pitch, and acceleration, and use of hand gestures, all things that people do not especially notice, allows the prediction (with 95% accuracy and after just thirty seconds) of

roles and who is going to get their way in an interaction (Pentland, *Honest Signals: how they shape our world* 2010). For example, when a poker player tries to bluff, a small part of the brain is trying to override a large part of the brain, which is hard, so the brain compensates by shutting down other actions like fidgeting. The resulting stiffness correlates with bluffing two thirds of the time (p.125). Indeed, enough big data gathered from millions of people via their digital lives (mobile phones, credit purchases, and Facebook activity are only a start) can give retailers unprecedented insight into market potentials *right now*.

Whatever we may think of astrology, in practical terms it is not able to compete with these rapidly advancing developments, and its ability shows no signs of improving. Which tends to make the application of Bayes Theorem to astrology rather inconsequential. But none of this denies the historical importance of astrology, or its value in areas such as the creative arts and entertainment that are independent of its validity. For more on this see Chapter 10.



7.2.2011.3 Looking at science and astrology

Ulrike Voltmer and Reinhardt Stiehle (eds). *Astrologie und Wissenschaft* 2011 pp 355. An anthology of 19 articles, 17 by German authors, prepared for DAV (the German Association of Astrologers) to present current scientific discussions on astrology. But a general lack of conciseness, the absence of abstracts and index, and a tendency to ignore non-German work limits its usefulness. Some articles (eg historical ones) are of only indirect relevance, while others (by Brixner, Ertel, Voltmer, Mayer and Garms) cover research that is summarised elsewhere in the present work. Of the rest, those worthy of special interest are as follows:

Mike Harding: *Prejudices in the study of astrology.* [from *Correlation* 19(1), 17-33, 2007]

Martien Hermes: *Why it is reasonable for astrologers to ignore scientific studies of astrology.*

Harding argues that science is too different from astrology to properly engage with it, whereas prejudiced scientists assume the opposite. Hermes argues that astrologers "see, hear and experience first-hand that astrology works" (p.42), so all contrary scientific arguments can be safely ignored. Neither author makes the slightest mention of hidden persuaders, so their (extremely wordy) views add nothing to the debate.

Christoph Schubert-Weller: *Casuistry in astrology.* [Casuistry = deception, the opposite of veracity, certainty]

As in any area, casuistry is important because general ideas do not lead to specific outcomes. So an astrologer "can talk only about possibilities" (p.73), which is why casuistry is needed. That the need is generally less in areas other than astrology is not discussed. Nor are the problems associated with seeing faces in clouds, which problems are directly addressed by:

Peter Niehenke: *A dolphin on a motorcycle – the concept of similarity and its significance for astrological research.* In 1986 Niehenke received his PhD with a study published as *Kritische Astrologie* see 7.6.1987.4. During 1981-1991 he was the first chairman of DAV, and in 1983 he conducted the ground-breaking survey in 7.3.1983.1 and 7.3.2007.2.

Niehenke notes that scientific methods repeatedly fail to support astrological claims, so why are astrologers so successful in the consulting room? Scientific methods are dismissed by most astrologers as inadequate for testing astrology, but they are entirely adequate for testing the astrological claims described in textbooks and astrology courses. Furthermore:

We rightly call it a scandal when scientists judge astrology without proper knowledge of the details. We are less critical when astrologers condemn the scientific approach without understanding it, relying more on prejudice and half-knowledge than on sound expertise. But in fact this is also a scandal (p.172).

He notes that when out walking with children it is great fun to see all sorts of bizarre images in clouds. He then tells this true story (here abridged):

One day I said to a little boy "Doesn't that cloud look like a dolphin on a motorcycle?" But he saw only a streamlined camel galloping. His face reminded me of how a recent client had looked as she tried to understand my chart interpretation, which caused me to see it not as a description of facts but as a kind of parable (ie a simplified story). If clients who play the cloud detection game see the same image that I see, they recognise a *similarity* (pp.173-175).

Parables have tremendous power, so it is understandable why clients can be deeply affected by chart interpretations. But how might parables be verified? Is the scientific approach really suitable? The point is, an astrologer cannot force a client who is looking at clouds to see the

same dolphin that the astrologer sees, or the same camel that another astrologer might see. The client only has to be uncritical (which he is paying money for). Niehenke concludes:

We probably need completely new methods if we want to test astrology – methods that have already been developed in the humanities. We have not used them previously because we could not detach ourselves from the prejudice that the horoscope is directly related to real life (p.178).

He does not identify those methods or explain why simplification should frustrate testing. In fact methods that automatically accommodate looking at clouds (can astrologers match charts to clients? can clients pick their own chart reading?) have given negative results, see 8.6.

Markus Jehle: *A study on astrological counselling ethics and consulting competence.* Jehle is a graduate psychologist and astrologer, editor-in-chief of the German astrological journal *Meridian*, and author of CDs and a four-volume astrology textbook. His contribution to the anthology is perhaps the best in terms of being concise and focused.

As part of his 1995 University of Freiburg diploma thesis on astrological and psychological counselling, Jehle sent a total of 1000 questionnaires to astrologers and psychologists that asked their clients about the reasons for their visit (8 reasons, eg I had difficulties with X), how they rated it (10 areas, eg I felt safe). and its effect on them (8 choices, eg I'm happier), all on a scale of 1=very important to 4=not important, plus their age, gender, education, occupation, residence, and attitude to astrology and psychology. It produced 125 responses for evaluation by correlation tests and factor analysis. The most important responses in decreasing order were generally quite similar, and the most frequent outcomes were always positive:

Type	Reason for your visit	Your view of the consultation	You ended up
Astrol	Self-knowledge, crisis, advice.	I was accepted, chose topic, chose limits.	Better, happier about future
Psych	Crisis, self-knowledge, depression.	I chose topic, was accepted, chose limits.	Same as above
Correl*	0.51	0.98	0.91

*Correlation r for Astrol vs Psych using the means for each question as read from the author's bar charts.

Factor analysis identified the four main factors leading to astrological counselling, in decreasing order of importance, as: **(1)** Personal crisis and depression. **(2)** Need to know more about personal future. **(3)** Need to know more about self and partner. **(4)** Curiosity about astrology. Psychological counselling was used significantly more than astrological counselling by clients with personal crises, health problems, and depression; and vice versa for learning more about their personal future. There was no difference in popularity for job or partner problems. Like all subjective assessments these results deserve caution, but they are a useful first step.

Harald Hoffmann: *Statistical investigations of astrological factors influencing couple separations and career choice.* Prof Dr-Ing Harald Hoffman is a retired engineering consultant who has been working in astrology for 51 years.

Instead of testing *hypotheses* the author merely examines *data* to see which chart factors (mostly planets by sign and aspect) are the most frequent for actors, astrologers, couples, football players, musicians, and painters. His results are presented in 2 figures and 11 tables, but despite his generous sample sizes (typically 2000) there is no replication, no mention of the work of others, and no statistical allowance for the number of tests. In effect his approach is like that of Gunter Sachs in 7.1.1998.1, as are his results (ie of almost no practical value). Thus for 1062 astrologers he counts the frequency of aspects (8 major, 8 minor) between 10 planets, Chiron, NN, Asc and MC ($N=14$), of which 11 reach $p = 0.01$ (p.242), whereas the number expected by chance from about $14C2 \times 16 = 1456$ possible pairings minus number of impossible pairs such as SO-120-ME or NE-180-PL is not calculated. Other problems include a colour-coded figure 2 (p.248) which is printed in shades of grey.

Birgit Böhmig: *Research in astromedicine.* The author is a DAV astrologer and non-medical practitioner.

The medical field involves clearly definable facts such as a gastric ulcer or a fractured leg but this advantage has been poorly exploited in astrological research. Lunar effects on surgery have been tested in large-scale studies but were found to be entirely without support – a result that is little-known among astrologers, who are "more likely to blindly adopt old rules instead of questioning them" (p.278). However astrology-plus-homeopathy invites further research – a curious choice by the author since it would seem to offer only an assured futility.

Peter Gömmel: *Why do astrological research anyway?* The author is a psychotherapist with 20+ years of professional experience working with families. He is also an astrologer who is active in both consulting and research.

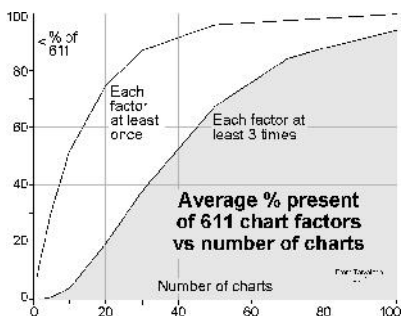
A look at a 2001 test of astrology by Edgar Wunder in which Gömmel participated. It involved 146 pairs of subjects (each pair had same gender, same sun sign, similar ages) and 26 to 40 astrologers. The subjects had to decide which of two chart readings was theirs. The astrologers had to decide which responses to two questionnaires specifically designed for each pair belonged to which chart. [The results were essentially chance, see 8.10 under Wunder]. He notes various problems in the questionnaire responses, for example one subject who smoked 60 cigarettes a day strongly disagreed she was "often compelled to indulge in pleasure", so how can the results mean anything? In 2008 he ran a small-scale replication on himself, with promising but inconclusive results. He then abandoned any further attempts because "clients usually tell me that my way of reading charts is helpful and meaningful" (p.340). In effect he had uncovered the problems of using unvalidated questionnaires and non-extreme scorers.

7.2.2011.4 How many chart factors do clients bring?

Kyösti Tarvainen. One should know 100 persons when studying astrology. *Astrological Journal* 53(3), 59, 2011.

Assume the main chart factors are SO through NN in signs and houses, Asc and MC in signs, and major aspects of average orb 7° between them. If we reasonably exclude very infrequent factors such as Uranus, Neptune and Pluto in signs and aspects between them, and aspects between Asc and MC (rarely considered), there are 611 different factors waiting to be encountered, or 14 times the average number (ie 45) in a single chart.

Astrologers claim that astrology is based on experience. So on average how many clients are needed for them to encounter 611 different chart factors? To find out the author generated random charts over a time span of 40 years and counted the number of different factors:



The results were essentially independent of time spans over 30 years. They were also independent of house system including equal house, and of birthplace except near the polar circles where some signs rise very quickly and some houses are very narrow.

40 charts are enough to contain 90% of chart factors at least once, while 90 charts are enough to contain 90% of chart factors at least three times. 100 charts contain about 94% of all 611 factors at least three times.

So as a rough rule of thumb, an astrologer closely familiar with the charts of N living clients (where N is <100) will have been exposed to N% of all 611 factors at least three times

Tarvainen points out that 100 charts is a theoretical minimum because (1) strong factors can override weaker ones, (2) there are always conflicting factors, (3) there are very many non-astrological factors. So it is impossible to know 100 persons with respect to all their features.

Comment In other words the value of the above study is limited by the implausibility of discovering astrological meanings by comparing charts with case histories, see Chapter 3. The unaided human intellect is not able to disentangle even 12 factors (let alone 611), which is why for two millennia signs have been confidently allocated meanings they do not actually possess. Blame hidden persuaders for that one.

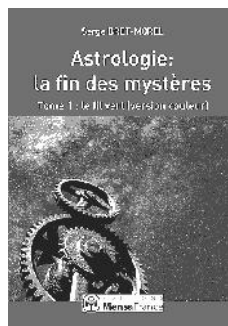
7.2.2016.1 A critical review of astrological history and practice

Serge Bret-Morel. Conclusions from *Astrologie: la fin des mystères?* [Astrology: the end of mysteries?] described by the author in 2.10 as differing from the present work by its focus on astrological history and practice. When the author began his review he had no idea it would take fifteen years to reach his strong conclusions. Its French viewpoint is a refreshing change from the English-American one, but the emerging picture of astrology is depressingly similar.

Astrologers have a very simplistic picture of the sky. The number of astrological bodies is ridiculously low even when hundreds of fictitious points are added. Indeed, the observable universe is more than 2×10^{13} times larger than the astrological one, so the grounds for this

simplistic picture become questionable. Nevertheless astrologers generally over-rationalise their experience because there are too many possible interpretations (what I call "symbolic redundancy") and their confidence in symbols is too strong. They can even leave their clients with problems that do not exist beyond astrological patterns. Thus I never got answers from astrologers when I asked them "What can astrology not interpret or not predict?". Evidently in their minds astrology has no real limit.

This complexity is misjudged by practitioners because they see it only as useful (perhaps even sacred). Rarely do they see how it could also lead to misfires. They accept that mistakes can come from practitioners but never from the system. They can claim this with a straight face because in France there is no real scholarly discourse. Everyone is free to disregard accepted opinions, to practice astrology as they see fit, to become a teacher, to create a school, and of course to ignore awkward experimental results like those showing how the magical accuracy of astrology disappears once the practitioner and client are no longer in personal contact.



Utility vs agreement and truth

Astrologers are over-confident in a tool too complex to test. They cannot isolate the chart factors they use, which is why they differ in their chart interpretations. Not just between individual astrologers but also between schools and between generations. They accept interpretations even when based on wrong charts. They value the useful more than the true. The proverbial expression "there are as many astrologies as astrologers" is literally true. It is as if the *reality of the symbolism* was secondary compared with *what can be extracted from it*.

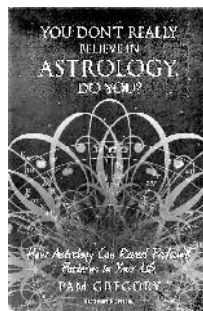
That horary astrology can be used to find lost keys or lost cats suggests it may merely be a tool of inspiration, imagination, and novel points of view, of use to clients without a link to reality. So a competent review must go beyond questions of validity and causality. Which would explain why astrology is no longer considered a science as it used to be over the centuries.

Explanations

Two explanations are possible: Astrology is either a dream without reality, or it is based on ideas beyond the reach of science. Astrologers prefer the latter, but the evidence supports the former – astrologers use non-existent planets and imagined techniques like directions (where Pluto moves at the same speed as the Moon) to produce interpretations that are accepted even when from wrong charts. No wonder astrology works because *its history is not that of a series of discoveries but of a series of applications*.

So are there real correspondences between heaven and Earth or only correspondences created by the astrologer-client relationship that relies on randomness arising from complexity?

Comment The author clearly sees real correspondences as a fiction, and critical astrologers as a contradiction in terms. Such a view is supported by the tests in the present work.



7.2.2017.1 How to get rave reviews in astrology

Pam Gregory. *You Don't Really Believe In Astrology Do You? How Astrology Can Reveal Profound Patterns In Your Life*. 2nd edition 2017. Unusual for an astrology book – and the reason why it appears here – is that on amazon.com by the end of 2017 it had 30 reader reviews, all of them five stars out of five, all seeing it as one of the best books ever written on astrology. Seemingly a huge achievement despite the book having no index. Can we learn from this?

In her introduction Gregory explains how her interest in astrology began in 1979 when she had a chart reading that seemed to reveal things about her "more deeply than I knew it myself" (p.16). She explains that her aim is not to teach astrology but to help interested readers get "a better understanding of a much-misunderstood subject" (p.17). The rest of her book steps through the history of

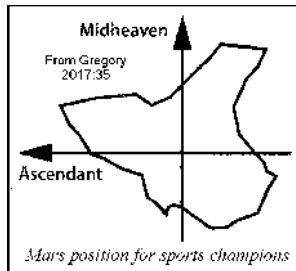
astrology, planetary meanings, how transits to the angles are precisely linked to events, and how astrology relates to every area of life both personally and globally:

It is this perception of a hidden order around which our lives operate that can be so insightful. It encourages us to maximise our potential, and take opportunities when the time is right. It helps us to understand who we and our partners and children really are. It shows you where you're special. It helps you understand where your challenges lie and that the greatest growth can come from this. ... More than anything, it helps us to see the underlying meaning of experiences we are going through so we can make better sense of our circumstances (p.155).

Gregory stresses that planets do not actually cause anything, they merely reveal meaning:

The mechanical soulless universe of the last 300 years has made it easy for us to feel separate. Understanding astrology teaches us that we are not separate. We are each like a wave, which is part of the ocean. We do not live in a blind, random, meaningless universe. It is alive, humming with number, meaning and purpose (p.159).

To confirm the importance of the angles she cites the work of Michel Gauquelin:



He discovered with sportsmen that the planet Mars (in myth, god of war) appeared much more often than average at the Ascendant or the Midheaven in their birthchart. The diagram shows the distribution of Mars in their birthcharts, across the total sample; there is a clear clustering around the Ascendant and Midheaven. ... Mars astrologically has associations of assertion, physicality, athleticism, ... [all] obvious in sports people (p.35).

As further confirmation she points out:

Gauquelin also researched individuals who did not have Mars on these angles and found them characteristically "non-assertive" (pp.36-37).

But as you can see there is no "clear clustering" around the angles as tradition might predict, and which Gregory therefore needs to ignore. And between the angles there is an abundance of sportsmen who by the "non-assertive" argument should not be there. She then adds:

Gauquelin found that if a parent had a particular planet, say Mars, *on an angle*, the child would be more likely to have it there too if the birth was natural. If the other parent also had Mars there, the chances of the child having it were doubled. This worked for the Moon, Venus, and Mars particularly well (pp.38-39, our emphasis).

But again the planets were not on an angle, the heredity effect was weaker in Gauquelin's second experiment, and disappeared in his third and largest experiment with 33,120 parent-child comparisons. In fact Gregory's blind eye for awkward details is evident throughout her book. She cites famous names who supported astrology as if equally famous names who rejected it did not exist (p.29). She claims that having your chart read is "highly persuasive" evidence for astrology as if the wrong chart effect and hidden persuaders did not exist (p.42). The hundredth monkey effect is cited as a "well-known example of interconnectedness" as if its acknowledged fabrication did not exist (p.104). Uranus-Pluto aspects (signifying *change*) are invoked in an exploration of world events as if change was unexpected (pp.132 ff). There is no mention of research journals or websites or non-Gauquelin empirical tests.

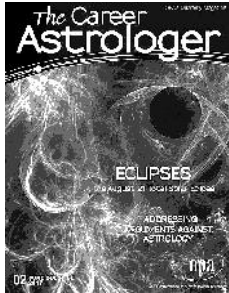
In short, her book reads like a manifesto for flat earthers in which views from space are forbidden, helped by expectation effects and the convenient flexibility of planetary symbolism:

I'm personally experiencing powerful Neptune transits to both my Sun and my Moon right now (transiting Neptune conjunct my Moon, and solar arc Neptune square my Sun), which could be a guaranteed energy wipe-out. But I'm choosing to write this book ... I have not only started to regularly feel energy and see people's auras, I also feel powerful energy during meditation and healing (p.158).

Comment In terms of giving "a better understanding of a much-misunderstood subject", it achieves the exact opposite. Nevertheless it attracted rave reviews. What can we learn from this? The answer is: Nothing we don't know already, namely that in astrology anything critical is unwelcome, see 1.8. Therefore the recipe for success is very simple: (1) Never give the whole story. (2) Cherry-pick everything positive. (3) Ignore or dismiss everything negative. (4) Always put personal experience before controlled tests. (5) Tell true believers only what they want to hear. In short, why be honest when you can be popular and sell books?

7.2.2017.2 Why critics of astrology are wrong

Various authors. Addressing arguments against astrology. *The Career Astrologer* 26(2), 28-40, 2017. *Career Astrologer* is the quarterly magazine of the Organization for Professional Astrology (OPA), one of several professional astrology associations that include AFA, AFAN, ISAR, and NCGR. All offer certification programmes, but OPA's is unique in that it assumes professional astrologers will already have the necessary skills. (To receive OPA certification an astrologer must have practised for at least three years, have presented at an OPA retreat and at least three other conferences, and have participated in three peer group workshops.) *Career Astrologer* is in full colour and is laid out to the highest production standards. It leads in the world of astrology by being freely downloadable from www.OPAAstrology.org/, an excellent easy-to-navigate website that other astrology groups could learn from.



The articles contributed by the various authors are introduced by OPA's president Maurice Fernandez:

It is not surprising that many people are bewildered by the idea that meaning can be derived from faraway planets cycling in front of imagined constellations. [But] more often than not, such social awkwardness results from a lack of proper arguments to address the confusion or prejudice against astrology. This is why we find it important to address this issue and examine some of the common objections toward astrology in order to set the record straight. ... understanding our critics helps us better understand astrology, and our own practice (p.28).

Here in brief are the arguments and in *italics* the response to each:

Astrology was invented by the Greeks. *In fact its foundations were established empirically by data collection and analysis and have remained a stimulus for scientific advances* (Robert Currey pp.29-30).

Tropical signs no longer align with the constellations. *Western astrologers are well aware of this and have always used tropical signs* (Maurice Fernandez, pp.31-32).

There is no underlying physical mechanism. *Astrology works through a principle such as synchronicity, so this objection is based on what critics assume astrologers think rather than on what they actually accept* (Chris Brennan, p.32).

Astrology is a primitive superstition. *This is pure mechanical scientism. In fact astrology's method and scholarship is vast, varied and profound, still in print and taught* (Roy Gillett pp.33-34).

People born at the same time and place do not have the same personality and life course. *They may have the same chart but do not necessarily share the same level of consciousness, so their lives differ* (Maurice Fernandez, pp.35-36).

(Next is a long one.) Many religious people are dismissive of astrology. *They see astrology as fortune-telling, which it is not. Astrology's main problem in the 16th century was a failed prediction of a world-ending flood in February 1524 based on seven planets in Pisces – it was promoted by the printing of thousands of pamphlets but never happened, although hundreds in Germany were trampled to death in a panic when on the predicted day it started to rain. This horrified the German Protestant reformer Martin Luther (1483-1546), since he knew that Astrology was too often wrong. It led to religious leaders joining together in condemning Astrology. But it was defended by another German Protestant reformer Philip Melancthon (1497-1560) who attributed errors not to Astrology but to its practitioners: "if it is accommodated to life skilfully and carefully, many things can be effectively judged". Astrology is also not a religion, it is a cultural language, even though its principle of as above so below is reflected in the Lord's own Prayer – Thy will be done ... on earth, as it is in heaven* (Victoria F Naumann Smoot pp.37-40).

Comment Together the authors generate 10,000 words but the arguments they address are tired and repetitious. Instead of addressing alternative explanations for astrology's success, and the massive but unwelcome achievements of research, they respond with yet more arguments based on speculation rather than evidence, which (as noted in our front matter) leaves us none the wiser. Some arguments such as Currey's are even contrary to the evidence, see Chapter 3. All choose to ignore the real criticism, which is that, despite nearly a century of empirical testing, repeatable hard evidence for astrological claims is lacking.

7.2.2017.3 Are there different kinds of truth?

Julian Baggini. *A Short History of Truth: Consolations for a Post-Truth World* 2017. To the ordinary person and to most scientists the idea of "truth" is uncontroversial. It is what can be shown to be true (apples fall downwards). But to a philosopher it is more complicated, which is why philosophers tend to see scientists as naive, and scientists tend to see philosophers as unrealistic. The idea of different truths is popular among some astrologers who claim that the right truth proves astrology beyond all possible doubt. But a truth like what? Here Baggini explores some options:

British philosopher Julian Baggini is author of numerous philosophy books including academic textbooks, and editor of *The Philosophers' Magazine* which he co-founded in 1997. He presents

a taxonomy of truth in which he identifies ten different kinds of truth:

- **Eternal** (God can ignore the laws of physics). If such truths exist they are not of the empirical kind.
- **Authoritative** (trust me, I'm a doctor). But not everyone who claims to be an expert is one.
- **Hidden** (the CIA caused the twin towers' collapse). May serve a higher goal or merely vested interests.
- **Reasoned** (if hoofbeats then zebras). A relation between concepts that is not necessarily true in everyday life.
- **Empirical** (apples fall downwards). Only as good as our experience. In high winds they may fall sideways.
- **Creative** (it's a lie, but who cares?). Who are we to judge?
- **Relative** (is the glass half-full or half-empty?). Your truth is yours and mine is mine.
- **Powerful** (smoking can kill). It works on believers even if smoking doesn't kill.
- **Moral** (murder is wrong). It may be wrong for the victim but entirely acceptable for the murderer.
- **Holistic** (each is a network of other truths). Truth-seeking is a collective enterprise.

Baggini concludes that more important than any of these is something like *attitude*:

Establishing the truth requires "epistemic virtues" like modesty, scepticism, openness to other perspectives, a spirit of collective enquiry, a readiness to confront power, a desire to create better truths, a willingness to let our morals be guided by the facts (pp.105-106).

All of which have become less evident in today's world.

Comment In effect his conclusion describes the conditions necessary for objectivity, and for escaping the pitfalls of subjectivity. But he misses the importance of *traditional truth*, where beliefs survive because they are traditional or are shaped by their past value, not because they are necessarily true (think of astrology). Steven Weinburg, a Nobel prizewinner in physics, makes these comments about the views of irrationalist philosopher Thomas Kuhn (here our proxy for philosophers in general):

As far as I can tell [Kuhn's] reason for rejecting the idea that science moves towards objective truth is that he and other philosophers have not succeeded in defining truth – and he cannot say what truth would be. This seems a bit like saying that because farmers cannot define cows or the difference between cows and, say, buffaloes, one should doubt the objective existence of cows. I would argue that it's not the job of farmers to define cows; that's the job of zoologists. Likewise, it's not the job of physicists or other scientists to define truth; that's the job of philosophers. If they haven't done that job, too bad for them. But just as the farmer generally knows cows when he sees them, we scientists usually know truth when we see it (*Facing Up: Science and Its Cultural Adversaries* 2001:104).

To put this another way, solutions under previous ideas of truth do not become un-solutions as those ideas advance. Thus scientists still use Newton's law of gravity to calculate the orbits of spacecraft. Debating the nature of truth will not save you if you jump off a cliff.

As for cultural relativists who claim that truth is a social construct with no fixed meaning, Richard Dawkins sees them this way in his 2003 collection of essays *A Devil's Chaplain*:

Show me a cultural relativist at 30,000 feet and I'll show you a hypocrite. ... If you are flying to an international conference of anthropologists or literary critics, the reason you will probably get there – the reason you don't plummet into a ploughed field – is that a lot of Western scientifically trained engineers have got their sums right (p.15).

By sums he means the kinds of obvious truth that he describes in the same essay:

It is simply true that the sun is hotter than the earth, that the desk on which I am writing is made of wood. These are not hypotheses awaiting falsification, not temporary approximations of an ever elusive truth, not local truths that might be denied in another culture. They are just plain true (p.17).

All of which is relevant to the claimed conflict between science and astrology. Indeed, it is not good enough for astrologers to claim that different truths exist in astrology, and that finding the right one would prove astrology beyond all possible doubt. For this is like claiming we could levitate if only we could find the right truth (as opposed to hiring a helicopter). We need to know exactly what these different truths entail and how they are relevant. At which point most astrologers are suddenly silent.

But not Garry Phillipson in 7.7.2017.1, who delivers these requirements in a lengthy PhD thesis (700 references). He points out that there is little scientific basis to conclude astrology as true, but to conclude the opposite from personal experience (ie astrology seems to work and is therefore empirically true) is philosophically defensible. Spot the problem.

One solution might be to classify each truth in terms of its *application* (objective or subjective), its *content* (precise or imprecise), and its *utility* (focused or vague), as in these examples:

Application	Content is		So their respective utilities are	
	Precise	Imprecise	Focused	Vague
External/testable	10 kg weighs 22.0 lb	Mars is reddish	Focused	Vague
Only in the mind	1 elf weighs 12.3 kg	Mars is warlike	Focused	Vague

Thus a reddish Mars is imprecise but testable by all who care to look, whereas a 12.3-kg elf is remarkably precise but as far as we know exists only in a particular mind. This classification helps us to see where a particular truth might fall and its relevance to proving astrology. It necessarily describes any kind of truth including religious truths, as in these examples of a truth that exists only in the mind with opposite kinds of utility:

- It may not work for you but it works for me, so it has to be true (its working is vital, so its utility is focused).
- My beliefs create the world, so you will believe in them too (I will ignore it if you don't, so its utility is vague).

(An astrologer afflicted with an overdose of philosophy might well argue that it all depends on what we mean by *vital* and *ignore*, and that our meanings are not her meanings, so we are talking nonsense. Yes, she is missing the point.)

Another way of classifying truth might be via a hierarchy similar to the world of learning (abridged from T Mann, *The Oxford Guide to Library Research* 1998:xiv), starting at bottom:

- **Data.** The raw input, unorganised, unevaluated, could be useless.
- **Information.** Organised data, could still be useless.
- **Opinion.** Information supported by experience but not yet tested.
- **Knowledge.** Tested opinion, so we can separate truth from falsity.
- **Understanding.** We see the context in which knowledge exists.
- **Wisdom.** We evaluate the above in terms of truth, goodness and beauty.

In effect both classifications reflect the division of astrology into material facts vs personal meaning as first noted in 1.5.2 (the challenge of truth vs meaning). It shows how the truth that can prove astrology beyond all possible doubt depends on who it is for. If it is just for you then you set the rules and live by the consequences (so it is none of our business). But if we want *everyone* to be convinced, then the truth has to be external, focused on astrology (as opposed to say the Mars effect), and to have survived repeated testing. Such a proof for astrology has so far been beyond reach; and based strictly on the evidence to date may never be within reach. In fact the evidence suggests the reverse – that astrology as traditionally presented (ie as opposed to artifacts) is actually an untruth.

Conclusion: the only astrology that has been proven beyond all possible doubt is supported by a truth that exists so far *only in the minds of believers* (as shown by the tests in this book), but to them such truth will seem perfectly valid even though everyone else can legitimately disagree – hence the shouting matches. If you see such only-in-the-mind views as being totally without problems, you should revisit 1.5.3 (the challenge of why astrology works).

Or look at it this way: If we insist that astrology is an A sort of thing rather than a B sort of thing, we are saying that all attempts to get anywhere under B are futile. But such arguments get off the ground only if we insist that everyone must accept either A or B, no choice allowed, which seems indefensible. Why should the existence of apples deny the existence of oranges? If we keep things simple by saying if A then X, but if B then Y, without insisting on anything, it is all over in a sentence. But suppose a leading Vedic astrologer claims to accurately tell a person's sex from the navamsha chart. Do we legitimately dismiss his claim because astrology is not that kind of thing? Or are we forced to change our tune because, when tested, his hit rate turns out to be a genuine 100%? At what point does debating truth save the day?

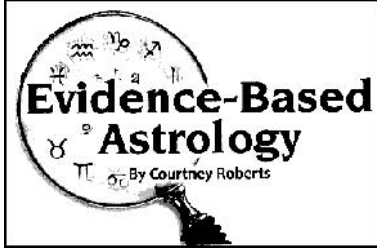
7.2.2018.1 Building the future of astrology?

Courtney Roberts. Building the future of astrology. *The Career Astrologer* 25(3), 49-51, 2016 and 26(1), 15-16, 2017 and Evidence-based astrology, *Dell Horoscope* 105(2), 18-24, 2018. Roberts is director of the (astrological) Canaveral Research Center and co-ordinator of the annual (since 2017) Kepler Research Conference in Florida. Both Roberts and the conferences are "dedicated to building the future of astrology with evidence-based quantitative research results".

Roberts starts off by sounding like a skeptic:

We astrologers are ... in the awkward position of expecting the public to pay perfectly good money for our products / services without offering any proof as to whether they actually work or not (2016:50).

With our natural tendency to see sermons in stones and faces in clouds, if we look for something in charts, we'll probably find it, happily ignoring all the pieces that don't fit. ... We can't even agree on the zodiac. Is it any surprise that we don't get much respect for this? Half the time, we don't even respect each other for it (2017:15).



She quotes research results (for example Gauquelin's 2536 sports champions were highest in Cancer-4th-house-Moon rather than Aries-1st-house-Mars) that were:

clearly not consistent with current astrological theory. That's the beauty of evidence-based results. It's great when they validate what we practice and teach, but it's even better when they don't (2018:20).

So the only way that astrology can be properly understood:

is not by subjective speculation but by rigorous disciplined research, working from the evidence, using the same high standards and advanced information technologies as in every other profession. That's how astrology can thrive in the 21st century, to become more relevant than ever, and more genuinely of service to people ... we astrologers must raise our game. Evidence-based Astrology is the astrology of the future (2018:22,24).

One way to encourage research is via research conferences. But there must be:

No drama! No acting out, no rudeness, anger, disrespect, oppressive or undermining behavior ... The Conference Convenor [ie Roberts] is Cancer rising. I just can't have it (2016:50).

Thus at her recent January 2017 Kepler Conference in Florida:

we prayed for a dignified, respectful tone ... we wanted to really listen to, and understand each other (2017:16).

Comment The research she quotes uses no controls, no replications, ignores the contrary research base (see this book), and relies solely on *p* values rather than effect sizes. The only meaningful tests (those of astrologers) are not mentioned. Her "rigorous disciplined evidence-based" astrology "using the same high standards as in every other profession" is the opposite of what any scholar would accept as rigorous and of high standard. And to pretend that this kind of thing meets what is required (see 7.2.2002.3) invites ridicule. But it doesn't end there:

Her qualifier about the need for a dignified respectful tone will seem odd to UK and European astrologers used to decades of research conferences (all ignored by Roberts as if they had never existed, for details of what she was ignoring see 7.3) where anything less was never an option. Furthermore, when in October 2017 Geoffrey Dean asked Roberts for details of what he had been told about her emailing several hundred departments of psychology to invite their investigation of Gauquelin data with apparently no response, she replied:

The first paragraph of your message is so false and manipulatively so, that I really can't be bothered trying to figure out who is misquoting who. ... Why would I want to engage in dialogue with you? (25 October 2017).

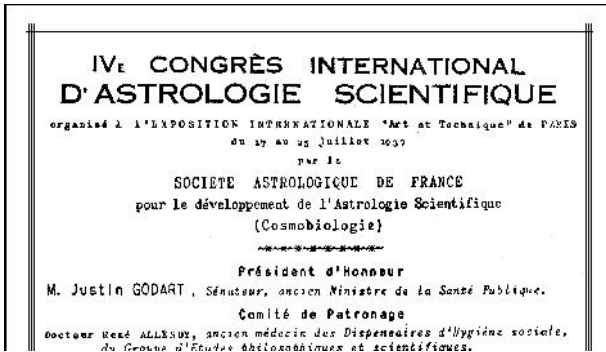
When Dean promptly answered her many further questions – like why he has never published his time twins study (it was published four years earlier) – and explained his original query (an apparent lack of response by university departments of psychology to a direct invitation to investigate well-researched and freely available data could be misinterpreted without more detail), Roberts replied:

This is pseudo-science. You have no credibility. ... You're a liar, Dean. Stop wasting my time (3 November 2017).

So much for Cancer rising, being dignified, and really wanting to listen. Could this be the real problem with astrology – practitioners' blind eyes and deaf ears – as suggested by Chapter 4 (on disagreement)? Given Roberts's declared faith in scientific evidence and high standards it will be interesting to see if Ivan Kelly's 2001 prediction ("No astrological body could embrace science and stay in business") can be overcome. The results in the present work suggest not.

7.3 CONFERENCES & SURVEYS

Includes 210 studies from conference reports and websites, not counted in the final 1000 unless reviewed elsewhere.



7.3.1937.1 Pre-WW2

Today scientific astrology is often seen by astrologers as a recent development. But international research conferences were being held nearly a century ago, as here in Paris in 1937 for France's 4th. Such conferences were snuffed out by WWII, and in English did not reappear until revived in 1970 by ISAR, and in 1979 by the AA after prompting by the publication of *Recent Advances* in 1977.

7.3.1960.1 What do 250 mature astrologers believe?

Marcia Moore, *Astrology Today: A Socio-Psychological Survey* 1960. Based on her degree thesis at Radcliffe College. She later co-authored books on yoga and reincarnation including the 850-page *Astrology: The Divine Science* 1971.

Marcia Moore (1928-1979) sent questionnaires to 900 readers (650 US, 250 foreign) of US astrologer Charles Jayne's advanced astrological journal *In Search* asking for their views on astrology. She received 250 responses. Consistent with readership of an advanced journal it was a mature sample (70% US, 50% female, average age 50 years, average experience 30 years). Over half used intuition and "seem quite convinced that the system works" (p.131).

In round figures the respondents claimed that:

- The value of astrology is mainly for entertainment, fun and relaxation 0.5% [not a misprint].
- Astrology encourages understanding 40%, happiness 20%, tolerance 20%, and inner peace 20%.
- Free will can modify planetary influences Yes 97%, No 3%.
- The main need is for more research 70% [this was before results were known], more competence 30%.

7.3.1967.1 Survey of 295 German astrologers by questionnaire

Bender & Timm, *Zeitschrift für Parapsychologie und Grenzgebiete der Psychologie* 10, 115-130, 1967. In 1952 and 1953 responses were obtained from 295 full- and part-time astrologers to a 213-item questionnaire about their use of astrology, and their attitude to proposed large-scale tests by Hans Bender's Institute for Border Areas in Psychology.

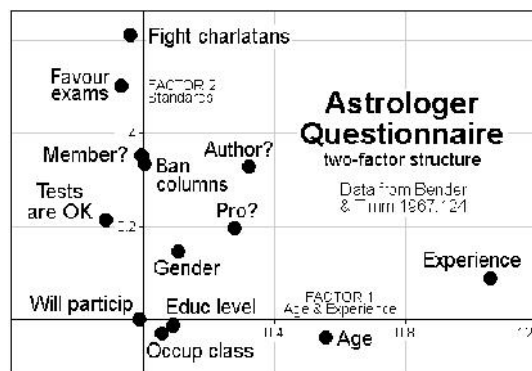
The responses indicated that 81% were male, most came from respectable professions, and 40% had academic training. Average age was 48 years, with 10% under 30 and 15% over 60. Average experience was 18 years. Of the 295 astrologers who responded, 49% agreed that sun-sign columns should be banned, 77% were in favour of the proposed tests, 82% wanted to fight charlatans, 41% were members of an astrological organisation, and 40% had published their own studies in astrology. Most were willing to be part of a test, which shows that "they stand by their methods and are convinced of their accuracy" (p.121). The authors included a correlation analysis of the responses. Boldface = individually significant at the $p = 0.01$ level:

N=213	% is % yes	ID	01	02	03	04	05	06	07	08	09	10	11	12	13
Gender 81% male		01	--	-04	02	16	00	03	06	13	-06	-03	19	-06	-09
Age average 48yr ±12		02	-04	--	02	63	18	-01	-01	-05	-03	-10	10	00	08
Occup class 55% high		03	02	02	--	00	06	-08	-04	00	03	29	08	-07	06
Experience 18yr ±10		04	16	63	00	--	26	-01	-01	03	08	11	34	-10	-03
Pro? 13%full 31%part		05	00	18	06	26	--	16	06	03	01	11	28	08	12
Member of assoc? 41%		06	03	-01	-09	-01	16	--	11	20	01	00	21	21	01
Favour exams 77%		07	06	-01	-04	-01	06	11	--	42	18	02	05	16	02
Fight charlatans 82%		08	13	-05	00	03	03	20	42	--	30	-05	17	04	-07
Ban columns 49%		09	-06	-03	04	08	01	01	18	30	--	-01	10	05	-04
Educ level 13/69/10		10	-03	-10	29	11	11	00	02	-05	-01	--	10	-11	-11
Writes articles 40%		11	19	10	08	34	28	21	05	17	10	10	--	-05	-05
Proposed test OK 72%		12	-06	00	-07	-10	08	21	16	04	05	-11	-05	--	25
Will participate 93%		13	-09	08	06	-03	12	01	02	-07	-04	-11	-05	25	--

The correlations are generally modest, the three largest being $r = 0.63$ between age and experience, 0.42 between favour exams and fight charlatans, and 0.34 between experience and writes articles. The authors conclude as follows:

These responses show the astrologers to be surprisingly conventional. They are generally well educated. Only half practice astrology full- or part-time. They are hostile to pop astrology. Chart interpretation, which is actually quite complicated, is perceived by them as a scientific process that in their view should involve only "certified" astrologers, which suggests a certain class consciousness. They give the impression of a perfectly normal "profession", which is structured like many others, but this impression is only partly right. Why? Because many astrologers are strongly ideological in their thinking, and occasionally have a certain fanaticism, which is made worse by the scepticism of official science (abridged from pp.127-128).

Comment Correlation analysis of such surveys are rarely made. As expected for such diverse questions, factor analysis of the above matrix reveals no dominant structure, but with possibly four main factors as shown below together with the percentage of variance explained:



40% Experience and age
27% Standards (promote exams, fight charlatans and newspaper columns)
17% Education and occupational class
16% Altruism (astrology comes first, not self)

If the matrix is forced to give just two factors (ie the two strongest factors from the four-factor model) placed at right angles, the result is Age and Experience on the horizontal axis, and Standards on the vertical axis. The responses cluster as shown, and the closer to the centre the less their involvement in the factor. Thus as expected gender, education, occupational class, and intention to participate in tests, are generally unrelated to Experience and Standards, and are only indirectly related to testing.

7.3.1978.1 Response by 448 US astrologers to a questionnaire

AFA Questionnaire Summation Report, *AFA Bulletin* 40(8), 6-16, 1978. The AFA (American Federation of Astrologers) was founded in 1938 and is the oldest and largest astrological organisation in the USA. In 1977 and 1978 it circulated a 62-item questionnaire to its several thousand members as a result of complaints at its August 1976 convention in Las Vegas about secrecy, failure to listen to members, and failure to initiate research. It received only 448 responses, so is not representative. It does not cover age or gender, but typically 80% of astrologers in the US are female.

The average respondent had been an AFA member for 7.4 years and belonged to one other astrological organisation. Nearly half had never been to an AFA convention, the rest had on average attended 2.5 conventions. 83% read birth charts for clients (82% in the home, 26% in the office, 16% at meetings) average 4.5 charts per week, average fee \$43.70 [then about one fifth of the average US weekly income]. Astrology was the main income for 25% (mean yearly income from astrology \$17,000, maximum \$50,000+), a hobby for 62% (mean yearly income from astrology \$6000, median yearly US household income was then about \$13,600). Only 19% advertised, mostly in newspapers or yellow pages; the rest relied on word of mouth. Half the respondents taught classes averaging 3 a week for 30 weeks a year, average 56 students a year. Students who drop out generally lack commitment or ability. 50% gave talks for other organisations. The astrology was tropical 99%, sidereal 1%. It was commonly (and correctly) held that computers able to calculate charts will cost \$300-\$500 in the next five years.



7.3.1979.1 Views of Horoscope readers

Reported by Richard Nolle, *Dell Horoscope* 45(6), June 1979.

A poll of the magazine's thousands of US readers produced only 305 responses, too few to be representative but better than nothing. They saw astrology as:

A science 64%, a psychic phenomenon 3%, both 10%, a superstition 0.3%, none of the above 23%, total 100%.

Can astrology predict the future? 69% yes, 8% no, 23% undecided.

7.3.1980.1 Critical Utrecht forum on astrology

Wout Heukelom and A.A.Boeree, *Tijdschrift Astrologie* 4(1), 20-32, 1980.

A forum on astrology was held in Utrecht on 9 February 1980 and attracted 105 people. It was opened by engineering student Hein van Elteren, one of the organisers, who stressed that the forum was critical but neutral. After talks by astronomers Dr AD Fokker and Dr Wim de Graaf, and astrologers Herman de Vos, Rudolf Smit, Leo Pannekoek, and AA Boeree, there was a general discussion of topics such as research results, astrology books, and the relevance of science and religion. Five questions had been handed out and 75 responses to each were received, often with vast comment – a generally excellent result. Responses (as % of N=75) were:

- *Do you have knowledge of astrology?* 91 yes, 5 no, 4 almost no.
- *Has this forum been fruitful for you?* 88 yes, 8 no, 4 yes & no.
- *Any criticisms?* 88 yes, 12 no. Mostly too little time, too few critics, not enough depth or humour.
- *The forum was mostly astronomy versus astrology. Should other areas of science be involved?* 97 yes, 3 no. Suggestions for other areas included psychology, medicine, biology, and psychiatry.
- *Any other comments?* 57 yes, 43 no. Mostly that forums bringing together supporters and critics are much needed and should be held more often. One unanswered question was how best to have fruitful research and discussions.

Comment This response led to more critical meetings between astrologers and skeptics, a result generally unique to the Netherlands. Examples are at 7.3.1991.1 and 7.3.1991.2.

7.3.1981.1 2nd AA International Research Conference

Anon, *Correlation* 1(2), 2–3, 1981. Of all the Astrological Association International Research Conferences, all held in London, this was the best attended. It also attracted the most academic interest from outside astrology. This and the four subsequent AA Research Conferences 1986-1989 reported in this chapter represent perhaps their golden years. They cover a total of over 100 researches-in-progress, only some of which made it into print. These reports bring you closer to the controversies of research than any formal articles could do. The report that follows is unabridged.

The second astrological research conference, organised by the Astrological Association and entitled "Astrology confronts Science", was held on November 28-29, 1981, at the Institute of Psychiatry, London. It brought together speakers from England, France, Germany, the USA and Australia, and over 100 delegates to look at the developments in astrological research which have occurred since the first such conference in May 1979. The high standards set by the first conference were maintained and seem destined to establish this as the world's most important series of research conferences on astrology.

Professor Hans Eysenck, from London University, began the conference with a survey of methodology in astrological research. The main deficiencies in the research to date are lack of replication, lack of controls, incorrect use of statistics, and the failure to pursue alternate explanations [still true in 2020]. For example, the Vernon Clark tests do not reliably tap the accuracy of astrological judgements as is commonly supposed because the small sample size (usually 10) is subject to large sampling artifacts. There is a strong need for theories of astrological causation which can be tested. Professor Eysenck concluded that the only major work to date which is methodologically acceptable is that of the Gauquelins.

Charles Harvey gave a brief survey of the basic concepts of astrology for the benefit of those new to astrology. There are four basic explanatory models, namely physical causation, triggering, synchronicity, and symbolism. The astrologer perceives underlying principles, mirrored in the planets, as basic functions of life and the psyche. Planetary cycles of relationship include both diurnal and zodiacal frameworks.

Françoise Gauquelin discussed the character trait method. For ten years the Gauquelins have been correlating planetary positions with personality traits taken from the biographies of the subjects concerned, all of whom were eminent people. The main considerations were: (1) all traits must be used without arbitrary selection, and, (2) the person recording the traits must be unaware of the birth chart. She reported that recent work with 500 US subjects has replicated their earlier European results.

After lunch Michel Gauquelin presented the results of research on non-eminent people (which are presented in his article in this issue) [of *Correlation*, the overall result for three tests of N=300+846+561 subjects was totally without significance, mean effect size $r = 0.017$, $p > 0.3$]. He also discussed their replication with US subjects which is published in *Personality and Individual Differences* 2, 346-350, 1981. [The result was no better]

John Addey gave a summary of his most recent harmonic analyses of the Gauquelin data, as described in his recent article (*Correlation* 1(1), 26-35, 1981). He pointed out that he differs from the Gauquelins in using the single-count (as opposed to multiple-count) method, and adopts a restricted vocabulary of 201 of the most often used trait words.

Professor Alan Smithers, from Manchester University, summarised his Sun sign findings with Australian women

(*Correlation* 1(1), 15-25, 1981). He then analysed the birth data of all 5644 people in prison in England and Wales with respect to nine categories of crime. Violence against the person showed a clear seasonal effect (high in Virgo, low in Capricorn), similar to that from a re-analysis of Gauquelin's 623 French murderers, and different from that of the general population. Sex offences showed more complex patterns. The other seven categories (including burglary, receiving, drunkenness, and prostitution) showed no significant effects.

Thomas Shanks summarised three studies made by him at Astro Computing Services in San Diego. **(1)** A study of newborn infants showed that those born with the Moon in Gauquelin "plus zones" were significantly ($p = .05$ to $.01$) more alert, less irritable, and more sociable. **(2)** The planets Sun, Mercury and Venus can occur in six different orders in a birth chart (SO-ME-VE, SO-VE-ME, etc.) An analysis of Gauquelin's data showed that the most frequent trait words differed for each group. The results have yet to be replicated, hence their significance is unknown. **(3)** Gauquelin's data were re-analysed in different frameworks such as equal house and mundoscope. In general, the results were much the same as, but less significant than, those based on Gauquelin sectors.

After dinner Dr Geoffrey Dean discussed whether chart interpretations are true and presented some recent Australian findings. There are many factors operating during a counselling session (eg Barnum effects, halo, placebo and cold reading effects) which could explain why astrology seems to work. This does not disprove astrology but it does mean that astrologers have to control many variables before scientists may believe that astrological counselling is effective and useful. Petula Clark's chart was shown to match her biographical details exactly; the chart was then revealed to be that of the murderer Charles Manson. A study in which 11 Australian subjects systematically rated the accuracy of the 10 closest aspects in their charts, each aspect being described by 2 or 3 keywords or phrases, found an average acceptance level of 96%; however the acceptance averaged 97% for a control group of 11 subjects whose aspects had been changed to be as opposite as possible to the genuine aspects. Several charts of extreme personalities as determined by the EPI were presented; judgements from the audience were conflicting and overall were at chance level.

On Sunday Patrick Curry examined the Gauquelin/CSICOP controversy. The CSICOP emerged with negligible credibility, being dedicated to seeking not the truth but the promotion of a predetermined view. A comprehensive analysis by Patrick would appear in the US journal *Zetetic Scholar* (Vol 9, February 1982).

Dr Theodor Landscheidt discussed his recent research on solar flare cycles. Flares have been alleged to correlate with diverse terrestrial phenomena, including atmospheric conductivity, rainfall, tree potentials, traffic accidents, human birth rate and TB mortality. Flares seem to be related to the movement relative to the Sun of the centre of mass of the solar system. When the centre of mass moves away from the Sun the flares are twice as frequent than for the opposite motion. The accuracy of long-range forecasts of solar flares based on this motion for 1979 and 1980 was significant at the .00002 level. The period 1990-2030 is likely to produce another Maunder-like minimum. [See also 7.3.1993.1]

Dr Frank McGillion's lecture on the possible role of the pineal gland in astrological causation was given in his absence by Sue Greenwood. The pineal gland has been extensively studied in the past 20 years. It produces melatonin and other hormones. The rate of melatonin production is inhibited by light and stimulated by darkness. Other factors, such as earth-strength magnetic fields, also affect pineal functioning. Because melatonin seems to set the levels at which various organs will function later in life, the birth chart may reflect the influences on the pineal (and hence on the subsequent life) which prevail at birth.

Dr Roger Dolby, from Kent University, discussed the sociology of knowledge and its relation to astrology. Methodologies of knowledge vary but usually the ultimate aim is to change people's opinions, often via an elite group with special expertise. Applied scientists usually defer to pure scientists, but in astrology the field is dominated by "applied scientists" who tend to determine what is accepted in astrological practice through their individual experience.

The conference ended with a panel of the above speakers answering questions from the floor, many of them from the media. In summary, this was a stimulating and successful conference with audience participation lively, and discussion often intense. Many new areas for research were apparent, which may require making such a gathering an annual event. Organisers Beverley Steffert and Charles Harvey deserve thanks for another memorable conference.

7.3.1983.1 Seven basic statements about astrology

In 1983 Peter Niehenke, then president of the Union of German Astrologers, managed to get the various German astrology groups to agree on seven basic statements about astrology. They were thus a first step towards consensus and were later published in his book *Kritische Astrologie* 1987:239-241 based on his PhD thesis, see 7.6.1987.4.

In 2004 the German journal *Zeitschrift für Anomalistik* invited astrologers and researchers to update these basic statements. For the results and the original statements see 7.3.2007.2.

7.3.1984.1 Is astrology in a crisis? A German debate

Françoise Gauquelin, *APP* 2(3), 3-4, 1984. Unlike debates focused on research *results*, this one focuses on *approaches* to research and related matters such as computers, hidden persuaders, the internet, and need for science.

Astrology is now a topic for dissertations and theses at universities leading to new arguments for and against astrology. How is this trend perceived by astrologers? A debate organised by

Dr Peter Niehenke at the end of the DAV Conference in Bensheim (13-15 April 1984) asked the question: **Is astrology in a crisis?** The response was interesting. Scientific astrologers tended to say yes, the rest tended to say no. Here is my summary of main answers:

Peter Niehenke: Is a judgment possible for us? If the result comes out negatively, will we admit it to be true and give up astrology? *Herr Schulze:* Astrology being a body of knowledge preserved by Babylonian priests on clay tablets, and most of the tablets having not yet been deciphered, how can this body of knowledge be already judged and condemned by modern science? *Thomas Koberl:* There is never one definitive judgment, but a long series of tests, with the possibility of a slow adaptation of our practice to their verdict. *Françoise Gauquelin:* I don't see that as a crisis, only as the normal course of events. When old assertions begin to be verified instead of remaining intangible, some will need modifications. It may be felt as painful, but it is unavoidable. *Frau von Kraft:* Astrology cannot be in a crisis, because it is not a scientific theory that can be checked. It is just a method for helping others. *Gudula Beyse:* Astrology is a science of the mind, so it cannot be reduced to a physical science. It is based on analogies, not rational methods. *Heidrun Kunzmann:* The way in which scientific researchers study astrology is excessively simplistic. This is why it cannot bear results. *Thomas Koberl:* This also applies when astrologers, each using a different method, nevertheless achieve successes in their practice. *Karlheinz Grzybiński:* Of course we usually start by observing individual cases. But with many individual cases, a general knowledge should ultimately emerge. *Adele Conrad:* The crisis comes from having so many different methods, so many theories. It is important to test whatever is really working. *Manfred Groeger:* It is important to make things quantifiable, for there is a need for proof. *Peter Niehenke:* Yes, but do we have enough training to make useful comparisons? I think we just want to rest on our cosmic bed. But that is not good enough. We must accept a certain crisis in our too comfortable beliefs.

7.3.1984.2 Astrology groups agree on a definition of astrology

Anon, *Kosmos* 13(3), 28-32, 1984. The location is not given but was in the USA. The groups are not identified.

A discussion among nearly 20 leading representatives of several US astrology groups led to this definition of astrology: "*Astrology is the philosophy that postulates a relationship between relevant celestial phenomena and/or processes and certain terrestrial affairs*". It leaves open the cause of the relationship, and leaves undefined the celestial phenomena and terrestrial affairs to allow its adoption by schools of astrology regardless of the techniques they use.

Comment *ie as above so below.* Dictionaries, encyclopedias and astrology textbooks have defined astrology variously as a science, a supposed science, an art, an art/science, a divination art, a craft, a language, a philosophy, and as a system for self-understanding. But the majority (roughly half) define astrology as the study of relationships between the stars and human affairs. In non-astrology books the reference is usually to *supposed* relationships.

7.3.1986.1 5th AA International Research Conference

Anon, *Correlation* 6(2), 2-6, 1986. The report that follows is unabridged.

The fifth in this series of conferences took place at a new location, the Royal Free Hospital in north-west London on 22-23 November 1986. It attracted an audience of 60 to hear 16 speakers (including 3 professors and 6 PhDs) deliver lectures ranging from the stunningly clear to the stunningly incomprehensible.

The first day began with Dr Theodor Landscheidt (Germany) presenting his further work on solar cycles. Heliocentric 4th, 5th, 8th and 12th harmonic aspects between Jupiter and the centre of mass of the solar system correlate so strongly with periods of solar flare activity that successful prediction is possible. Of 29 major flares in 1979-81, 27 occurred in the predicted periods. Of 46 in 1983-85, the corresponding number was 41. Exactly how the predictions were made was not stated, even in response to direct questions. The effect seems to involve an exchange of angular momentum between Jupiter and the Sun, because when Jupiter is conjunct the centre of mass the Sun's rotation is slowed. Links between flare activity and terrestrial phenomena, such as weather and stock prices, were described. For the latter the indications are for a steady fall from 1986 onwards with a moderate rise beginning in 1991.

Dr Percy Seymour (Plymouth Polytechnic) outlined a possible causal mechanism for planetary effects. The argument that physical forces cannot explain planetary effects is based on static considerations; for example, "it cannot be gravity because the gravitational pull of the midwife exceeds that of any planet". This ignores the huge amplification possible through resonance; for example, resonance between the Moon and the Bay of Fundy causes the tide to exceed 50 feet, whereas without resonance it would be only 1-2 feet. Resonance is therefore the key to any causal explanation of planetary effects. It also accommodates harmonic effects, ie aspects, which static considerations do not. A possible causal mechanism is: planets resonate with the Sun's magnetic canals (caused by differential rotation), which affects solar activity, which affects the terrestrial magnetic field, which affects the propagation of human nerve impulses. Thus planetary-induced geomagnetic fluctuations could beat with neural-loop processes to affect the birth trigger. Persons with an enhanced sensitivity to planetary effects (eg eminent persons) would then be those with a low "internal resistance". Each link in the chain has some experimental support and can be calculated theoretically.

Alternatively, if bays and estuaries exist in the magnetosphere, they could resonate with planets directly. However, the link with birth time rather than trigger time is unclear. Further details will appear in a future article in *Correlation* and in a book due out at the end of 1987. [See 7.3.1987.1 and 7.3.1988.2]

Maurice Cotterell (Cornwall) outlined his theory that the Sun's polar magnetic field (rotation period 37 days) interacts with the sector structure of the equatorial solar wind (rotation period 26 days) to produce monthly changes in the geomagnetic field. This causes mutations (in DNA at conception) linked to the signs, which explains the Mayo-Eysenck zodiac zig-zag effect and other things like elements and Chinese astrology's 12-year types. However, since the zig-zag effect is possibly due to self-attribution, the theory may be redundant.

After lunch Professor Suitbert Ertel (Georg-August University, Göttingen, West Germany) presented his work on diurnal effects using citation frequency as an index of eminence. For 4331 eminent sports champions (34% previously unpublished) the Mars effect increased consistently as eminence increased across 5 categories from lowest to highest. The results were much the same for both published and unpublished data. For 813 eminent French writers and 1325 eminent painters, an increase in eminence across 4 categories was generally related to an increasing deficit in plus zones of Saturn and Mars, a decreasing surplus of Venus and (for writers) the Moon, and no consistent effect for Jupiter and (for painters) the Moon. The conclusions were (1) eminence differences reveal trends that rule out data manipulation because this would have destroyed the subtle effects accessible only via citation frequency, and (2) the eminence rule requires modification because for some groups the planetary effect decreases with increasing eminence. The last point means that the planetary effect will peak somewhere between lowest eminence and ordinary people, which raises difficulties for a rational explanation (already difficult enough just for eminence), including Seymour's causal mechanism. [For later details see 6th AA International Research Conference in 7.3.1987.1]

Professor Peter Roberts (City University London UK), a long-time associate of the late John Addey, described his harmonic analysis of the diurnal planetary distributions of Gauquelin's eminent professionals. For the 3rd and 4th harmonics the wave peaks for all groups occur on or just past the angles, respectively, in tight clusters each within 5-10 degrees, which for JU and SA is considerably less than the light travel time. Much the same tight clustering is shown by the other harmonics up to the 5th, above which the diurnal sectors are too coarse for the results to mean anything. This indicates that (1) what matters is not real position but apparent position, and (2) diurnal harmonics exist in their own right and are not just a way of describing the data. Point (2) was supported by reference to Addey's work, which suggests that different harmonics have different meanings even though the same planet is involved. Such findings seem to be well beyond what is currently explainable. Planets other than the five Gauquelin planets were not investigated, so the effect of, say, Mercury harmonics in the charts of writers remains unknown.

Michel Gauquelin (Paris) showed what happens when ordinary people and independent judges choose from a list of 100 traits the 10 most applicable and the 10 least applicable. Results were given for about 50 subjects; unfortunately a much larger sample sent to San Diego for processing had gone astray. Subjects choosing traits typical of a Gauquelin planet had that planet in plus zones about 10% more frequently than expected. If the traits were atypical the frequency was about 10% less than expected. Both results suggest a planetary effect for ordinary people. The difference tended to be larger for independent ratings than for self-ratings. The traits were not balanced for social desirability (which could therefore have biased the ratings), the traits were not independent, and the ratings could possibly have been biased by prior knowledge of the subjects' planetary positions. Hence the results, although promising, require replication with an improved methodology.

Dave Stevens (London) briefly discussed current psychological models of personality. There is no single personality theory accepted by all psychologists. Situational effects cause problems for trait theories but are easily accommodated by astrology. Thus planets = basic principles, aspects = interaction, signs = how they act (disposition), and houses = where they act (situation). No experimental results were presented.

The second day began with Dr Geoffrey Dean (Western Australia) bringing research to the consulting room with his meta-analysis of Vernon Clark tests, described in this issue [of *Correlation*]. Dramatic visuals provided analogy and metaphor among the graphs and tables. Vernon Clark tests allow astrologers to apply their centuries of collective wisdom, plus their individual experience, sensitivity, holistic perception, intuitive skill, and "all the other ingredients deemed to be so essential to the consulting process, but which were so conspicuously ignored in yesterday's programme". However, the conclusion from 25 years of tests was that, when ranked in terms of validity and reliability against alternative techniques, astrology comes bottom. Question time was the most vigorous of the entire conference, with audience reaction ranging from "extraversion is all nonsense anyway", and "if everything is so negative, why do you carry on", to "science can prove that bees can't fly, therefore ...". However, there seemed to be general agreement that astrologers need to modify either their techniques or their tests. [See 8.6 for meta-analyses]

Professor Alan Smithers (University of Manchester) presented further results from his *Guardian* study of occupation vs Sun-sign for 2.3 million people. Do the Sun-sign distributions merely reflect chance fluctuations (as the critics suggest) or do they replicate? Replicate distributions were presented for two occupational groups, namely secretaries and clerks/cashiers, and each pair showed considerable similarity. The claim was made that the same was true of the 20 groups with the most significant results, but no supporting evidence was presented. During question time it was pointed out that the distributions had been corrected for the general population base rate but not for social class, which has a strong effect. So might their similarity merely reflect the effect of social class, leaving nothing to be

explained by astrology? The reply was that, when corrected for social class, they probably would still show an effect, but no supporting evidence was presented. Full details will appear in a future issue of *Correlation*.

Dr Michael Startup (London) described an analysis of the academic success of all university graduates in England and Wales during 1972-82, a total of 295,700. Degree grade showed a wave of amplitude 2% with a maximum for subjects born in July and a minimum for subjects born in September. This result is entirely explained by non-astrological factors, hence ignorance of these factors could lead to wrong conclusions. Full details will appear in *PAID*.

Dylan Warren-Davies (Chichester), a practising herbalist, showed how traditional herbal remedies reveal interesting links with astrological symbolism. For example, the willow (ruled by the Moon) was prescribed for reducing fever, an ideal role for the cold and moist Moon. It also works – willow contains an anti-pyretic related to aspirin. So a look at traditional herbal ideas may yield useful insights for research.

Nick Kollerstrom (Guildford) analysed the frequency of quintiles and septiles (said by John Addey to be relevant to discovery) in the charts of 14 eminent discoverers such as Galileo, and in the charts of 17 eminent discoveries (the Eureka moment), such as the moons of Jupiter. Using an orb of 12/5 and 12/7 degrees respectively, the 14 discoverers had a total of 89 quintiles and septiles vs 64 expected, or up 39%. The 17 discoveries had 104 vs 78, up 33%. The other harmonics from I through 12 did not stand out, thus supporting Addey's claims. For quintiles the effect was spread over an orb of 1 to 5 degrees with no distinct maximum. For septiles (and for quintiles-plus-septiles) the effect showed a maximum at orb 10/7 degrees, decreasing to chance level above 1.5 degrees. In order of decreasing frequency the planets most involved were MO, UR, PL, SA for discoverers and UR, PL, MO, SA for discoveries.

Then followed brief 10-minute summaries of recent research. David Hamblin (Bath) analysed the chart of Adolf Hitler using harmonic aspects with and without correction for latitude and parallax. Correction strengthened some highly relevant aspects but weakened others in roughly equal number, suggesting that correction offers no advantage. Mike O'Neill (London) investigated the hypothesis that more married people than expected would have a conjunction between NN in one chart and a planet (SO-SA) in the other, and less than expected for SN, orb 5°. For 1483 eminent couples listed in *Who's Who*, the first hypothesis was not confirmed (7% deficit, not significant) but the second was (14% deficit, maximum at orb 1–2°, significance $p < 0.05$). MO and JU showed the biggest variation from expectancy. When the sample was subdivided into 9 groups the NN deficit appeared in all but one, and the SN deficit appeared in all. However, the deficits failed to replicate in follow-up studies using 2000 and 1000 ordinary couples. For details, see *APP* 4(3), 24-32, 1986. Beverley Steffert (London) looked at 300 ordinary couples for links between VE element and Lee's lovestyles. The results tended to be in the wrong direction and none of the hypotheses were confirmed:

Hypothesis

VE in fire = *eros* (physical, romantic)
 VE in earth = *pragma* (practical, sensible)
 VE in air = *ludus* (a casanova game)
 VE in water = *mania* (jealous, obsessive)

Result

Nothing significant
 Earth = more *eros*, less *mania*
 Nothing significant
 Water = less *mania*

Finally, Françoise Schneider-Gauquelin (France) summarised recent research that had appeared in *APP*. Many negative results had been submitted and are being published. Owing to the presence in the audience of Michel Gauquelin, the scheduled report on her own research was withdrawn. A notice outlining the aims and procedures of Professor Eysenck's *Committee for Objective Research in Astrology* will appear in the next issue of *APP*. Schneider-Gauquelin is the secretary of CORA.

The conference ended with a brief forum on topics for future research. Suggestions included: harmonics (ie John Addey's work), horary astrology, problems rather than traits in Vernon Clark studies, something non-materialistic like a group of spiritual leaders, identifying top astrologers to learn their secrets, and discussion of the kinds of research needed. Charles Harvey suggested asking what astrologers could do for research, not what researchers could do for astrology. Roger Elliott advised that he was organising a journal exchange that would bring a top journal to your door every few days before having to be passed on. Cost might be in the range £10-£25 per year.

Altogether the conference provided a packed, continually overrunning programme, much stimulating discussion that all too often had to be cut short, a comfortable lecture theatre with excellent acoustics, a maze of hospital corridors to get lost in, and the opportunity to experience firsthand the latest developments in research. The high standard of previous conferences was maintained but unfortunately programme details were available too late to attract the audience it deserved. Thanks are due to the Astrological Association and the Urania Trust for organising funds and publicity, and to Charles Harvey, Liz Medler and Elizabeth Cott for doing all the work. The next conference will be in 12 months' time. Hopefully, future conference organisers will consider (1) sponsoring lectures specifically addressed to closing the widening gap between astrologers and researchers, and (2) circulating in advance lecture summaries like the ones above. This would improve communication, cut down on waffle, and allow more time for discussion.

Comment It didn't happen. Nor did the suggested topics for future research.

7.3.1986.2 First Eysenck Research Seminar

Michel Gauquelin, *Correlation* 6(2), 5-6, 1986. The report that follows is unabridged.

At the invitation of Prof Martin Fiebert the first (American) Eysenck Research Seminar was held at California State University, Long Beach, California, 30 June 30–3 July 3 1986, to give American researchers a unique opportunity to

benefit from Prof Eysenck's expertise. Location and timing for this event were carefully chosen to be held between two large, Californian, astrological conferences, the UAC '86 in San Diego (26 June – 2 July) and the AFA convention in Los Angeles (14–20 July). But, although about 1000 people attended each of these meetings (according to the organisers), only a mere 25 astrologers registered for the Long Beach one, which hopefully does not indicate American astrologers' general level of interest in astrological research.

The meeting was nonetheless interesting and brought together speakers from several countries and among them several university professors. As was planned, the talks were more devoted to describing methodological problems than to presenting new empirical results. The first to speak was Professor Eysenck. He pointed out the need to ask the right question in astrology if one wants to get the right answer. This is especially true when working on personality measurement. For instance, the recent, well-publicised Shawn Carlson study (*Nature*, December 5, 1985) does not provide any serious evidence against astrology because of the use of an inadequate personality questionnaire.

Michel Gauquelin's talk, "How to avoid self-deception in astrological research", described four technical difficulties that should be overcome in any serious research work: sampling procedures, astronomical problems, demographic factors, and statistical analysis (including replication or the lack of it). It was a general introduction to the following papers. Mark Pottenger on "Astronomical Problems" and Thomas Shanks on "Demographic Problems" nicely showed how computers can help solve the irritating, and often tricky, calculations of the expected frequencies. Françoise Schneider-Gauquelin devoted her presentation to "Statistical Tests" and Marc Urban-Lurain, talking also about statistics, suggested the use of multivariate analysis rather than univariate analysis when complex astrological researches are involved. [For more see next summary]

Prof Dr Suitbert Ertel's presentation was most interesting. He has carried out a thorough analysis of the Gauquelin research. Among other studies, he checked the validity of the "eminence effect", a claim made by Michel Gauquelin since his first book *L'influence des astres* (1955), ie the more famous the people are, the stronger the planetary effect. Working on samples of athletes, painters and writers, Prof Ertel said that the preliminary results of his critical examination tended to vindicate Michel Gauquelin's hypothesis.

Well-known astrologers Neil Michelsen, Robert Hand, Zip Dobyns and Roger Elliot participated in the seminar. And on the last day, for a general debate, Prof Vic Benassi presented the skeptic's viewpoint. This he did in a constructive way without debunking.

During the seminar, Eysenck's initiative for the creation of a Committee for Objective Research in Astrology (CORA) was discussed. All agreed that it was a good idea. The question was raised, however, as to what one means by "objective" research. Prof Marcello Truzzi suggested that "proponents of" and "opponents to" astrology should be represented in a truly neutral committee. Michel Gauquelin expressed the wish for a change of policy among some proponents of and opponents to astrology; in recent years, research projects have been too often kept secret and appropriate replies turned down, an attitude against the spirit of scientific inquiry. **Comment** CORA was duly formed but was almost never used, see 7.7.1986.1.

7.3.1987.1 6th AA International Research Conference

Anon, *Correlation* 7(2), 2-8, 1987. The report that follows is unabridged.

DON'T MISS THE AA, NCGR, UT JOINT CONFERENCE

EXPLORING ASTROLOGY

ASTROLOGY: SCIENCE AND SYMBOLISM

All day Friday 20th – Sunday 22nd November 1987

Speakers include: DR. GEOFFREY DEAN, DENNIS ELWELL,
DR. MICHEL GAUQUELIN, ROBERT HAND,
CHARLES HARVEY, MAVIS KLEIN, DR. THEODOR LANDSCHEIDT,
NEIL S. MICHELSEN, PROF. PETER ROBERTS,
PROF. ALAN SMITHERS and many others

Program: 12A Queens Road, Beckenham, Kent BR3 4JW
01 650 6164

This year the Astrological Association joined with the Urania Trust and the US National Council for Geocosmic Research to present the biggest programme to date, with three packed days featuring 28 speakers (including nine professors or PhDs) from seven countries, at the Regent Palace Hotel, Piccadilly Circus, London, 20-22 November 1987. More than 40 talks were given, 10 on previously unpublished experimental studies, half of them negative. Attendance, including speakers, was 80 on Friday and 90 on Saturday-Sunday. The sexes were equally represented. Especially welcome were 15 NCGR members from the USA. The following descriptions include critical comments from the audience.

Friday's programme began with Charles Harvey (UK) [picture next page] summarising Michael Startup's breakdown of how research can be done, namely via (1) experiment, (2) experience, (3) speculation, and (4) links with other areas. A show of hands found all four roughly equally represented, with (3) least and (4) most. Research should be a search for truth not a justification for cherished beliefs. In short, research needs ideas, tests, and an open mind.

Nick Kollerstrom (UK) described how Kepler had 800 charts and 16 years of weather observations to base his ideas on, so he merits being the patron saint of astrological research. To make ends meet he did horoscopes on the side, and found them "a most annoying servitude".

Michel Gauquelin (France) described four major problem areas. (1) Gathering data; it seems simple but demands much effort, time and money. (2) Astronomical calculations; easy with computers but the non-uniformity of planetary motion leads to daunting artifacts. (3) Demographic factors also lead to artifacts, eg more morning births means more

rising Mercurys. (4) Statistical analysis. Increasing the number of tests increases the number of "significant" results arising by chance. So beware isolated results. The important thing is: does it replicate?

Neil Marbell (USA) described two alternatives to single-factor studies. (1) Tests in which subjects have to pick their own chart interpretation from several based on whole charts. Such a test involving 24 subjects gave significantly positive results, see *NCGR Journal* Winter 1986-87. However, at least 9 similar tests with good controls have been published, all with negative results. (2) Tests involving predictions. His track record for 1987 to date is 88% accuracy. However, a lack of controls make this result difficult to interpret. [For details see 7.6.1986.1]



Many famous names were present from Neil Michelsen (on left with glasses) to Gauquelin and Ertel on far right

Mark Urban-Lurain (USA) described a further alternative to single-factor studies, namely multivariate analysis, which looks at many variables simultaneously in much the same way as an astrologer does. A test of 53 alcoholics vs 217 normal people, using angular separation, house position and parts, produced a multivariate model that correctly classified 72% of a second group of 230 normal people, see *Astrological Journal* May-June, 1987. The accuracy of classifying a second group of alcoholics was not determined. A further test involved eight professional groups from the Gauquelin data, each matched to the same birth year profile to avoid astronomical artifacts, and combined into a single sample of 12,700 births. Half the data were used to derive a multivariate model based on diurnal position and angular separation of ten planets. The model correctly classified 26.3%, of the births in the other half vs 12.5% expected by chance. However, this result is unsurprising because the data are already known to exhibit positive effects. The effect of excluding angular separation was not determined. [For details see 7.6.1981.3]

Charles Harvey (UK) briefly summarised harmonic theory, which is that astrological effects vary continuously. So if you must measure in boxes, make them small ones so that your results can still be used for harmonic analysis.

Gary Duncan (USA) was to have described his Grass Roots Research project but was unable to be present.

Dr Lee Lehman (USA) summarised 8 years of work by ISAR on their computerised database, for which Mark Pottenger has done most of the programming. The aim is to collect birth data (including biographical, medical, family and other details) from many sources and store it in a standardised retrievable form. Sub-samples can then be drawn that are as free as possible from single-source bias. Data are stored in ASCII format and are available as printout or on disk. Current total is around 10,000 births, of which 40% has been provided by Lois Rodden. The first catalogue is due early in 1988. As yet the database does not include the Church of Light data or the Gauquelin data. However, the last should be available in a year or so from ACS on about 10 floppy discs for very roughly £300.

Mike O'Neill (UK) showed how to do good work with a simple home computer, in this case a Sinclair Spectrum without disk drives. He has built a database of 60,000 charts (no birth times) from sources like *Who's Who*. Keying in takes one day per 1000 births if the source has to be photocopied, less if not. Calculation of 10 planetary positions takes a few seconds per birth. Once stored on cassette tape, the positions are transferred to arrays for testing specific hypotheses. Due care is needed to generate controls and to avoid artifacts.

The afternoon began with an audience poll (N = 60 increasing to 78) by Dr Geoffrey Dean (Western Australia). The following summary includes a further poll on Saturday (N = 88). About 80% lived outside London, exactly 50% were male (vs typically 20% at UK and US non-research astrology conferences), 37% had attended a previous London research conference, 60% had a university degree, 59% thought that astrology as practised by most astrologers can be tested by scientific methods. Roughly 25% agreed with the conference flyer that "astrology promises to revolutionise science and contemporary thought", whereas none thought the same of phrenology despite assurances to the contrary by phrenologists. With nothing but an ephemeris and an atlas, can you erect and interpret a birth chart? With nothing but a table of critical values, can you apply and interpret a chi-squared test? An encouraging 24% could do both, 47% could do BC but not CS, 4% could do CS but not BC, and 25% could do neither. Ownership of books and journals was *Recent Advances* 50%, *Astrology Science or Superstition?* 45%, *Correlation* 36%, a textbook of experimental psychology 33%, *NCGR Journal* 22%, and *APP* 18%. An astonishing 79% owned a computer and 33% could write computer programs. The proportion who had done research using 0-99, 100-999, and 1000+ subjects was 14%, 18%, and 14% respectively. 6% had not done research but planned to do so.

Martin Davis (USA) described the latest Matrix research program. Using a database stored on disk, the program selects, counts and displays results in a choice of formats. Data is available at £75 per 1000 births.

Thomas Shanks (USA) described a comprehensive new analysis of the Gauquelin data. For each of 6 professional groups (actors, military men, painters, scientists, sports champions, and writers but not musicians, politicians or

physicians) the ACS computer generated 50 sets of random birth data with year and month profiles matched to the Gauquelin data. The resulting means and standard deviations were then used to evaluate the Gauquelin results. Analysis included all planets in signs, houses and sectors, and major aspects of orb 5°. Nothing emerged that was new or contrary to previous findings. Increasing the aspect orb to 10° made no difference. There was no appreciable difference between house and sector results, which confirms Michel Gauquelin's findings in his computer re-analysis in *Correlation* 4(1), 8-24, 1984. [Summarised in 7.5.1984.2]

Terry Dwyer (UK) described using a questionnaire to investigate Pluto aspect meanings. For 175 subjects the results did not support tradition. For details, see this issue. But don't subjects tend to pick extreme answers, thus making the questionnaire useless? Answer: no such tendency was observed. [For more see 7.6.1987.2 and 7.6.1987.3]

Dr Lee Lehman (USA) used astrological models of homosexuality to illustrate the perils of ignoring simple probabilities. The proportion of homosexuals in the general population varies with country and decade but is around 5-10%. The proportion predicted by various models is Jansky-Naumann 90%, Darling-Oliver 67% and Van Dam 75%. So these models should never have been published. But is homosexuality a stable attribute? Answer: define it in advance.

Charles Harvey (UK) suggested using case studies as an alternative to the large-sample approach. Haemophilia in Queen Victoria's family tree tends to be accompanied by MA/SA contacts that are absent in non-haemophiliacs, suggesting that MA/SA = weakness. This result has yet to be replicated. For details see *Astrology and Medicine Newsletter* November 1987. [And 7.6.1987.5]

Roger Elliot (UK) analysed transits at the 1983 and 1987 UK general elections. Analysis was restricted to the three main parties (Tory, Labour, and Alliance), each of whom [in 1983] had one candidate standing in each of 650 constituencies, making a total of 1950 candidates [more in 1987]. Of these 1200 (1983) and 1734 (1987) had publicly available birth data (dates only, no time or place). Aspects were counted between planets (not MO) and NN in the natal chart and the transit positions of the same at 24h on the night of the election, by which time many of the results had become known. Aspects were all 30° and 45° multiples with orb 1°, so the average probability of an aspect was $16 \times 2/360 = 0.089$. No allowance was made for orb or type of aspect, so an exact conjunction and a semi-sextile of orb 1° both counted as an aspect. The results for the 100 natal-transit pairs showed that (1) about one third were close to the theoretical frequency of $0.089 \times$ sample size. The rest were appreciably above or below by typically $0.02 \times$ sample size, but amazingly the direction was almost always the same in both elections. (2) There were no obvious differences between winners and losers. (3) The symbolism was inconsistent, being sometimes in support of tradition (eg SA was unhelpful), and sometimes not (eg JU was often just as unhelpful). These results caused excited discussion. Given the large number of candidates, it is unlikely that their mean age and age profile are much the same for both elections, in which case the results could be due to astronomical and demographic artifacts.

Peter Wright (UK) had examined the works of 3000 creative writers. Their themes tended to match their Sun-signs. Unfortunately no quantitative analyses or control tests had been made, making the results difficult to interpret.

Saturday began with Professor Suitbert Ertel (Germany) confirming his discovery of planetary effects that, contrary to the Gauquelin hypothesis, decrease with increasing eminence. Using citation counts as an objective measure of eminence, scientists showed a decreasing surplus of SA and (less markedly) MA in key sectors as eminence increased. Physicians showed an unusual U-curve for the same planets, possibly due to interaction between the scientific and clinical components of medicine. He then looked at character traits. Tests showed that (1) as eminence increases so does biography length and the total number of traits. For the latter $r = 0.42$ for sports champions, 0.49 for writers. (2) Peaks in key sectors are just as marked for total traits as for typical traits, ie traits said to be typical of the planet. (3) Typical traits are much more positive and socially desirable than non-typical traits. So the natural tendency for biographers to make their subjects more positive as their eminence increases (the halo effect) will increase the number of typical traits. Items (1-3) suggest that peaks reflect eminence, not traits, which is contrary to the G hypothesis.

This view was tested by two experiments using pairs of eminent professionals matched for eminence but one Gauquelin planet respectively in key sectors or in counter-key sectors, ie those most opposite in effect to key sectors. The other four Gauquelin planets were in intermediate or counter-key sectors (the ideal case). Also tested were less-ideal cases where up to two of the other four planets could be in key sectors for one subject provided they were in intermediate sectors for the other. The Gauquelin hypothesis predicts that the key group should be more like the planetary type than the counter-key group.

In the first experiment 8 university students rated the traits lists of 103 pairs of sports champions and 180 pairs of writers against the relevant planetary types. They had to decide which subjects best matched the planetary type. The results showed more hits than misses for MA and JU but not for MO, VE and SA. The results for ideal cases (roughly half of the total) were no better than for less-ideal cases. The positive results for MA and JU could be due to trait artifacts (items 1-3) that were avoided in the second experiment. Here 14 German professors of French literature rated 43 pairs of French writers (names only, no trait lists) against the relevant planetary types, and 7 art professors did the same for 58 pairs of painters. The results showed no consistent trend whatever (if anything the misses outnumbered the hits), indicating no support for the hypothesis. The results for ideal cases (roughly two-thirds of the total) were, if anything, worse than for less-ideal cases. In other words, provided that the professors knew their subjects' personalities (and they were free to decline judgement if not), there is now some reason to suppose that trait effects in the Gauquelin data (and by extension the harmonic findings of John Addey) may be due to artifacts.

Michel Gauquelin (France) then demonstrated how a true scientist reacts when a hard-won hypothesis seems to be overturned. With a rueful "I am not sure I can speak now", he pointed out that in science "any kind of bad or good news is good news", especially as it is "very hard to find intelligent and honest people like Suitbert Ertel who are prepared to dig in this area". He then described what happens when traits common to two planets (eg both MA and JU are enthusiastic, quick and controversial) are removed from the list of typical traits. In this case the resulting pure JU was much less nasty (eg charming, elegant), and the effect size for both MA and JU was increased by about one half.

Mavis Klein (UK) sent 117 volunteer couples five different synastry interpretations, one of which was their own. The interpretations were based on major interplanetary aspects between charts. Signs were excluded to avoid clues. Just over half responded. The correct interpretation was ranked 1, 2, 3, 4, 5, in 17, 19, 7, 5, 10 cases by 58 males, and in 24, 11, 10, 9, 10 cases by 64 females, both significant at the 0.01 level by chi-squared tests ($df = 4$). Fuller results may be published in the next issue.

Dennis Elwell (UK) suggested that astrology be tested by concentrating on visibles, eg on apples falling rather than theories of gravity. If a valid procedure can be agreed, this approach can avoid the measurement problems that exist because what is measured (1) may not correspond to what astrology predicts, and (2) may not be important anyway.

Professor Peter Roberts (UK) surveyed different models of astrology. To fit the facts a model must accept that personal attributes are already present at birth and cannot therefore be affected at that time by planetary influences. Consequently the only conclusion is that planetary influences affect the soul (for want of a better word) instead. They are carried by beams that travel in straight lines at the speed of light. They are not electromagnetic and, like neutrinos, pass through ordinary matter. They stimulate the soul to select a birth time at which the planetary influences enhance the existing attributes, possibly by about 10% which, although not large (and certainly much less than popularly claimed by astrologers), is still useful if aiming at the top. The model "requires a lot of unsubstantiated entities to sustain it". Nevertheless it can be tested – on harmonic grounds it predicts that diurnal effects should be stronger if measured in the prime vertical rather (as at present) in the diurnal circle.

Dr Percy Seymour (UK) noted that the conference was supposed to combine astrology and science, but the audience manifested mostly astrology, some statistics, and hardly any science. He pointed out that without testable models no progress is possible, and then outlined his model as presented at the previous conference [see 7.3.1986.1]. Its merit was not that it was possibly true but that it was testable, and could therefore lead to better models.

Neil Marbell (USA) described his own physical model of astrology. The planets modulate the spiralling solar wind and the calcium ions it contains. Now calcium ions are crucially involved in the transmission of human nerve impulses and muscle movement. So, as above, so below. However, neither the Seymour nor Marbell models explain why the planetary influences, which rain down continuously, should act only at the moment of birth. Nor do they explain why the birth time should be relevant when (as noted by Peter Roberts) personal attributes are by then already established.

The afternoon featured discussions of major issues beginning with an overview by Dr Geoffrey Dean (Western Australia) of research findings to date. As in any other field, every astrological study is open to errors due to mistakes, uncontrolled variables, artifacts, and random fluctuations. So disregard single studies and look only at the overall picture. In astrology the issues boil down to this: to be credible in a helping role, astrology must produce benefits beyond those produced by non-astrological factors such as Barnum and placebo effects. But the results of well over 100 controlled studies have shown that astrology does not produce useful benefits beyond those produced by non-astrological factors. Assuming this is because all research to date has got it wrong, what must we do to get it right?

In the subsequent discussion, lack of positive results was attributed to bias and invalid criteria (Lee Lehman, USA), inappropriate world views (Robert Hand, USA), lack of integration between left and right brains (Mavis Klein, UK), and mismatch between measures and astrological ideas (Dennis Elwell, UK). In reply, Dean pointed out that in tests of astrologer agreement it did not matter whether the astrologer was right or wrong, so criterion validity, world views and so on were quite irrelevant. Yet without exception all 14 studies to date had found almost no agreement (mean $r = 0.11$) between astrologers on what a chart means, see *Correlation* 6(2), 7-52, 1986. Was nobody worried? He then suggested an armchair exercise. Choose a long-lived species of fish. Arrange for a billion eggs to be fertilised all at the same moment, thus producing a billion identical birth charts. Then select spawn at random for conserving or feeding to predators. A billion identical charts should produce a billion identical destinies, but you have made it your job to produce a billion exceptions. What makes you think you are not one more? There was no response.

Roger Elliot (UK) felt there should be more conferring. Neil Michelsen (USA) suggested using existing psychological databases. Charles Harvey (UK) advised that the Urania Trust was keen to fund research: send your proposals to 5 Victoria Road, Frome, Somerset BA11 1RR, UK. [Address is no longer valid]

Dr Beverly Steffert (UK) compared the EPQ scores of 120 subjects with their responses to Franz Stark's planetary typology questionnaire given in *APP*, May 1987. Although the differences between the mean scores for planetary type vs the rest tended to be small (typically 2 points), the direction was confirmatory for the descriptions of VE (P-), JU (E+), and SA (E-), but not for MO (N-), and MA (no difference). Contrary to expectation, MO was also more E+ than JU. So Stark's questionnaire is of limited validity.

Dr Geoffrey Dean (Western Australia) asked the audience to relax and test their intuitive consensus (aka the Delphi approach) against three popular unknowns that were in fact known. A show of hands found that roughly 25% of intuitions supported Newton/Halley, 60% lunar/lunacy, and 35% Hemmings/King George III, all of them wrong. The

rest were not necessarily right because they included many don't knows. Three other areas were looked at. Only 3% felt that a 36 item questionnaire test of 200 subjects could be done in 100 man-hours or less (such a study had taken 500 man-hours). 10% felt that astrology should receive priority in government spending, whereas 1% felt that if there were already such spending then it should be reduced (versus respectively 1% and 42% for the general population as reported in *New Scientist* 21 February 1985).

Michael Munkasey (USA) had spent six years hunting down published keywords for chart factors. The result was 2000 pages of keywords. They showed a reasonable consistency, so categories were developed using a thesaurus. Examples:

Asc	Identity, reality, projection. experience, perception, appearance.
MC	Maturity, restraint, coping, intellect, purpose, principles.
Equat Asc	Unconscious, self-domain, shadow, self-examination, adjustment.
Vertex	Entanglement, involvement, response, encouragement, desires.
Co-Asc	Vibes, affirming your identity, body language, telepathy.
Polar Asc	Social responses, relations to community, culture.
0° AR	Capitalising, impersonal relations, influence of the world on you.

Dikki-Jo Mullen (USA) considered what the 1987 supernova may mean in the birth chart. The previous comparable event had occurred in 1604. Ecliptic position had not been determined but in the Johndro locality chart for its discovery it was in 9th house. No conclusions were possible but its influence was possibly malefic.

Frans Pernot (Holland) presented a model for integrating astrology and psychology. This abandoned a trait approach in favour of an interactional approach. Here personality is seen as a three-way system: I (*planet*) experience myself in this way (*sign*) in this situation (*house*). The model is thus not static but dynamic, which reflects the Earth's movement through space. A very similar model was proposed by Patrick Curry ten years ago. [For Pernot details see 7.2.1987.2]

The first half of Sunday morning was devoted to financial astrology. Neil Michelsen (USA) described the Gann technique for stock market prediction, as refined by Gil Herrera during 16 years of study. The main steps are (1) Determine angle of significant highs and lows since inception. (2) Predict highs and lows on same angles as in past. (3) Use (2) especially to predict next cycle from previous cycle. Owing to inadequate projection facilities the visuals were largely unreadable, so crucial details remained a mystery.

Jeanne Long (USA) described her experience of hard helio and geo aspects vs the futures market such as gold, silver, hogs, and cattle. Usually (70-75% of the time) an index on the trend line will move below it within 3 days of an exact aspect. If away from the trend it will return and perhaps cross it. If many aspects occur in a short time the outcome is indistinct and uncertain. These indicators are not viable unless combined with orthodox buy and sell signals.

Lee Lehman (USA) summarised four years of work by Robert Kimball on the charts of over 325 US companies. The outcome for each company is an astrological index based on weighted geo aspects (multiples of 30° and 45°) between transiting and natal planets. The method differs from others in that (1) only geo is used, and (2) the best natal chart (eg date of first trading vs date of incorporation vs date of going public), and the number, orb and weighting of aspects are determined empirically for each company. The steps are (1) Determine the times of short-term movements that are independent of the broader market. These are what we want to predict. (2) For each individual aspect, eg JU-30-SO, determine if it is more or less frequent than expected, and the average orb. (3) Combine the best indicators (typically 20-40 out of possible 720) into an index. They will be different for each company. Thousands of computer runs showed that the method is most suitable for short-term price moves. When tested against 150 stocks during 1985 the method indicated 104 rises, of which 82% were correct. The indicated duration of the price movement was correct within 2-4 days. The bigger the astrological index peak the better the reliability. Some stocks work better than others – if it moves with (or against) the market, the method is less (or more) reliable. For some reason the method works for 2-6 months and then fades away, after which the components of the index must be recalculated.

Robert Hand (USA) described a forthcoming Astrolabe program for investigating financial cycles. The program takes any series of de-trended financial data, superposes segments based on the planet/aspect cycle of your choice, and presents the resultant in graphical form. Aspects between the outer planets produce the biggest effects (SA especially, JU less so), while those involving the inner planets have so far been inappreciable. Thus the biggest effect vs the Dow-Jones involved the helio 4th harmonic SA-PL, which gave a wave with 20% amplitude. These aspects are all in the sky and do not refer to any birth chart.

In the subsequent discussion it was emphasised by all speakers that astrology is only an aid not a primary tool. Success still requires insight, experience, and being attuned to the market. One problem with astrology is that if enough people use it then it becomes a self-fulfilling prophecy. Because most operators are understandably secretive, the number using astrology (and orthodox cyclic equivalents thereof) is impossible to know. Many astrologers in the market had correctly predicted the crash of 19 October 1987, even though they used different methods. These same methods predict a major depression around 1990. [For tests of financial astrology see 8.8.6]

Rudolf Smit (Holland) analysed primary directions at death for 72 fatal accidents in Holland and 62 suicides in New York (data from Nona Press). Respectively 22 and 26 had birth times precise to one minute. (1) For accidents the most frequent aspects were those to and from the AS, but for suicides their frequency was below chance level, so the initial support for tradition did not replicate. (2) Contacts at death were no more numerous than at other times. (3) In general the angles did not feature more strongly than planets. (4) Hard aspects did not consistently out-number

other types of aspect. (5) The exactness of the aspect was not affected by birth time precision. (6) Use of topocentric primaries (which include latitude and converse motion) produced little improvement. These findings do not support claims that the (directed) aspects at important events are always fitting, that the orbs are always tiny, and that precise birth times are always necessary. [Smir's talk was read by Geoffrey Dean, for details see 7.4.1987.1]

Professor Alan Smithers (UK) did not present his study of astrology and aggression due to illness.

After lunch Nick Kollerstrom (UK) updated his study with Michael O'Neill on the Eureka moment as presented at the previous conference [7.3.1986.1]. The outcome is unchanged.

Dr Theodor Landscheidt (Germany) looked ahead to the shape of things to come. Kepler felt that aspects were the fundamental basis of astrology, and this seems to be so. Today there is evidence that helio aspects, especially those between JU and the centre of mass of the solar system, have marked effects on the Sun. This allows precise prediction of solar activity and whatever terrestrial effects may follow. Thus astrology will progress beyond 2000 on a firm physical basis. There is an increasing need for an interdisciplinary approach.

Markku Manninen (Finland) briefly tabled two studies from the land of high latitudes. One replicated the Gauquelin heredity study with positive results despite a very small sample. The other tested rectification by the prenatal epoch using 81 precisely timed charts. The results showed no support for the theory.

Then followed a general roundup debate. Peter Roberts felt that the talks by Tom Shanks and Mark Urban-Lurain showed the way for future research. Geoffrey Dean condemned the practise of presenting studies without a review of existing work, because this gave beginners (our most precious resource) no idea of the problems and where best to go next. He then pointed out that, despite earlier pleas, no suggestions had been forthcoming for better experiments or for improving the agreement between astrologers. The response to this was largely a heated replay of Saturday's discussion, and boiled down to (1) it is not for this conference to say what researchers should do, and (2) it is in the nature of astrology for astrologers to disagree.

Thanks are due to Charles Harvey (UT), Liz Medler (AA), and Jeanne Long (NCGR) for organising yet another memorable conference. This year most speakers circulated details of their talks in advance, which greatly increased the time available for discussion. However, there remained the problem that expert discussion was too technical for beginners. Perhaps future conferences should be divided into a day for beginners and a day for experts. On-site catering would be a further help – it is usually during informal discussion that the real progress is made.

7.3.1988.1 AFAN position paper on astrology in North America

Noel Tyl (ed), *Astrology Now: The world of astrology in the 1990s*. Association for Astrological Networking, 14 pp.



Topics covered are history, popularity, legal/religious issues, training, misconceptions, and scientific studies (mainly Gauquelin). It claimed that "the great celestial bodies exercise a variety of gravitational, electrical, and magnetic effects on our lives". Astrology "the study of the cosmic cycles surrounding us" is a "time-tested body of knowledge that can be taught and learned". Sun-sign columns "are greatly oversimplified but not necessarily invalid", "each birth chart is a unique representation of the individual". It noted that "enough irrefutable scientific evidence now exists" to support astrology, with the Gauquelin data being "a key element". It also noted that scientists still oppose astrology, so "astrologers seriously question whether the problem lies with astrology as a discipline or with science in defining what

it will or will not allow as an expansion of knowledge"; and that in the USA "under the First Amendment [protection of free speech] there is no such thing as a false idea". **Comment** There was no mention of US classical astrologer George Noonan's description of the typical US astrologer whose "ignorance of astrology is exceeded only by his lack of knowledge of just about every other intellectual discipline" (*Journal of Geocosmic Research* 2(1), 6, 1976).

7.3.1988.2 7th AA International Research Conference

Anon, *Correlation* 8(2), 2-4, 1988. The report that follows is unabridged

About seventy people attended the two-day conference at The Polytechnic of Central London, 26-27 November 1988. It was co-sponsored by the AA and the Urania Trust and embodied the theme "Astrology and Time". Michel Gauquelin (Paris) began the first day with a discussion of the various views of time from Plato to Einstein, from the idea of cyclical change epitomised in the Tao of Buddhism to the first theories of synchronicity postulated by Theophrastus and the psychophysical parallelism embedded in pre-established harmony proposed by Leibnitz. He presented the various views as steps in the continuing search for a unified theory of unconscious phenomena.

Dr Margaret Millard (USA) discussed time in the framework of measurements in right ascension and declination and especially of converse directions measured in Meridian Distance projected onto the equator. Using exact timings in these frameworks over several generations of a family, she revealed conjunctions to the minute, especially when converse transits were involved. In her new, self-published book, *The Genetics of Time*, she discusses the application of these various techniques, which together also provide a rectification technique, including domal analogues, the daily transit of planets through personal houses.

Dennis Elwell (UK) spoke about planetary "holons" and the fact that every science develops its own language. He suggested that, to avoid a planetary vernacular, astrologers should focus on dynamic, organic functions and processes rather than static traits to try to understand planetary effects. The concept of a planetary holon implies a tendency for particular types of event or even traits to co-occur with an underlying theme; for example, whereas MA and JU shared similar traits words, only an appreciation of their planetary holon reveals their differing motivations and inner psychological and emotional content.

Dr Lee Lehman (USA) discussed the results and criticism of the "Mars/Redhead" study, recently published by Judith Hill and Jacalyn Thompson in the *Astrological Journal*, which had found a zone of $\pm 30^\circ$ around the Ascendant and Descendant where MA was found significantly more often and less often, respectively, for redheads, based on 500 timed birthcharts mainly from the 1950s and 1960s. She argued that Françoise Schneider-Gauquelin's criticisms, based on expectations from ordinary people, were not valid. [See also 7.6.1997.1 and Steffert in next summary]

Professor Peter Roberts (UK) expanded on his theory to account for the existence of harmonics in Gauquelin's distributions in the Prime Vertical circle, presented at the last conference [6th LRC]. The theory requires a "receptor organ" whose radial components resonate when aligned towards specific planets. A test of this theory would be a demonstration of strong amplitudes and more closely clustered phases in a suitable physical circle. Although the early results of the Prime Vertical analysis had looked promising, the verdict after a comprehensive appraisal was "not proven". If the theory is sound, there must be another physical circle involved, for which Roberts speculated on the putative Indian chakras, as rotating centres recording physical angular relationships.

Paul Wright (UK) described his failed attempts to replicate results with water uptake in dry beans, mainly based on the work of the late Professor Frank Brown. Lack of sufficient environmental controls seemed to contribute to the failure. Wright also discussed his study of 11 generations of the Royal Stewarts of Scotland, which appears in his recent book *Astrology in Action*.

Simon Best (UK) explored the degree to which an understanding of a causal mechanism in astrology might be provided by electromagnetism. He focussed on the latest findings in the field of bioelectromagnetics, the study of the application and effects of electromagnetic fields on biological systems, which have shown that man is orders of magnitude more sensitive to extremely weak but highly coherent (regular in phase and amplitude) levels of EMFs than has previously been realised (see his co-authored forthcoming *Electromagnetic Man*). A model to explain this sensitivity involving resonant amplification may help explain specific astrological results, particularly the geomagnetic correlations observed by Gauquelin with his planetary heredity results. It was accepted that such a model cannot account for most astrological data.

Dr Percy Seymour (UK), lecturer in astronomy at Plymouth Polytechnic, took up the electromagnetic theme and expounded on his theory, developed in his recent book *Astrology: The Evidence of Science*, that astrological findings may be explained by resonance interactions involving planetary effects on solar radiation and the Earth's geomagnetic field (GMF). He postulated that the fetus responds non-linearly to fluctuations in the GMF which, on disturbed days, disturbs planetary effects.

Finally, Mike O'Neill (UK) showed the results of a computer study of the orbital patterns of the planets plotted from above the solar system with the Earth held stationary. In particular, Venus's eight-year orbit traces a perfect five-petalled rose shape, which perhaps underlies its attribute of harmony. O'Neill showed that its retrogradation occurs at times of its perigee, thus revealing a major artifact for any research studying either factor or Venus' sign duration.

On Sunday the first talk was by Dr Geoffrey Dean (Western Australia) presented in his absence by Dianne Binnington. In trying to answer his own previous challenge to devise new ways of astrological research, he discussed the possible use of applying poetry to astrology. He showed that expressing interpretations in good poetry was interesting but generally impractical. By contrast, the use of poetry as an adjunct to keywords, and the use of Haiku statements instead of keywords, seems worth exploring.

Keywords

Margaret Hone

Power, vitality (SO)

Response,
fluctuation (MO)

Communication (ME)

Energy,
heat (MA)

Expansion (JU)

versus Poetry

Byron, Tennyson, Shelley, Wordsworth et al

The sun, bright eye of your universe.

A faded Moon in dim, silver twilight.
Azure Moon, rippling in verdant skies.

Nor all your tears wash out a word of it.

Mars, hectic red and pestilence stricken.
The Martian came down like a wolf on the fold
In fair round belly with good capon lined.

Nebulousness,	Neptune, brackish with the salt of human tears.
impressionable (NE)	The still, sad music of humanity.
8th solar house	Setting sail beyond the sunset.
Conjunct Venus	That deep in sweet embraces dwell.
Unaspected Moon	Alone and palely loitering.

Professor Suitbert Ertel (West Germany) categorised Gauquelin's results into their main areas of focus and analysed what he termed the three pillars of the Gauquelin work – the professional groups, the character traits results and the heredity findings – in terms of a possible physical explanation. He plotted the sports champions/Mars results against planetary distance using six variables: distance, angular size, apparent magnitude, solar elongation, Mars angular separation from Sun, and radius vectors, but found no significant deviation with key sector percentages. Using the daily *aa* geomagnetic index, he tested Gauquelin's heredity geomagnetic effect by controlling for 20 days before and after each day when the heredity effect was observed, but could find only a very weak effect. His results and comments by Gauquelin, who raised some objections to Ertel's methodology, will appear in the next *Correlation*.

Dr Beverley Steffert (UK) then took up the controversy over the Mars/Redhead study discussed by Dr Lee Lehman. Based on her previous research linking MA with extroversion and impulsivity, Steffert suggested that the results reflected a "volunteer personality" effect, there being a well-known profile for volunteers for social science research, among whose attributes are above-average extroversion and impulsivity. Thus introverts tend to be under-represented and this can bias research findings – and, because of the high proportion of volunteers in the redhead study, may have led to any observed correlation being misattributed. She had found significant differences for MA placement between the redhead sample, 1128 social science research volunteers (from a previous marriage study) and 24,961 Gauquelin ordinary people (nonvolunteers). The distribution of the marriage research volunteers was similar to the redheads, being almost identical at the setting point, but around the Ascendant the redheads significantly exceeded the married volunteers. Both distributions were significantly higher around the Ascendant and lower around the Descendant than that of the ordinary people, seeming to indicate the existence of both a volunteer and a redhead effect.

Mike O'Neill (UK) then reported his replication of an earlier study by him of the placement of the Moon's nodes in the charts of marriage partners, this time with 35,000 eminent marriage partners and some 17 million non-married couples acting as controls. As predicted, the number of people with a 5' nodal conjunction with either of their partner's mean nodes was below expectation; most of the deficit concerned the partner's Moon ($p < .001$) and the overall result was significant until Royal couples were added.

Nick Kollerstrom (UK) focused on 21 "Eureka" moments. They revealed an excess of conjunctions, trines and oppositions using a 5° orb. He then introduced his concept of "harmograms", graphs that reveal a harmonic's power at any given moment and which show massive peaks for septiles at important periods in the lives of great inventors. He was followed by Martin Davis, who described Matrix' new research programs.

Dr Lee Lehman (USA) examined the "faces of the planets" according to Lilly's dividing the degrees of the zodiac into seven sections each linked to a planet. She tested 500 Gauquelin scientists for SA in degrees ruled by the different planets, with some significant results.

Michael Harding (UK) analysed the charts of 287 astrologers for three factors: a strong 26° in LE/AQ, MO=SA/UR, and UR conjunct the angles. He found a high frequency of JU at 18° of the mutable signs, with the last two factors supported, plus MC=VE/NE, SO=ME/SA, and SO=VE/JU.

Roger Elliot (UK) looked at how 750 market leaders, their five years of stock prices, and companies' shares moved in relation to transits to their charts. The charts of those companies whose shares had risen or fallen 100% in any year from 1982–87 showed SA or JU most frequently in the 1st or 10th house with MA. Other findings included share price rising reflected by JU in the 5th or 9th trine SO, or transiting JU conjunct radical JU in the 1st or 12th.

Finally, Dennis Elwell (UK) discussed significant factors in the ingress charts of recent Olympic Games and showed how they indicated important events during or surrounding them.

The conference ended with a general discussion forum. Though a success, it would be helpful in future if speakers provided a summary of their talk to avoid needless transcription; also, if space was reserved in a pub or restaurant for lunch, many would probably welcome the chance to continue discussions rather than scattering to different places.

7.3.1989.1 8th AA International Research Conference

Anon, *Correlation* 9(2), 2-3, 1989. The report that follows is unabridged.

This annual conference was again sponsored by the Astrological Association and the Urania Trust, this time at 1-6 Essex Street, London, 18–19 November 1989, and embodied the theme "Astrology: The Evidence". Attendance was disappointing, being 40 on the Saturday and 45 on Sunday, including 14 speakers.

Saturday's programme began with a very brief review by Michel Gauquelin (France) of over 30 years' research on traits and eminent professionals. This provided an introduction to the area covered by the next speaker.

Professor Suitbert Ertel (Germany) described some early results from an ongoing study of trait extraction from biographies. The sample was 110 pure planetary types (eminent professionals with just one planet in key sectors and

no others). The traits extracted by four students (blind to planetary positions) under rigorously standardised conditions were compared to those extracted by Gauquelin using the same biographies. The results showed that Gauquelin extracted proportionately more traits consistent with planetary positions than the students did, indicating the existence of a trait-extraction bias.

Charles Harvey (UK) reviewed the work of John Addey on harmonics and trait words. No new results were presented. It is hoped to publish Addey's remaining unpublished work in 1990.

Michael Stuart (UK) described how 12 historically eminent charts (such as Hitler, Marx and Churchill) showed surprising correspondences with biographical details. There were no controls and the method of scoring was not explained. Of 278 eminent leaders, 29% had a major MA-SA aspect vs 39% for 142 eminent thinkers and 33% expected by chance.

After lunch Dr Percy Seymour (UK) drew together some ideas on uncertainty and chaos. Chaos arises from non-linearity and gives outcomes that are inherently unpredictable. This unpredictability may explain those occasions when astrology seems to work only sometimes.

Dr Frank McGillion (Scotland) re-stated his theory of the role of the pineal gland in astrological causation, and highlighted interesting parallels with the ideas of Freud's contemporary Wilhelm Fliess. Planets may affect the production of melatonin at birth, which can then affect the subsequent life.

Professor Peter Roberts (UK) reviewed the role of models in astrology. There are five broad approaches, namely causal, synchronistic (Jung), organismic (Sheldrake), vitalistic (Roberts), and metaphysical (Elwell). A full discussion appears in his book *The Message of Astrology*.

Dr Lee Lehman (USA) outlined the hermeneutic approach to astrology to proving astrology. The difficulty with statistics is that they are not applicable to individual cases. An alternative to the scientific approach is the historical.

Roger Elliot (UK) chaired an open discussion on "Must it always be numbers?" The answer seemed to be yes if the concern is knowledge, no if the concern is subjective experience.

Sunday's programme began with Dr Geoffrey Dean (Western Australia) leading an interactive approach to an astrology beyond your wildest dreams. It is 1995 and you have to spend £20,000 million a year to bring the benefits of astrology to all Brits. What do you do? Suggestions included an official Department of Astrology (aka the DA's office), high street booths offering free computerised horoscopes, replacing Sunday School with astrology classes, and appropriate damage control when the PM's wife was discovered to be a practising palmist.

Dr Lee Lehman (USA) discussed the inadequacy of Bayesian Analysis for testing astrology. One problem is that it cannot be applied to the individual case. Another is that it requires specifying probabilities in advance. However the Bayesian approach was acceptable for pre-assessing hypotheses as suggested at last year's conference.

Dr Beverly Steffert (UK) showed how supposedly objective biographical descriptions of personality could be biased by the implicit personality theories held by the observer. So how much of the description lies in the eye of the beholder?

Clare d'Auro (UK) listed the dates of major shifts in Western music since ancient Greece, and pointed out interesting parallels with the conjunctions and oppositions of UR and NE. A more convincing match was with 1.5 UR-NE cycles, suggesting a possible influence from PL, but this had not been investigated.

After lunch Roger Elliot (UK) led a debate on the problems associated with the computer analysis of transits to company charts. After much discussion with the audience their resolution was still unclear. It is advisable to do a pilot study first before testing a full-scale sample.

Dr Margaret Millard (formerly USA now UK) put forward evidence to support the topocentric claim that there is always an exact contact in oblique ascension between the charts of parents and children. Between two parents and their three children there were four contacts of orb 1° vs no contacts for two control parents and the same children.

Michael Harding (UK) explored the synastry between the charts of Sigmund Freud's family as an example of the sort of underlying themes that occur within families. Midpoint analysis revealed strong inter-connections, such as Freud's SO/NE = his father's SO/NE at his birth and death.

Mike Harding and Charles Harvey examined astrology's ability to predict the timing and location of earthquakes. A major US study has shown that similarities between earthquake charts increases with earthquake magnitude and decreases with distance between epicentres. Of the 15 earthquakes in the San Francisco Bay area from 1800 to 1984, a strong SA in SC and MA in TA [sic, the original is incomplete]. The latest one in October showed UR conjunct MC. Mike Harding then described his study of 132 earthquakes, of 7+ magnitude. UR was distributed near MC and IC, with, for example, JU/PL phased from the AS, and MA/UR and SA/NE phased from SO.

A general round-up and speakers' forum ended the day.

The conference brought some disappointment. Despite the title "*Astrology: The Evidence*", evidence based on adequate samples and methodology was fairly sparse. Proper debate was somewhat stifled by a general lack of technical expertise. Only about 75% of an overhead transparency could be seen at any one time. There was again no organised venue for lunch – a complaint raised in the previous two conference reviews – which meant that many opportunities

for discussion were lost. Pre-publicity was late, and of the two nearest tube stations marked on the programme, one was shut on day one and both were shut on day two. Those who paid £20 a day, plus travel and hotel expenses, might have felt they deserved better than this.

7.3.1990.1 Editorial: Science aids consensus

Wout Heukelom, *AinO* 5(2), 1 & 6, 1990. An abridged excerpt from Heukelom's opening address at the conference *A Critical Look at Astrology* held in Utrecht on 12 January 1991, see 7.3.1991.1. Here and elsewhere the custom of dating Winter journal issues as (in this case) Winter 1990-1991 has created an apparent out of sync with event dates.

Three years ago in the spring of 1987 a successful “Studium Generale”, or open debate, was held on astrology at the University of Groningen. Yet beforehand there had been complaints from both sides. Scientists objected that astrology was unverifiable. Astrologers felt that speakers would be stacked against astrology even though just as many astrologers as scientists were invited to speak. But the organisers wished only to have a fair debate about the merits of astrology based on facts gathered through research. This is the only way to a fair consensus. We should not be for or against astrology, we should want only to get the facts right.



The Utrecht conference in January 1991 was Michel Gauquelin's last public appearance before his death in May 1991. He is at the lectern praising the latest issue of *AinO*. Attendance was about 100.

For a proper understanding of this present conference we should consider its organisation as well as its contents. The organising committee consists of four bodies. (1) Skepsis, the Dutch skeptics, based in Utrecht. (2) SREF, the Foundation for Study and Research of Environmental Factors, based in Wageningen. (3) NVWOA, the Netherlands Society for the Scientific Investigation of Astrology, based in Utrecht. (4) *AinO*, the independent magazine *Astrology under Scrutiny*, based in Diemen, which took the initiative in organising this conference. Clearly a climate now exists in the Netherlands for serious discussion of astrology. And it is accepted that science is a way for arriving at a consensus. The result may not always be favourable to astrology, so it is good to see so many Dutch astrologers present today. Our coming together is unique for the Netherlands and sets an example for other countries to follow.

7.3.1990.2 Research needs a new focus

Graham Bates, Letter to *Correlation* 10(2), 34-36, 1990. A follow-up to the AA's 1990 Kepler Day conference.

Research has become stuck in re-working the same ideas without moving forward. Even those who claim astrology works and gives reliable results are unable to demonstrate it. So we need to do two things: (1) Abandon the current focus on personality and return to the historically claimed field, namely events, which are much more easily quantified. Thus it may be unclear whether a person is E+ or E- but not whether they got married. (2) Encourage discussion of ideas until they are refined enough for testing. Perhaps *Correlation* could provide a forum for such discussion. Without a forum many possibilities for advancing research will be lost. Not a

reduction in standards but a widening of possibilities. **Comment** Under the editorship of Rudolf Smit a forum was duly adopted by *Correlation* in 1994 and has appeared ever since in three issues out of four. But a before-and-after comparison reveals much the same picture of research stuck in re-working the same ideas without moving forward (ie without producing results that are replicable and useful in everyday practice), even though the testing of events is quite common in astrological research generally, see 7.4.

7.3.1991.1 Utrecht conference report

Bert Terpstra, *AinO* 6(1), 2-5, 1991.

The conference *A Critical Look at Astrology* was well attended by about 100 people. The first speaker was Dr Geoffrey Dean (Perth Western Australia), who presented the case for and against astrology using several hundred colour slides and much humour. The case against astrology was the lack of empirical support for astrology's claims. The case for was that astrologers are generally warm and caring.

The next speaker was Michel Gauquelin, who summarised his 40 years of work on planetary effects. He divided the sky into 12 sectors (inner circle) or 36 sectors (outer circle). The sectors that planets tended to favour or avoid were called key sectors or plus zones.

Next was Professor Dr Suitbert Ertel, whose careful re-analyses of Gauquelin's data over six years had confirmed Gauquelin's findings. His cluster analysis of eminent professionals showed a striking similarity between the sortings by humans and by planets, which should be strong encouragement to continue investigations. Next was Professor Dr Cornelis de Jager, world-famous astronomer and skeptic, who explored possible natural explanations (ie various artifacts) for Gauquelin's results. Next was psychologist Dr Jan van Rooij, who focused on self-attribution as an explanation for astrology-like effects.

The conference ended with the speakers answering questions from the audience. The backgrounds of the speakers made for a good understanding of the issues. Nevertheless there were occasional discrepancies, for example between Dean (saying that effect sizes were too small to be useful) and Gauquelin (drawing diagrams showing what seemed to be large effects), which would not have arisen had the underlying approaches been better explained. Otherwise the proceedings were very well organised. A survey by questionnaire indicated that the audience consisted of equal numbers of believers and nonbelievers, so hopefully the conference has helped to bring them closer together. If it has then the conference can be called a big success.

Comment Gauquelin's diagrams (as in 6.4.3) greatly magnify small effect sizes.

7.3.1991.2 Astrologers talk with skeptics

Wout Heukelom, *AinO* 6(2), 1-8, 1991. van Assem et al *AinO* 10(1), 6-8, 1995. The Utrecht conference early in 1991 inspired talks between skeptics and astrologers at the third EuroSkeptics Congress of October 1991 in Amsterdam, and at a Maastricht symposium in October 1991, and a 1992 NGPA survey of its leading members (19 responses).

At the Amsterdam Congress, astronomer Professor Dr Cornelis de Jager, science journalist Carl Koppeschaar, and geneticist Dr Piet Jongbloet suggested that Gauquelin's Mars effect could be an artifact of astronomical motions and natural rhythms in birth rate. Françoise Gauquelin and Professor Suitbert Ertel advised that such interactions had been recognised by the Gauquelins, so they were of no consequence. (Later simulations in 1992 confirmed this was correct.)

At the Maastricht Symposium, organiser Ben Thomassen reviewed the depressing results of modern research that were being ignored by most practising Dutch astrologers, suggesting they were living in the mental fantasy world so well described by Australian researcher Austin Prichard-Levy, then owner of Australia's largest computerised chart calculation service:

I often get the feeling, after talking to astrologers, that they live in a mental fantasy world, a kind of astrological universe where no explanations outside of astrological ones are permissible, and that if the events of the real world do not accord with astrological notions or predictions, then yet another astrological technique will have to be invented to explain it (*Australian Astrologers' Journal* 6(3), 19-23, 1982:20).

This situation was discussed by Dutch astrologers Wim van Dam and Karen Hamaker-Zondag, former astrologer Rudolf Smit, psychologist Jan van Rooij, astronomer Vincent Icke, physicist Henk Hagebeuk, and the audience. But with little progress because astrologers still think that science is unfit to deal with astrology. Wout Heukelom submitted a list of Ten Commandments for astrologers, essentially “be informed and be honest”. This too made little progress. There is hope of a jointly-signed request for newspapers and weeklies to label their horoscope columns with a disclaimer saying they were for entertainment only and had no basis in fact.

[In 1984 a similar attempt was made by skeptics in the USA. (According to K Farnell, *Flirting with the Zodiac* 2007:Ch18, US columns in today's format had began in the early 1930s.) By 1986 0.5% of the 1200 US newspapers with horoscope columns had adopted a disclaimer, rising to 3% by 1990 and 5% by 1994. No NZ newspapers adopted the disclaimer when urged by local scientists, but one did add “for entertainment” and another two retitled them “Stars for Fun”, which suggests that disclaimers will not be adopted unless brief and to the point.]

The NGPA survey agreed that charts show a person's inner life, disposition, health, present circumstances and future tendencies, but not abilities, morals or IQ. There is an ordering principle in life (*as above so below*) but indications can be overruled by free will. A successful reading requires intuition, rapport, and conversation with the client to identify problem areas in more detail and to correct errors in the astrology. The last means that different indications by different systems do not matter. Only a few members felt that a useful reading was possible without personal contact with the client.

Comment The need for personal contact is a fairly modern idea (perhaps to decrease the chance of disconfirmation?). For example in 1931 Evangeline Adams, the most famous US astrologer of her day, asked “Is it any advantage in preparing a horoscope to see the subject?”, and replied “Absolutely not! If anything it is a disadvantage, because it allows the personality of the person who needs help to come between me and the mathematical calculations from which that help must come” (*Astrology for Everyone* 1931:220).

Your Questionnaire dealing with Astrology and God

PLEASE COMPLETE &
RETURN AT ONCE TO
Roger Elliot
The Manor
Cossington
BRIDGWATER
Somerset TA7 8JR
May 1993

7.3.1993.1 Attitudes to God

Roger Elliot. A questionnaire inserted as a flyer in *Astrological Journal* 35(3) with results reported in 35(5), 280-290, 1993. Typical of Elliot's practicality, it was perhaps the only one of its kind. It began:

This is a brief survey of astrologers' beliefs, writes Roger Elliot on behalf of the Astrological Association.

Where do we place astrology – as a craft or gift, a science or religion? Do we see a God behind our study of the heavens? Is astrology a moral message or a blind force of nature? As you answer, please don't fuss about the precise words used in the questions. Broadly speaking, religion = spirituality = supernature. God = any kind of unifying creative force in the universe. Like me, you may want to tick several boxes for each question. If so, force yourself to pick the answer that suits your overall attitude. Remember, there is no correct way to complete this survey.

Elliot's 28-item multiple-choice questionnaire was completed and returned by 288 readers, perhaps a fifth of the total. Most were mature age (35% 25-44, 43% 45-64, 22% 65+), 60% were female, and only one-third were strictly amateurs. For them astrology took on the role of a personal religion. They were seeking a workable philosophy and awareness of a spiritual dimension, but had virtually no desire to integrate within an astrological religion. Elliot was one of the few big-name astrologers who felt that scientific respectability was important if astrology was to advance, so his questions often went beyond attitudes to God, providing insights unmatched by other questionnaires. Here are the responses. Numbers are % of N=288:

Your interest in astrology. What role does astrology play in your life? 30 very important, 61 significant, 8 quite interesting, 1 not very important. How do you believe astrology works? 10 physical effect on embryo, 5 trigger on mother at birth, 54 synchronicity, 31 symbolic truth. How should astrology be classified? 33 a science, 17 a psychology, 26 an art, 24 a spiritual activity. How does astrology link with Tarot or I Ching? 35 broadly similar, 65 quite distinct. What keeps you interested in astrology? Half of those who saw astrology as a spiritual activity picked “an exploration of the soul”. Most popular with the rest was “the truth”, rather than “an aid to practical living”. What kind of astrologer

are you? 8 full-time professional, 34 part-time professional, 26 amateur but would-be professional, 32 purely amateur. *If professional, what other services do you offer besides astrology?* 13 occult services (Tarot etc), 20 psychotherapy, 9 physiotherapy/healing/etc, 14 business services (eg financial, vocational), 44 nothing else or just teaching. *Yes, astrology can be taught. But how do you view good astrology?* 63 a craft improved by experience, 26 a craft improved by intuition, 11 ultimately an unteachable gift. *How do you feel about various types of astrology?* 57 happy about them all, 15 happier with "psychic" astrology, 28 happier with "scientific" astrology.

Your religious beliefs. *What was your childhood upbringing?* 70 conventionally religious, 7 unconventional eg New Age, 23 non-religious. *Have your views changed as an adult?* Conventional upbringings tended to become less religious, non-religious more religious. *Has astrology moulded your adult religious views?* 37 a great deal, 34 somewhat, 29 not really. *Do you believe some kind of God exists?* 78 yes, 15 perhaps, 7 no. *What description of God is closest to your beliefs?* 85 the creative force behind nature, 3 a personal friend and comforter, 6 a moral force, 6 a historical myth. *Do you feel a need to worship your God?* 30 frequently, 26 occasionally, 44 no. *How do you respond to other religious beliefs?* Not reported but about two-thirds tolerate them. *How do new scientific discoveries affect your religious beliefs?* 2 you ignore awkward facts (Elliot thought this was unbelievably low because "my experience tells me that few astrologers are ready to confront new scientific discoveries" so he saw the next response as "plumping for the soft option"), 85 facts must coexist with faith, 6 change your faith to suit facts (a notably low figure that he "can well believe") (p.288). *What is your religious niche at present?* 27 Christian, 10 Buddhist, 13 New Age, 7 non-religious, 9 miscellaneous, 25 unclassified.

Astrology and religion. *Does astrology make you think God is:* 57 more likely (but 14% of these had earlier maintained that astrology had not moulded their religious views), 3 less likely, 40 no difference. *How do you think of planetary forces?* 38 aspects of a single God, 9 Gods themselves, 23 expressions of human psyche, 30 an impersonal physical energy. *Have you worshipped, or prayed to, planetary Gods?* 7 often, 17 occasionally, 76 never. *Does astrology suggest your life is predestined?* 26 to a large extent, 62 to some degree, 12 no (freewill triumphs). *Do you see a link between astrology and karma?* 44 yes (intimately connected), 45 perhaps (an intriguing idea), 11 no obvious link or untrue. *How do you view astrology as a moral force?* 24 yes (God's encouragement for us to behave better), 76 no (an impartial force to which we respond with freewill). *How do you link astrology with evolution?* 25 strongly (the world evolves under planetary care), 50 possible (the world and planets evolve together), 25 not much (astrology is cyclical not evolutionary). *How do you encourage others to view astrology?* Responses were not reported. *Will astrology ever help to prove that God exists?* 30 yes hopefully, 70 probably not. *Are you ever superstitious about astrology?* 5 quite often, 31 occasionally, 64 no.

7.3.1993.2 9th AA International Research Conference

RH Smit, *Correlation* 12(2), 5-19, 1993. Smit was then the editor of *Correlation*. What follows is a summary approved by him.

Once every three years in Britain the *Urania Trust* and *Astrological Association* organise an international conference that is solely devoted to research into astrology. To my knowledge no other astrological organisations have ever initiated such conferences. But most astrologers seem to dislike research into astrology, a dislike often intensified if the word *scientific* appears, because its results are often negative; or if seemingly positive they are either flawed or virtually useless in practice. For example the size of the Mars effect is so small that no astrologer could base useful predictions on it. But whatever the outcome of research, astrology can only benefit from it. This year's conference was held over the weekend of 13-14 November at the International Student House off Great Portland Street in London. A well-chosen venue, although there were problems due to noise from the street and from ventilation fans. The lectures were very interesting and the atmosphere as well as the food was excellent. Altogether about fifty people attended, a mix of research-minded astrologers and researchers interested in astrology. [From Smit's introduction]

The first speaker was Professor Peter Roberts (UK). Since 1991 his research group has been developing a questionnaire for measuring a person's "planetary characteristics", the degree to which each one was Martian, Jupiterian, Saturnian, and so on. The high scorers in a sample of 78 subjects tended to have the relevant planet in Gauquelin key sectors, which was true for all planets except Uranus. This questionnaire is potentially a powerful tool for astrological research [for more see end of 7.5.1986.1]. Also in 1991 he launched his time twins project using volunteers born on one of six days during 1934-1964, with results to be published in 1994 *The Astrology of Time Twins*. [See 8.7.9]

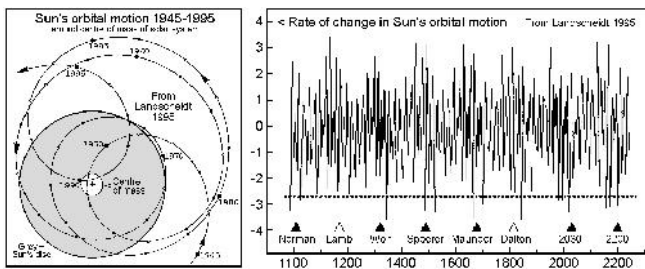
Former German high court judge and now full-time researcher Dr Theodor Landscheidt gave an overview of his work on the golden section $(\sqrt{5}-1)/2 = 0.618$, where $1/0.618 = 1.618$, so a line thus divided has the ratio larger/smaller = whole/larger. The sun's movement about the centre of mass of the solar system, due to the gravitational effects of the giant planets, displays a five-fold symmetry related to the golden section. The golden section is not just an aesthetic principle (in classical aesthetic theory it is held to be uniquely pleasing to the eye as in the design of Greek temples), it also points to a fundamental influence that can be found everywhere in the solar system: in sunspot cycles, the solar wind, solar eruptions, climate variations, rainfall, hamster activity, incidence of murder, circadian rhythms, the frequency of international battles, uprisings and revolutions, economic cycles, and mathematical Julia sets. It also governs the diurnal cycle and explains why Gauquelin key sectors are where they are and how the patterns can be extended to include the Sun, Mercury and outer planets. Finally, a complete set of aspects can be derived from the golden section that prove valid in both the diurnal and zodiacal circles when subjected to statistical tests; they also make some degrees more prominent than others.

Comment Smit notes that Landscheidt's work needs expert assessment before judgement is possible. One was later provided by Suitbert Ertel, *Correlation* 16(1), 32-39, 1997. Its abstract reads: "Dr Theodor Landscheidt claims to have discovered effects by Mercury, Neptune, Uranus, Pluto and the Sun on birth distributions of Gauquelin professionals. His result, however, a smoothed cyclic curve, was replicable by random numbers. Landscheidt also holds that Gauquelin planetary effects obtain their pattern by the "golden section", where peaks and troughs of birth distributions are allegedly governed by the proportions 0.382 and 0.618. It was shown that many other proportions, eg 0.202, fit better than the "golden" proportion, but even the best-fitting "non-golden" proportions lack explanatory import (p.32).

Ertel concludes: "Landscheidt holds that cosmic evolution is guided by unique numbers which, if true, would be one of the most outstanding discoveries of our times. It is recommended that the author replaces his present tools by more rigorous procedures. In my view, his message will remain unconvincing as long as data selection and analysis is based on arbitrary decisions" (p.38).

This is followed by Landscheidt's response, which begins: "In my view, it [Ertel's argument] is convincing only in so far as it is a warning example of how scientists should not work. I merely find superficial argumentation, gross mistakes, overestimation of the importance of isolated technical results, neglect of evidence, and misleading statements apparently based on nothing but bias" (p.40). Landscheidt ends by noting that "Nearly all of these results and many new ones proving the all-encompassing organizing function of the Golden section will also be published in ... *Global Warming or Little Ice Age*, in CW Finkl (ed), *Holocene Cycles* 1995:371-382" (pp.46-47).

But that highly technical paper (available online) does not feature the Golden Section, only Landscheidt's prediction that, contrary to the Intergovernmental Panel on Climate Change's views on man-made global warming, "within the next hundred years a long period of cool climate with its coldest phase around 2030 is to be expected" (abstract).



Left: His prediction is based on changes to the Sun's motion (due to gravitational effects of the planets) around the centre of mass of the solar system. **Right:** Each time a negative extreme goes below the dashed line, a period of unusually weak solar activity is observed plus "ice age" conditions. So climate is more closely linked to solar activity than to human activity. The next such periods occur around 2030 and 2200. Solid triangles = two consecutive extremes, open triangles = one.

There was no follow-up in *Correlation*. By 2019 satellite data was supporting Landscheidt's prediction of no global warming (the support for the IPCC's view came from computer models, not actual data). **End of comment.**

Graham Bates (UK) spoke on astrology and financial markets. The UK stock market 1946-1992 shows a harmonic of the solar cycle with a strong rise at the start of every fourth year since 1947 eg 1971, 1975, 1979, 1983, 1987, 1991. This January rise has failed on twelve occasions since 1946, but never in the fourth year. The Moon-Jupiter cycle and some other planetary cycles show a similar harmonic effect. Square aspects between Saturn and Pluto seem to correlate with falls in the market when tied to a triggering effect of Sun-Moon aspects, but the falls do not occur at the exact aspect or in consistent relationship to the aspect. During the 14 days before and after Sun-planet and Mars-planet oppositions and conjunctions there were often surprisingly strong effects. For example the 14 days before Sun-Saturn or Sun-Neptune conjunctions seemed to correlate with rises of >1% on 71% of occasions. But the 14 days after Mars-Jupiter conjunctions seemed to correlate with such rises on only 23 % of occasions.

Dr Percy Seymour (UK), an astronomer known for his book *Astrology, the evidence of science*, spoke on the use of mathematical modelling in astrological research. It was probably the most difficult lecture of the conference. He looked at the various mathematical models used in research and at their relationship with models based on analogies. He then briefly outlined the main features of the data that need modelling, and followed this with an outline of his own models. He concluded by discussing the criticisms levelled at his own theories in astrology.

Beth Jarram (UK) spoke on Jung's four functions of intuiting, sensing, thinking, and feeling. The first two are polar opposites, as are the last two, and one is developed in preference to the other three. Astrologer Liz Greene relates the four Jungian functions to the four elements, but without a way of assessing their relative strengths. Swiss astrologer Bruno Huber assesses their strength by weighting the planets. In a feasibility study for a PhD proposal, Jarram used the Huber approach to predict the main Jungian function for comparison with that measured by the Myers-Briggs Type Indicator. The results were encouraging. For more details see "*The Jungian Functions and the Huber Temperament Type Indicator*" in *Astrological Journal* 35(4), 236-241, 1993.

Dr Beverly Steffert (UK) spoke on the astrology of speech styles. Body state is reflected in our voice, and personality is reflected in our speech. It takes only 10-12 sentences for someone to decide whether conversation is worth pursuing or not. In all cultures dominant people speak slowly, emotional people speak fast. Timing is important, accent is not. When we speak to others we unconsciously adjust our pitches and timing so they become increasingly matched. Microseconds in timing can make the difference between being thought pushy or warm or any other attribute. All unique voices fit into three major speech styles, which her research has found to be linked with respectively Saturn-

Mercury, Venus-Mercury, and possibly Mars-Mercury. This research needs more samples of people who speak with a flat pitch, low volume, long gaps between words, and a long wait before replying back.

Professor Suitbert Ertel (Germany) spoke on the Mars effect, attracting perhaps the most attentive audience of the conference. He showed how skeptic groups (Comité Para 1976, CSICOP 1979, CFEPP 1990) had persistently failed to disconfirm Gauquelin's Mars effect, and consequently other planetary effects. Re-analysis showed that CFEPP and CSICOP used many low eminence athletes in their samples thus violating the test hypothesis, which specifically required high eminence athletes. But their combined sample (N = 1683) showed the expected eminence trend and a Mars effect that manifested despite the violated sample conditions.

Charles Harvey (UK) spoke on precise timing in the stock market. He saw the buying and selling of stock in terms of greed and fear, both related in different ways to planetary aspects. His focus was upward and downward movements on the daily scale. A switch from fear to greed might occur abruptly within one day, indicating a respective change between sentiments. Harvey referred to planetary aspects as giving "enormously powerful information". Among planets and aspects, those between the Moon, Mercury, Mars and the Sun were mentioned most frequently, but also Saturn and Pluto came in (their squares tended to depress the market). He drew no conclusions because statistical analyses had not yet been done, but he became so enthusiastic during his lecture that Graham Bates in the discussion warned the audience to also consider the risks of astro-based investments in the market.

Next came an unusual dual lecture by Dr Suzel Fuzeau-Braesch (France) and Mike O'Neill (UK) on her study of twins, and his attempt to replicate it. Fuzeau-Braesch's results were highly significant (153 hits, 65 misses), O'Neill's results were not encouraging (33 hits, 30 misses). O'Neill concluded that a larger replication sample was needed. In the subsequent discussion Suitbert Ertel pointed out that the significant difference in results meant that their samples are not drawn from the same population, so the probability of turning the present nonreplication into a replication by greater numbers is rather small. [For a detailed analysis of later results see 7.6.1992.3]

Françoise Schneider-Gauquelin (France) spoke on planetary effects in ordinary people. On the hypothesis that "it is the personality that matters", planetary effects should show up with ordinary people. She deplored unsolved problems of methodology, so she surveyed past studies with positive results, namely Marian Bollen's on five generations of farmers [N=34 see 7.6.1982.4], Beverly Steffert's on marital bliss and misery for 475 couples and 179 divorced subjects, Lynne Burmy's on 1059 lesbians, several others on collectively 1534 homosexuals, Wolfgang Martinek's on 116 Austrian drug addicts, and Anna-Maria Costa-Ribeira's on 144 Brazilian drug addicts. She concluded that the Moon seems related to domestic virtues, Venus to affection and sexuality, Jupiter to extraversion and political involvement, Saturn to introversion and sexual shyness, all in agreement with her previous results and with the planets' traditional attributes; and that planetary effects with ordinary people are as strong as with professionals. [But sample sizes were generally small, and later work has overturned this conclusion, see 6.6.9]

7.3.1995.1 Dutch philosophical views of astrology

Steef van der Wee, *AinO* 10(1), 2-5, 1995. A contribution to NGPA's study of the foundations of astrology.

Modern astrology in the Netherlands started with Dr AE Thierens in the 1900s, who was strongly based in Theosophy, as was Alan Leo in England. They both held that astrological factors are essential for all that happens on earth. More recent views do not see astrology as essential, merely as a technique to acquire knowledge. Either way, scientific tests are invalid because they cannot deal with the inner experience of astrology. **Comment** Not according to Dutch psychologist Jan van Rooij in his *Recommendations From Psychology*, see 7.7.1986.3.

7.3.1995.2 Analysis of the alt.astrology FAQ page

Collected and edited by Michael De Robertis. Originally available on Canada's York University website but is now at the end of www.skeptdic.com/astrology.html by clicking on "Analysis of Astrology FAQ Page". Professor De Robertis is with the Department of Physics and Astronomy. The long and detailed original is here much condensed.

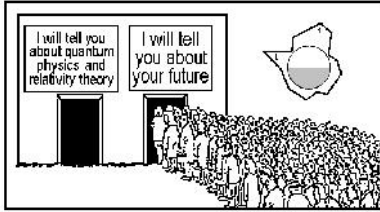
The WWW contains countless pages on the Occult and Paranormal. Part of a first-year seminar class at York University required the students to analyze the alt.astrology Frequently Asked Questions page. Of all the defences of astrology on the WWW, I found this FAQ to be the most credible and well-written. It was authored by people clearly knowledgeable in astrology and familiar with science. So I extracted the most scientifically challenging questions and asked the students: How convincing were the answers? What were their strengths and weaknesses?

The students were all first-year in a wide range of disciplines from biology to geophysics. We had previously discussed the nature of science and pseudoscience. In general, I was impressed by how well the students were able to identify weaknesses in the answers.

Question: Here are my birth data. Can someone tell me what I should do with my life?

Answer: Nobody can tell you what to do with your life. But your birth chart can give valuable insights into your personality and where there is harmony or discord.

Students' analysis: A long-standing argument against astrology has been its deterministic view of human nature. But modern astrologers have clever marketing skills. Thus "Nobody can tell you" has a nice indeterministic ring to it, apparently far removed from the idea that the stars control your life. But this is an illusion. The fundamental claim is that there are signs in the heavens and that one will benefit from recognizing and following them. Here the claim is being concealed by



marketing skills. If it were untrue then astrology would be pointless.

Question: People born within days/hours of each other can have different lives. How come?

Answer: A few minutes can make a substantial difference. But even if two people have the same chart, other factors may influence the outcome. Some people operate on a material level, some on a mental level, and a few on a spiritual level. Birth charts can manifest on any of these levels.

Students' analysis: To say that the level at which people live can be material, mental, or spiritual is the perfect "out", because it is unquantifiable, nonfalsifiable, and fuzzy enough to satisfy any potential believer. It is why astrology remains the archetypal pseudoscience.

Question: How is it possible for astrology to work?

Answer: One common explanation is synchronicity, similar to the ancient idea of sympathy between the microcosm and macrocosm. Another is currently undetected forces that emanate from the planets and influence life on earth. Whatever the explanation, it is experience that convinces people that astrology works. Its rich descriptive theory has evolved over thousands of years to provide a deep understanding of human nature.

Students' analysis: An exercise in deception, the most common (yet most invalid) technique to justify any practice. For example the term "force" has a rather precise meaning in physics, and seems to people unfamiliar with physics to lend an air of legitimacy, but when used to defend astrology it suddenly becomes nebulous and deceptive. And exactly what is a "rich descriptive theory?" A theory builds on empirically-established principles to explain a set of observations. But there is no such "theory of astrology" and it is a misrepresentation to imply otherwise.

Question: Is it "wrong" to use astrology to learn what the future holds for me?

Answer: The planets indicate only tendencies. They do not compel. They do not control your future, only you can do that. There is nothing "wrong" with learning about these tendencies.

Students' analysis: This uses words that modern people are comfortable with. But there is no middle ground. If there is advice to be had in the heavens, then our futures must be determined to some extent. Calling them "tendencies" is just another deception. And if astrology cannot control your future why bother with it? Relying on yourself is certainly less expensive.

Question: Every sensible person knows that astrology cannot work. So why do you bother?

Answer: It is impossible to rule out astrological phenomena on a priori grounds. What is currently known is not all that will ever be known. It is a mistake to buy into the current way of thinking as if it was an accurate and complete picture of the universe.

Students' analysis: This answer is basically accurate. Nobody should dismiss astrology or any other pseudoscience without carefully weighing the evidence.

Question: Why should planetary forces only have effect at the moment of birth?

Answer: Given that we do not yet have an explanation for astrological phenomena, we cannot assume that astrological correspondences are due to some "force" such as gravity. The Gauquelins found a planetary effect only when the birth was natural. Induced births prevent birth at the "correct" time, which prevents astrological phenomena from manifesting.

Students' analysis: The reason why the moment of birth (whatever that may mean) is used and not the moment of conception is that only the former can be routinely determined to the accuracy required by astrology. Contrary arguments can always be dismissed by believers

because they could claim that the nature of the "force" was guessed incorrectly.

Question: Don't you guys know that astrology depends on a geocentric astronomy?

Answer: A force exerts the same influence whether the position of the body exerting it is calculated using Ptolemaic, Copernican, Keplerian, Newtonian or Einsteinian orbital mechanics. Our use of geocentric coordinates does not imply that we think Earth is the centre of the universe!

Students' analysis: The geocentricity of the co-ordinate system is a red herring. The real issue is the difficulty of accepting that solar system objects light-seconds to light-hours away against a three-dimensional background of stars tens of light-years away can have some meaning to an individual. The difficulty arises because forces in physics depend on distance according to the inverse square law, whereas astrological forces do not. Astrologers never explain how.

Question: Don't you know astrological effects have no known causes? So they cannot exist.

Answer: All sorts of sciences are based on empirical evidence alone, with no explanatory theories available. Thus genetics was accepted as part of science before the discovery of DNA. Similarly the astrological relations that have been exploited for thousands of years may not yet have an explanation in terms of causes, at least not in the West. The Eastern vision of an interconnected universe with all its parts dancing in unison may be more in line with reality.

Students' analysis: Yes, we do not require an exact causal mechanism to recognise that an effect exists, as in the connection between smoking and lung cancer. But in case we worry about "thousands of years" failing to uncover causes that explain astrology, where "causes" may be only a Western fetish anyway, we are told the Eastern vision may be more in line with reality. So why does astrology aspire to be a science in the first place?



Comment Astrologers never explain why both **size and distance** have no apparent effect even though they vary enormously. At the size shown here, TE (Earth), JU, SA are 15, 78, 143 m from SO. To us the SO and MO are glaringly larger than the other bodies but it makes no difference to charts. Also VE varies in brightness but does not signify change. Such things put an astrology based on physics well beyond any hope of empirical support.

Question: Don't you know that tests of astrologers show they do no better than chance?

Answer: The talent of astrologers and the validity of astrology must not be confused. The failure to find an effect does not mean the hypothesis is false. It just means that evidence has yet to be found in favour of it. Evidence can support a hypothesis, but lack of evidence cannot refute it. Nor can negative results refute it, simply because our tests may be flawed.

Students' analysis: A fine attempt at misdirection. As the question suggests, controlled tests have provided no evidence that astrologers perform usefully better than chance. It is naïve to argue that all tests have been flawed. As for confusing talent with validity, one would never think of saying the same of a bona fide science. A scientific principle stands on its own, and the practitioner is irrelevant to its validity. But this is how astrology insulates itself against falsification and therefore from ever failing a scientific test, at least in the eyes of believers. One cannot have it both ways. What is astrology to be, a science or a pseudoscience?

Question: Educated people tend to despise astrology. Can their opinions be wrong?

Answer: The question is an appeal to authority, a common fallacy in reasoning. Plausibility based on current world views is a poor guide to the nature of reality. Educated people, being human, are as fallible as the rest of us in embracing particular views with undue passion. For those of us who are less than omniscient, humility is in order in any discussion of the nature of reality.

Students' analysis: Correct in principle but in practice poorly argued. In science an appeal to authority is considered irrelevant. Science isn't a democracy and never will be. Only irrational people embrace ideas shown to be false by considerable rational investigation and argument. One might believe, for example, that the moon is made of green cheese in spite of evidence to the contrary. Of course everyone has a perfect right to hold this opinion. The trouble is, this opinion is incorrect, and every legitimate scientist will say so.

Question: Why don't you recognise that the sign Aries is not really the constellation Aries?

Answer: This is due to the precession of the equinoxes. In Western astrology the signs are defined by the equinoxes, not the constellations. The question assumes that the meanings of the signs come from symbols based on the constellations. But clearly this is not the case. How could the meaning of Virgo (analytical, critical) be derived from a picture of a virgin? How could the meaning of Pisces (imaginative, idealistic) be derived from a picture of two fish? There is no necessity for tropical signs to have received their meanings from the constellations.

Students' analysis: This is a neat solution but does not overcome astrology's fundamental nonfalsifiability (see second question above). So far as we are aware, no astrophysically important objects move precisely with the equinoxes, yet this is required to explain "forces" that imprint each one of us at birth. The only reason to choose the tropical zodiac over any other zodiac is to persuade astronomical illiterates that astrologers have successfully dealt with the various criticisms raised by the scientific community.



Comment The flaws uncovered by the students (deception, misdirection, nonfalsifiability) are true enough but effectively hide the underlying issue, which is easily seen by inventing an answer that any working astrologer would in principle agree with, namely:

We know that astrology works because we have tried it. You haven't. We have been there. You haven't. Obviously you know nothing about it. We trust our experience. Your ignorant questions are a massive waste of everyone's time.

The underlying issue is thus *the validity of experience* – unfortunately not an issue raised by the questions and barely mentioned in the answers – so it is not analysed by the students. If it had been, and they were aware of the invalidity of experience without controls, their analysis of alt-astrology's FAQs could have been shorter and more devastating, perhaps along the lines summarised in 9.11. Unfortunately the above exercise was not repeated with a new class and there was no direct feedback from working astrologers

7.3.1995.3 Survey of opinions on scientific tests

Leon van Assem, Wil Rozenbroek and Steef van der Weele, *AinO* 10(1), 6-8, 1995.

In 1992 NGPA, the Dutch Society of Practising Astrologers, surveyed the philosophical opinions of its leading members and received 19 replies. Concerning scientific research into astrology, the views they agreed on were as follows: The birth chart shows a person's inner life, disposition, health, present circumstances and future tendencies, but not abilities, morals or IQ. Not every chart indication will unfold. Indications can be overruled by free will. There is an ordering principle in life (*as above so below*) that is thought to be working during an astrological consultation. A successful consultation requires intuition, rapport, and conversation with the client to identify problem areas in more detail and to correct errors in the astrology. The last means that contradictory indications by different systems do not matter. Only a few respondents felt that chart interpretation without knowing the client was possible and useful.

Comment The need for personal contact with the client is fairly modern (perhaps to increase nonfalsifiability?), for example in 1931 Evangeline Adams, the most famous US astrologer of her day, asked "Is it any advantage in preparing a horoscope to see the subject?", and replied "Absolutely not! If anything it is a disadvantage because it allows the personality of the person who needs help to come between me and the mathematical calculations from which that help must come" (*Astrology for Everyone* 1931:220). At least astrology has moved with the times.

7.3.1999.1 Science as seen by French astrologers

Suzel Fuzeau-Braesch. Science seen by astrologers, a survey in *Comment démontrer l'astrologie* 1999 pp.309-315.

Most French astrologers are honest practitioners for whom astrology simply "works" and poses no scientific problems. But others are surrounded everyday by science. So how do they explain astrology? Some use classical notions such as gravitation, others use more fashionable notions such as fractals, even though their assertions are without a demonstrated scientific foundation.

Still others reject science while relying on esoteric ideas, and here we can take as an example Solange de Mailly-Nesle, a famous French astrologer who founded the Agapé school in 1989 that represents much current French thought in astrology. She writes:



I think that we must go beyond the opposition between science and astrology. This is a false debate. It is a conflict that belongs to the past (*L'Astrologue*, No 119).

Solange de Mailly-Nesle, b.1949. Nesle is pronounced Nell.

Which may seem reasonable. But she then claims that science and astrology are totally different. In astrology man and his world are not separated but are united, whereas science reduces man to a statistical object that misrepresents the symbol. In other words, astrology rests on the symbol, whereas science and statistics are anti-symbol.

But at no time do we really understand this esoteric symbol. If observers are never separate from the object they study, nothing could ever be objectively proven. The very notion of an objective fact would be permanently in doubt. But people have every right to adopt concepts that are more than 3,000 years old, as others have the right to reject them.

For example de Mailly-Nesle notes that Aries is the beginning of spring, which allows her to build up the symbolism. Too bad for those in the southern hemisphere where the seasons are reversed, and of course for those with scientific minds. In fact confusion for both astrology and science come together in post-modernism, an irrational esotericism which leads in every case to a sterile impasse. In this impasse you don't need to know what you are talking about; and obscurity is a sign of profundity. Only true science offers an escape.

Comment Which is probably why de Mailly-Nesle is against it. After all, why have science when you can have cherished beliefs? Interestingly de Mailly-Nesle's 1981 book *L'astrologie: L'histoire, les symboles, les signes* has this quote allegedly from Albert Einstein (1879-1955):

Astrology is a science in itself and contains an illuminating body of knowledge, It taught me many things, and I am greatly indebted to it. Geophysical evidence reveals the power of the stars and the planets in relation to the terrestrial. In turn, astrology reinforces this power to some extent. This is why astrology is like a life-giving elixir for mankind.

which, in response to a personal query, she said was taken from a 1950 textbook *Manuel d'astrologie* by the late Swiss-Canadian astrologer Werner Hirsig. She had received many queries about the source of the quotation, so she had called Hirsig's widow in Canada for an answer, but Mrs Hirsig did not know. She then checked Einstein's writings, as had others, but found nothing. So she feels that Hirsig made a mistake and warns against using the quote. Others had found nothing to suggest that Einstein had any interest in astrology. Also, the style differs from that of authentic Einstein sayings:

Accordingly, until the quote is authenticated, it should be ignored lest it add to the blight generated by Newton-Halley, Evangeline Adams, and other famous-but-wrong quotes (from *Correlation* 11(1), 35-36, 1991:36).

That was in 1991. In 2007 the French-Canadian skeptic Denis Hamel made an independent and very thorough follow-up in *Skeptical Inquirer* 31(6), 39-42, 2007. He discovered that Mailly-Nesle had confused Hirsig's 1950 book *Astrologie moderne* (which did not contain the quote) with Hirsig's 1965 book *Manuel d'astrologie* (which did contain the quote and was a reprint of his 1950 book with a new title and a new preface). After much work he was able to conclude that Hirsig was not the original source of the quote (according to André Barbault, Hirsig was an honest astrologer quite unlike the numerous crank ones), which he had traced to the 1960 edition of the annual German almanac *Huters astrologische Kalender* that Hirsig had apparently taken seriously. It was not in previous editions. Along the way he found the false quote was on more than a hundred astrology websites in English, French or German, so he tried contacting their webmasters:

Many among them did not even reply to my messages. Others did with classic arguments against "official science that

cannot explain many esoteric phenomena", for example citing the Heisenberg Uncertainty Principle [which of course science can explain very well]. A French astrologer even told me the following: "If this sentence is going around the world with Einstein's signature, it is proof that he at least meant it" (p.41).

He noted that Einstein had no interest in astrology, for example *astrology* does not appear in the index to a multi-volume collection of his unpublished letters and papers. But he still had a negative opinion of it as shown by this comment in his introduction to Carola Baumgardt's 1951 book *Johannes Kepler: Life and Letters, with an Introduction by Albert Einstein*:

The reader should note [Kepler's] remarks on astrology. They show that the inner enemy, conquered and rendered innocuous, was not yet completely dead (p.13).

Astrology was Kepler's "inner enemy" because its imaginings conflicted with Kepler's insistence that truth be decided by the observed facts, see 1.6.2. Hamel concludes that most likely this may be the only occasion that Einstein ever used the A word (p.41).

7.3.2001.1 Comments from Current Science on Vedic Astrology

In 2001 the University Grants Commission (UGC) in India decided to provide funds for courses in Vedic Astrology at Indian universities. Within nine months 45 of India's then 300 universities had applied for grants of 1.5m rupees (then about \$30,000) to establish departments of *Jyotir Vigyan* (science of astrology) offering graduate and postgraduate qualifications. Of these 20 were accepted. Funding covered the cost of 5 teaching posts (professor, reader, lecturers) plus a library, computer lab and a horoscope bank. Total cost was about 0.5% of the UGC's annual budget.

But nearly two decades later the idea has not proved to be a huge success. No top-ranked university such as Calcutta or Nehru have started astrology departments, and by 2015 fewer than 40 such departments existed in the now nearly 800 universities (although perhaps half of these were affiliated colleges too small to qualify anyway). Of these only 5 were specifically for *Jyotir Vigyan*, with most of the rest being for related topics such as the (Sanskrit) *Jyotisha*.

In 2001 the UGC decision had provoked outrage and controversy among Indian scientists. Three attempts to stop it in the Indian high court were dismissed on the grounds that it was the duty of universities to satisfy the thirst for knowledge, teaching astrology did not qualify as the promotion of religion, and in any case astrology was already taught in 16 universities as part of other courses such as Sanskrit. And in countless Indian schools of astrology as well.

In 2001 a total of thirty comments appeared in the Indian science journal *Current Science* (similar to the British *New Scientist*), most of them from scientists in university departments or research institutes. About half dismissed astrology as pseudo-science, the rest were equally divided between "decisive tests were needed" and "there was nothing wrong with funding something that the majority of Indian people believed in". Of those who referred to tests, none seemed aware of the full extent of Western research findings. Here are 13 of the 30 comments, condensed on average to one sixth of their original length, with the journal reference.

Editorial – The astrology fallout

The generally placid academic science community in India has been stirred into unprecedented ferment by the UGC's decision to set up a few departments of Vedic astrology in Indian universities to "provide exclusive teaching and training in the subject leading to certificate, diploma, undergraduate, post-graduate and PhD degrees". The new departments will have Professors, Readers, Lecturers, Library Attendants and Computer Operators, with a possible "non-recurring" budget of Rs 6 lakhs for an "observatory" and Rs 5 lakhs for a "computer lab and horoscope bank" [then about \$US14,000 and \$US12,000]. The UGC's assertion that Vedic astrology is a science has stirred a hornets' nest. Astrology has been here for centuries. Despite overwhelming scientific evidence that planets at the time of birth do not dictate the course of human affairs, astrology will be with us in the foreseeable future. The present battle is not between astrology and science but between the UGC (which is charged with the responsibility of fostering higher education) and the scientific community. The UGC's view that astrology needs to be promoted as a science in our universities is a pointless initiative that will further erode the credibility of our institutions. Vol 80(9), 1085, 2001

UGC decides to set up departments of Vedic astrology in universities

The UGC has actually accepted that the study of time is best done through Vedic astrology. So if you want to know the age of the earth or the universe just consult the appropriate Vedic texts. I hope no self-respecting university would start such a department. From Y.Pal, All India Council for Technical Education, New Delhi. 80(9), 1087, 2001

Astrology and science – in response

Funding agencies in India, in their unfortunate moments, have supported pseudo-scientific projects such as the effect of music on plants, and geomagnetism on human health, with disastrous consequences. It is not lack of open mindedness or intolerance that prompts us to criticize allocation of resources for astrology or palmistry. The opposition is based on sane scientific sense. From M.R.N.Murthy, Molecular Biophysics Unit, Bangalore. 80(9), 1088, 2001.

Vedic astrology

The issue is whether or not Vedic astrology should be recognised as a valid branch of science by bringing it into the mainstream of education in the country. I believe that the UGC has a responsibility to verify the correctness of the information that it proposes to impart to students. In the absence of any proven scientific validity of Vedic astrology,

belief in it is a matter of blind faith. So the day will not be far off when the present Indian Administrative Services will be replaced by Indian Astrological Services, the job of its officers being to advise the government in their decision making based on planetary positions rather than on the merits and demerits of the issue in question. From P.Khare, Department of Physics, Bhubaneswar. 80(10), 1250, 2001.

Astrology, navratnas and gemmology

Hindu astrology assigns nine gems to the nine major planets (navratnas). Despite the progress in science and technology, there is a great demand for *stones that bring luck*, or *stones that pacify a planet positioned unfavourably in one's horoscope*. Such are the facts of the Indian gem market. Astrology is a part of gemmology, and gemmology is a part of mineralogy (science). From R.V.Karanth, Department of Geology, Vadodara. 81(1), 8, 2001.

Astrology – Hype, hope and future

Almost 60% of the Indian population prefer to go to an astrologer for many events from birth to death. Astrology guides most of them in their distressed moments. This shows the belief Indian people have in the subject irrespective of caste, creed, race and region. Nowadays most of the dailies and magazines, irrespective of geographical area, publish astrology columns. Almost all ISPs on the internet offer astrology, tarot cards, numerology, etc. Most of the successful industrialists and politicians believe in astrology. Our epics tell us that most of the wars were won by astrology, and most of the temples are built according to vaasthu and astrological principles. It is our responsibility to praise the science of astrology for surviving over the centuries. The UGC proposal would result in developing quality astrologers to satisfy the masses and to get rid of quacks. If not successful, this proposal would also die in due course. From S.Seshadri and K.Kathiravan, Entomology Research Institute, Chennai. 81(1), 8-9, 2001.

Astrological education

Astrology is not a science. Nevertheless it provides a psychological prop to many human beings all over the world. Weddings in many Hindu families, including those of some scientists, take place only if the associated zodiac signs and rasis match favourably. And of course, astrology is a life-line of hope for most of our politicians. If people are willing to pay, it makes a case for introducing astrology as a social science course. But not if the funds are diverted from other pressing social needs. Experience shows that protests from individuals outside the power circle have no effect. An organized group effort is needed. From K.L.Chopra, New Delhi. 81(2), 139, 2001.

More on Vedic astrology

As correctly brought out by Vasant Sathe in his recent letter to the *Times of India* (19 May 2001) there is nothing in the Vedas about astrology, so the prefix Vedic is not justified. Nevertheless it is time the scientific community recognised Indian traditions and gave a scientific verdict after meticulous studies and avoided merely looking through the lens of the Western world. From C.Devakumar, Delhi. 81(2), 140, 2001.

Astrology and the methodology of science

How to decide whether astrology could be treated as a science? The scientific method requires that the hypothesis be relevant to the phenomenon to be explained, be compatible with well-established observations, be testable and reproducible, be able to predict things yet unknown, and take Ockham's Razor into account (the simplest explanation is the most likely). Astrology does not conform to the first, where astrologers cannot explain why only a few among zillions of heavenly bodies should be relevant, nor why predictions by astrologers can contradict each other. So the other conditions become irrelevant. From S.R.Valluri, Indira Nagar, Bangalore. 81(2), 140-141, 2001.

Futile struggle against Vedic astrology

Most of us would consult an astrologer before we fix a date for the wedding of our children. So the struggle against Vedic astrology is probably futile. More objectionable is the emphasis on Vedic astrology. What about, for example, Mughal astrology? From N.Gautham, Department of Crystallography and Biophysics, Chennai. 81(2), 141, 2001.

A note on Jyotir Vigyan

Jyoti represents the primeval light of Brahma. *Jyotir Vigyan* is founded on recognition of the supreme conscious Brahma, unity of the universe encompassing sentient and non-living beings. The prevalent system of prescribing rituals to change a planet's effect appears to be a crude and vague form of exercising free will. From S.C.Tiwari, Institute of Natural Philosophy, Varanasi. 81(2), 142, 2001.

Astrology or arrant trash?

If we look around, we see that the mere chanting of mantras over the years could neither help mobilise food for half a billion population nor help in making a super highway. The fundamental axiom of astrology implies that divination is at the core of astrological knowledge. And planets moving with divine energy are analogous to the motion of divine creations including human beings. But if we are a direct creation of God, what happens to our objective investigation of evolution since the formation of protoplasm? Either we accept astrology and discard evolution, or we accept the reverse. From R.K.Mandal, Department of Metallurgical Engineering, Varanasi. 81(2), 144-145, 2001.

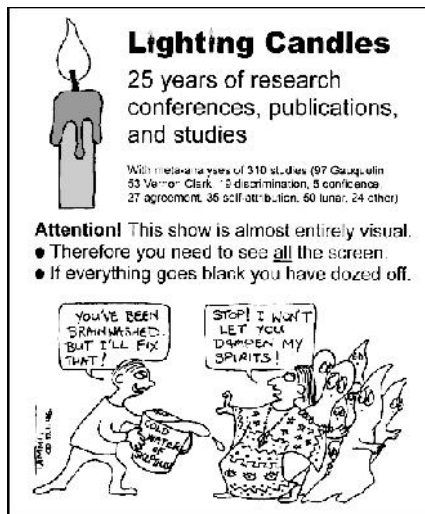
Astronomy and astrology

When I tell people that I am an astronomer, they ask me immediately whether I can predict their future from their horoscopes. On receiving a negative reply, they look down upon me as a man of no consequence and wonder what kind of astronomer I am. It is not their fault, because most persons, including the well-educated ones, do not know the difference between astronomy and astrology. ... Many people will agree with me but will still consult astrologers, even though most forecasts are wrong. One can look up the forecasts published in various newspapers to verify this.

People visit astrologers in the same way that they visit many doctors and get partially cured just by talking with them or by taking their fake medicines. So astrologers are more like psychiatrists than anything else. Once we realize this, we would rather face our problems rationally and courageously than consult an astrologer. So the UGC proposal to introduce astrology as a subject in science faculty is a step in the wrong direction. It amounts to replacing truth by untruth and light by darkness. From K.D.Abhyankar 81(2), 158-159, 2001. Based on his article published in *Society and Science*, a journal of the Nehru Centre, 5, 16-24, 1982.

Tuition fees and starting salary for an Indian BA in Astrology

In January 2019 the average annual tuition fees for a three-year course with yearly exams leading to an Indian BA (Astrology) degree ranged from Rs 5k (distance learning) to Rs 200k (private institutes, Rs 100k in 2019 was about \$US1500). Candidates must have a higher secondary school certificate. The average starting salary for a graduate was Rs 300k–1000k (numerologists about a third more, palmists about a third less). In India there are dozens of recruiting companies. *Typical job description:* Casting horoscopes at birth or later to recount past; forecast future events and conditions; determine auspicious times for various activities such as inaugurations, marriages, journeys and religious and other ceremonies; studying the influence of the constellation of the stars and of other phenomena on a person's life and situation. (From <https://collegedunia.com/courses/bachelor-of-arts-ba-astrology>)

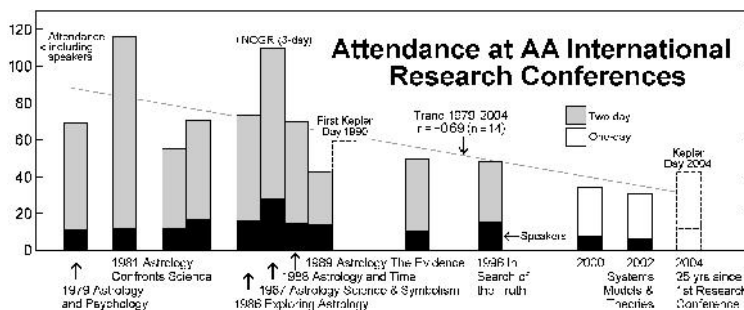


7.3.2004.1 Lighting Candles: 25 years of research conferences

Geoffrey Dean and Arthur Mather, a talk presented to the AA Kepler Day 20 November 2004. Twenty-five years of research conferences is an occasion to be celebrated, but no report of the Day appeared in *Correlation*, and only one of the presentations (this one) paid any attention to the developments in research over 25 years. The 30-minute presentation was illustrated by thirty fast-moving overhead transparencies, hence the need for two presenters.

The authors reviewed early conferences, numbers of publications, promising areas for research, pictures of key researchers (Addey, Harvey, Gauquelin, Ertel, and others), surveys of astrologers, approaches in Vernon Clark tests, and the use of astrology in counselling. The first key finding from research is that what matters is the astrologer, not the astrology. The second key finding is the unreliability of experience. Hands up those

who think it is preposterous to question the reliability of personal experience [about half the audience put their hands up]. But for the present celebratory Kepler Day the most disappointing finding is the decline in attendance at research conferences. In the 1980s more than 5% of the AA's membership attended. In 2002 it was less than 2%. Perhaps the decline is because research has failed to address anything useful. Yes, those hundreds of research studies in *Correlation* and other journals have not made the slightest difference to everyday practice. Something has to be wrong. Will the future bring any improvement? **Comment** Not so far.



More conferences were held but only those where the attendance was recorded in *Correlation* are shown here. The attendance is erratic but a clear decline over the years is evident, matching the general decline in research itself. Attendance since 2004 has been maintained only by increasing the standard astrology content at the expense of empirical evidence and the technicalities of research.

7.3.2007.1 Danish-UK-US astrologer attitudes towards science

Kirstine Munk. PhD thesis *Signs of the Times: Cosmology and ritual practice in modern Western astrology* (University of Southern Denmark 2007). What follows is from her section on attitudes.

Munk talked to astrologers in Denmark, the UK and USA and discovered a highly variable attitude towards science:

with the exception of a few debatable examples, astrological claims have generally been refuted by scientific studies ... and by philosophers of science ... However, the difficulty of finding space within academia for astrological reflection is creating a countermovement among academic astrologers: Science is here considered dangerous if it is not aimed at personal, spiritual growth (p.111) ... some astrologers react with curiosity, others with indifference, and yet others point to what they perceive as the limits of science (p.115).

7.3.2007.2 Updating a 1983 German consensus about astrology

Edgar Wunder and Ulrike Voltmer. *Zeitschrift für Anomalistik* 7, 9-79, 2007. In 1983 Peter Niehenke, then president of the DAV (Association of German Astrologers), obtained agreement among the various German-speaking astrology groups on seven basic statements about astrology. But today more than 20 years later, research into astrology has greatly progressed, controversies have evolved, and astrologers' viewpoints have changed. So 40 leading astrologers and 12 critics were asked to suggest updates (10 and 7 replied). Their most conspicuous feature was sheer wordiness, which may be why the authors make no attempt to summarise and compare them. What follows fills the gap. But be aware that viewpoints continue to evolve, so some of the 2007 versions described here may have changed since then.

First here are brief summaries in English translation of Niehenke's **original statements** in German from 1983, which summaries he has confirmed "get the central issues quite well":

1. Astrology says the heavens at birth are meaningful.
 2. The meaning rests in the whole chart and can be read by astrologers.
 3. Astrological claims have been proved by scientific research. [No longer true]
 4. The actual mechanism is unknown. Seasonal effects are not enough.
 5. There are various techniques, all needing consensus and verification.
 6. Experience shows that tropical is generally superior to sidereal.
 7. The birth chart indicates potential, not actuality, and can be a guide throughout life.
- Its interpretation is based on symbolism.

Comments by ten practitioners or supporters

Some commentators seem curiously unspecific and unfocused:

Rolf Baltensperger is president of Switzerland's largest association of astrologers.

Astrology is shaped by time and culture, so both are necessary. More is involved than just psychological astrology.

Siegfried Böhringer is a Protestant pastor and author of a 1990 book on astrology.

Astrology sees life as serious and man as dignified, independent of whether there is a real connection with the stars.

Jürgen Hoppmann is an astrologer and filmmaker in Berlin.

I think Astrology is a phenomenon that works best about art whether in paintings, music, or films, all well beyond normal counselling practice, but a very wide field in which a belief in the stars can find a home.

Manfred Magg is a DAV astrologer and teacher who combines palmistry with astrology.

Techniques and interpretation provide a meaningful framework, but an understanding of the consulting process and a professional handling of it are equally important. So continuous education and training are necessary but are too little recognized today. I ignore spiritual development here since that is a matter of personal philosophy.

Ruprecht Mattig is an educationalist working on a PhD about celebrities as a form of religion.

I suggest testing astrology via a painting for which different interpretations by artists are available. Matching them to an agreed interpretation of the painter's chart will determine whether the cosmos or painter is the more relevant.

Eva Stangenberg is a teacher, astrologer, and joint head of some DAV training centres.

Discussions among my students suggest that statement **3** is now questionable. The prejudice in statement **6** is confusing and unnecessary. The consultation between astrologer and client is a creative act that is not repeatable because there is no single correct interpretation of the astrological symbols (the astrologer chooses the ones that seem most appropriate for the client).

Erik van Slooten is a former philosophy teacher and a DAV astrologer specializing in horary.

I agree with statements **2, 3, 4, 5** but not with **1, 6, 7** because they reflect only psychological astrology and neglect much older forms such as horary. I have thousands of horaries showing it is possible to forecast concretely.

Richard Vetter is a certified psychologist and astrologer in Offenburg.

Statements **1** and **2** are acceptable but not **3** because no scientific test can prove astrology. **4** applies only for the large majority of astrologers who see astrology as based on symbolism and not on causal effects. **5** could be more specific, **6** should be deleted, and **7** does not necessarily apply because every chart is different.

Ulrike Voltmer is a lecturer in music psychology and a former chairperson of DAV.

The 1983 statements are dated because there are now many well-informed views critical of astrology. But the statements should focus not on scientific research but on the perspective of practicing astrologers including professionalism and ethics. It is about time that astrology joined up its different departments, reconciled its worlds of the trivial and of knowledge search, and explored what makes them possible in the first place.

Christopher Weidner works full-time as an astrologer in Munich.

Statement **2** should stress that the astrologer sees what he has been led to see (but even then they do not all agree). **6** reflects how the functions of astrology depend on the period and on culture (thus Indian experience is the opposite). **7** should explain that the function of astrology is to give humans a sense of order and harmonious development, not as it was in ancient Egypt or China but as it is today, with all its emotional and social problems.

Comments by seven researchers or critical observers

Compared with the previous comments, these ones are more specific and more focused:

Dr Geoffrey Dean worked for many years as an astrologer and has made more tests than most.

Dean is the only commentator to provide a referenced literature review. He proposes six new statements to replace the seven 1983 ones in order to form a consensus between astrologers, astrology researchers and astrology critics:

1. Astrologers assume the stars at birth are significant, but to critics they are merely a cloud in which astrologers see faces and meanings. Which does not deny that, like poetry and music, astrology cannot be inspiring and uplifting.
2. Whatever our view of astrology, its historical importance cannot be denied.
3. The disagreements and contradictions that exist everywhere in astrology, the failed attempts to validate it, and the many acceptable readings accidentally made with wrong charts, all show that astrology does not need to be true.
4. The majority opinion among astrologers is that astrology is non-mechanistic. But there is nothing mechanistic in testing whether a chart matches its owner. Which astrologers do anyway – how else could they know if astrology works? If no conceivable test could prove astrology wrong, then no conceivable test could prove it right.
5. Research to date suggests that the benefits of astrology lie in the quality of the astrologer as a wise and caring person. The birth chart merely provides a focus with no apparent benefits beyond those due to non-astrological factors. So it works without needing to be true, and what works best is whatever the astrologer likes best.
6. Astrology is thus a useful fiction, personally satisfying but not objectively true. If astrology encourages people to explore life's problems and to express spiritual values, then these qualities deserve study in their own right.

Prof Dr Bernulf Kanitscheider is Prof of Philosophy of Science at the University of Giessen.

Nature is organized hierarchically and interactions are not possible between planes as far apart as planets and people. So statement **1** violates the entire stock of science. **2** Constellations are artifacts of perspective and have no intrinsic meaning. One can regret this, but denying it is simple superstition. **3** Since the problem of meaning is not resolved, such claims cannot be tested for their truth value. **4** The assertion of interactions between stars and human life is completely speculative. **5** The variety of techniques is irrelevant to the lawfulness of general claims that must find reproducible regularities. **6** If true it would have to involve the earth in relation to the universe, not just newborn infants. **7** Even if stars were connected to life destinies, they would affect freedom as little as the law of gravity does (which is also completely deterministic).

Arthur Mather is co-compiler of the 1977 classic work *Recent Advances in Natal Astrology*.

Statement **1** is an assumption. **2** Merely a traditional claim. **3** There is no unambiguous scientific proof. **4** The causes (artifacts) are known not unknown. **5** Clearly needs a critical review, consensus is premature. **6** More likely due to convenience than evidence. **7** If the chart indicates only potential and not actuality, what reliance can be put on it?

Koen van de Moortel is a Belgian physicist, math teacher, and writer of astrology software.

Re statement **4**. There is no scientific evidence for an "analogy principle", which is a fantasy you can apply as you like. Thus *synchronicity* is just a word for "it seems significant but we have absolutely no idea about what is happening".

Prof Dr Kocku von Stuckrad is at Amsterdam University and author of a History of Astrology.

The statements indicate the position of most of today's practicing astrologers but can hardly satisfy critics of astrology. Questions about alternative traditions and theoretical scientific approaches are not answered.

Prof Dr Dirk Wendt is Emeritus Professor of Psychology at Kiel University.

These statements seem to me like the decisions of an ecclesiastical council where representatives of different faiths decide what they want to believe. Such councils can at least partially abandon the need to explain their teachings to a scientific world because they do not claim to predict events or make individual diagnoses. But astrologers tend to do the exact opposite, which forces their claims to match those in science where criteria of verifiability can be measured. Statement **3** says that the claims are verified, which has the problem of being untrue.

Edgar Wunder is a social geographer and Managing Director of the Society for Anomalistics.

Two approaches are possible: (1) Repair dated passages using issues not considered at the time. (2) Rewrite everything to answer today's challenges, which are now completely different because the previous fiercely fighting

German-speaking schools have gone, leaving mutual tolerance and cooperation. Either way, the statements should contain a description of what astrologers do (or do not do), a correction of public misconceptions, a critical assessment of the existing scene and how astrological evidence is experienced in a typical consultation, together with ethical standards and professional goals. It should identify areas of both agreement and disagreement.

Debatable statements like **3** do not distinguish between the existence of a connection and its explanation. **4** it should name the hypotheses and the state of research. **6** is easily criticised. **7** implies that astrology delivers demonstrable facts whereas most astrologers see it as aid to self-knowledge.

Overview by Peter Niehenke

Peter Niehenke is a psychologist and head of the DAV Training Centre in Freiburg.

Previously I knew exactly what was wanted – clear answers to typical questions about astrology and the work of astrologers. Getting different astrological associations to agree on the issues was not hard because we needed to fight the discredit caused by media emphasis on sun sign columns. We were united against an external opponent.

But what would be the aim today? The conditions that drove the need for agreement no longer exist. So it is not just a question of updating. Indeed, the various commentators show no single common interest; thus even Geoffrey Dean and Arthur Mather differ (albeit only slightly) despite being the main compilers of *Recent Advances in Natal Astrology*, the standard work on astrology research worldwide.

If the statements focused on critics, academics, or the public, how would that interest astrologers? If they focused on standards in astrological counselling, how would that interest critics of astrology? Without a common focus little can be achieved. [Unfortunately he does not suggest what the common focus should be]

Comment All responses tend to reflect the changed perspectives of astrologers following research outcomes over the last few decades. There is a general decline in certainty with a greater openness to usefulness and flexibility. The continuing evolution of viewpoints is well illustrated by a comparison of Arthur Mather's then (in 2007 *in italics*) and now (in 2018):

1 *is just an assumption [astrology is meaningful].* Meaning is in the eye of the beholder. **2** *Merely a traditional claim [meaning rests in the whole chart].* Meaning is constructed by the astrologer as appropriate. **3** *There is no unambiguous scientific proof [of apparent validity].* Any claim to validity has now been disproved. **4** *The causes (artifacts) are known not unknown.* There is no physical mechanism, it's all in the imagination. **5** *Clearly needs a critical review, consensus is premature.* All techniques are illusory, so astrologers can use whatever suits them. **6** *More likely due to convenience than evidence [tropical vs sidereal].* Tropical will simply work better for those who have learned it first. **7** *If the birth chart indicates only potential and not actuality, what reliance can be put on it?* The birth chart can indicate anything, it is up to the practitioner to interpret it in a way most suitable for the client or situation.

Niehenke's original statements (which were of course more extensive than the brief summaries given here) were among several attempts to obtain consensus among astrologers, for example AFAN 7.3.1988.1, Maastricht symposium 7.3.1991.2, *Correlation* 7.7.1994.1, and NGPA the Dutch Society of Practising Astrologers 7.3.1995.3. In each case the outcome depended largely on the attention given to scientific research and to the view that only the whole chart will do:

So the whole chart (whatever that is) must be judged holistically. But as J Ruscio (*Scientific Review of Mental Health Practice* 2(1), 2003) points out, holistic judgment is generally not possible because human cognitive skills are not up to it (a view supported by a huge empirical literature), which means that holistic judgment "constitutes an approach to professional practice that is unnecessarily and unattainably complex, often misguided, and potentially unethical." For the same reason we cannot juggle statements of overflowing wordiness, only concise summaries.

The same applies here. The practitioners are largely concerned with practice, the critics with empirical validity. The practitioners know that astrology works so they ignore comments about thin ice, which leaves them free to focus on issues about skating, giving the false impression that astrology has reached new levels of debate. But the critics stay focused on thin ice.

In other words everything boils down to the problem of *facts vs meaning* that we first met in 1.5.2 and many times since. Yet not a single astrologer commentator mentions it, no doubt because their experience (yes, astrology works!) has disqualified it from consideration. But it would seem to be well placed for adoption as Niehenke's common focus. And once there, the rest follows naturally (astrology is meaningful but not factually true). Is Niehenke's dilemma now largely resolved?

7.3.2012.1 Surveys of 783 astrologers at Western conferences

Nick Campion, *Astrology and Popular Religion in the Modern West* 2012:Chapter 12.

The various surveys up to 2012 in this chapter show (unsurprisingly) that astrologers agree that astrology works, but have only vague ideas (intuition, radiation?) on how it works. More useful are the surveys made by Campion for his book which gave these results:

UK	Responses	N = 235	30%	Response rate = 39% of attendees
USA		234	30%	17%
Serbia & Norway		126	16%	>90%
Argentina & Brazil		188	24%	54%
Total		783	100%	27%

Overall response to key questions:

87% Astrology is a language	56% Astrology predicts the future
77% Astrology requires intuition	50% Astrology is a science
76% Astrology helps counselling	42% Astrology is divination
60% Planets have physical effects	8% Astrology is a religion

Comment The overall response rate (27% of attendees) suggest that the responses may be biased in favour of committed believers interested in justifying their belief. Nevertheless half of the 783 responding astrologers saw astrology as a science based on physical effects, which is precisely the view that other astrologers are retreating from. For more on disagreements and possible alternatives to physical effects see Chapter 4.

7.3.2017.1 First Florida Kepler Conference

In 2017 a new attempt to promote empirical research into astrology was made by US astrologers Courtney Roberts and David Cochrane via the first of a planned series of annual Kepler Conferences in Florida (no connection with the AA's Kepler Days) and optimistic publicity:

Research is changing everything. Join passionate researchers and thought leaders from around the world in building the future of astrology with evidence-based research ... Expanding professional and academic opportunities [by] holding astrology to the same high standards as in any other field. Developing more reliable techniques and services with practical results you can put to work in both your personal and professional life (from the conference website).

No abstracts or proceedings were published, but the highlights were described by Courtney Roberts in "Building the future of astrology", *The Career Astrologer* 26(1), 15-16, 2017:15:

The Kepler Conference programme rose to the challenge with an impressive display of projects and results that, in the words of [UK astrologer] Alex Trenoweth, "threw down the gauntlet to the scientific community who continue to disregard astrology as medieval superstition". ...

Ken McRitchle and Robert Currey shared the fruits of their years of painstaking investigations, double-checking the claims of the "so-called skeptics", astrology's debunkers, who have infamously overrun Wikipedia and dominated public discourse. As it turns out, the skeptics were sloppy, and their pseudoscientific "debunking" doesn't stand up particularly well under peer review. Meanwhile, in recent years, Finland's Dr Kyösti Tarvainen has published 10 peer-reviewed studies with statistically significant astrological results. [Both presentations were independently published and are summarised in 7.7.2016.1 and 7.7.2016.4 respectively. Similar publishings are indicated below.]

Furthermore, regardless of what it says on Wikipedia, every attempt to discredit the Gauquelins' Mars Effect has itself been discredited. The Gauquelin results endure, and now that the Gauquelin data collections are freely available online, researchers regularly use them to generate even more promising results. [No details are given.]

Two projects using Artificial Intelligence, Neural Networks and self-taught machine learning; [namely] the Kepler Quiz on the Big Five Personality Factors, and the AstroInvestiGators' Breast Cancer project, not only identified the planetary patterns relevant to how you score on the Big Five and your risk of developing Breast Cancer, but can train your computer to predict the same for others.

Bill Meridian pinpointed important planetary cycles driving the financial markets. Alex Trenoweth showed how lunar phases correlate with middle-school misbehaviour. Dr Bruce Scofield followed in the footsteps of Johannes Kepler with an astro-meteorology study correlating Saturn with daily temperature data [see 7.4.2010.1]. David Cochrane and Linda Barry present their growing range of positive results from Vibrational Astrology [essentially midpoints and planetary patterns] and harmonics.

In the medical astrology forum, Dr Will Morris unleashed an avalanche of relevant results from studies conducted largely by non-astrologers. Turns out they've been doing our work for us all along [eg see 8.5.4]. That reclamation process is long over-due. Even Planetary Metals had a strong showing, in a reprise of the work of Lily Kolisko and a closer look into the secret lives of iron and copper. Vedic astrologers were welcomed, and well represented [see 7.7.2016.2]; building important cooperation between East and West in a growing enterprise that benefits us all. Those are just some of the highlights from an astonishing program; the kind that everybody said couldn't be done.



Curiously neither Roberts nor the conference website give any indication of the attendance. But photos from the website suggest it was about 50, which compares with the 1000 or so typical of major US astrology conferences.

Comment This event revived the optimistic spirit of the first AA international research conferences nearly forty years earlier, which was not supported by the subsequent research. The intervening conferences show how astrology has moved with the times, and how the Florida optimism was a triumph of belief over reason. How long can it survive? Indeed, there was no indication by Roberts that other research conferences in the world had ever been held.

A second Florida conference was planned for 2018 but had to be moved online after the location suffered hurricane damage. As in 2017, no abstracts or proceedings were published, only videos of each day (at \$25 each), which is why no summary appears here. Judged by reports on the conference website www.thekeplerconference.com, some of the talks seemed little different from those at ordinary astrology conferences and again showed little awareness of previous research and the need for rigour. Indeed, the attendance of UK researcher Dr Nick Kollerstrom as an invited speaker was cancelled even though he had already paid his fare and would have been the only person there who had attended all the AA international research conferences with people like Gauquelin and Ertel present. Interestingly Roberts had stressed that overheated debate at the 2017 conference would not be tolerated, see 7.2.2018.1.

7.3.2018.1 Do You Believe in Astrology? A newspaper survey

In 1984 Francis Fullam surveyed the reasons people believe in astrology using all available opinion polls from Western countries (*Contemporary belief in astrology*, Master's thesis, Dept of Sociology, University of Chicago). She concluded that people believe in astrology because it is satisfying on many levels from the trivial to the profound. Some use it as entertainment. Some use it to solve problems (is he right for me?). Some use it to discover the sacred meaning of life. And some use it to make money. In other words different people believe in astrology for different reasons.

In 2010 Nick Allum surveyed 1000 people in each of 25 European countries about their belief in astrology (*Science Communication* 1-26 December 2010). He found that people who think astrology is scientific tend to be uninformed about science, confused about what astrology is, and intolerant of uncertainty (they had to believe something in order to gain stability and certainty in what to them was a confused and uncertain world). He found it would have been better to ask about behaviour (have you read books on astrology, visited an astrologer?) than about belief.

On 1 January 2018 the *New York Times* asked readers 13+ years old for views of up to 250 words on *Do you believe in astrology?* A focus article provided opinion but no scientific tests:

Astrology is suddenly trendy again. The boom owes much to the internet, with endless competing sites and apps that allow our rituals of self-care. It now works off the user's natal chart, not just sun sign, if they can supply date, time and place. [Abridged from the 1250-word original, same for the others]

Respondents were asked if they believed in astrology and what they got from it. "Impassioned responses were received from believers and nonbelievers alike". Here are some disagreements:

I do not believe in Astrology. The whole concept is nonsense. Astrology is not based on evidence, the conclusions aren't testable, and can't be proven wrong. These qualities are the main foundations of what science is and Astrology fails to meet any of them. Scientists have put Astrology to the test multiple times in the past and have found no ground or base in science in terms of evidence and testability (HYC California).

I believe in astrology. It helps us better learn about ourselves and the universe we live in. Through analyzing my chart, I was able to understand myself and how I am. Most people base their belief of astrology on the horoscopes people put into their blogs, but that isn't individualized for them. That's more of a general belief and that's not what you should go by. If you take the time to do a natal chart and read your results, you will find that it's pretty accurate and you may discover some things you didn't really know about yourself (SD North Carolina).

I fully understand that astrology might be a fun activity to mess around with, but attempting to apply it in the real

world is just plain stupid. It has proven to be inconsistent in various scientific tests. If people want answers they should be looking to a science – a real science – that can give them real answers (VT Illinois).

Not only do I believe in astrology, I find it to be the tool through which we can understand ourselves and the universe in which we live. For me it's a hard fact. Astrology has taught me that the future is not written in stars but is written in us. What matters most are the choices we make. Astrology is not about finding out when you will get a boyfriend or a new car. It is more about if and why you are ready for it. If you haven't gotten your Birth Chart done by a credited astrologer, I doubt you'll ever know what the big deal is about (M New Jersey).

Others found astrology comforting but unreliable:

I do believe that astrology has actual meaning. The idea that these beasts [sun signs] can tell us why we are sad and why the day is going bad is so nice for humans to hear that we cling to it. It is in our nature to look for why things happen or what causes things. So, if someone believes that the position of Mercury explains why they can't communicate properly, then that's that. Astrology works perfectly to explain the inexplicable universe (JB Massachusetts).

By explaining why certain things happen, horoscopes can help you cope with your life. Your horoscope can provide solace when you don't know where to turn. Some say that having a read [of sun sign columns] once in a while can help you benefit from the energy the cosmos is pushing towards you, but I believe that horoscopes can be a waste of money and time. Nobody can totally rely on horoscopes to solve problems. Consider them as fortune cookies which give momentary pleasure but cannot sustain you forever (EK California).

Comment Respondents' ages were not stated. Notice how: (1) Disbelief was based on the results of scientific tests. (2) Responses boil down to facts vs meaning, ie business as usual.

7.3.2018.2 Postscript: Studies residing on websites

Astrology sites take the validity of astrology for granted and endlessly repeat the same dogma. Skeptic sites tend to take the invalidity of astrology for granted and endlessly repeat the same debunkings. The few empirical sites tend to be overwhelmed by the sheer volume of research or by unwelcome negative results. In 2007 there were 13 such sites citing a total of about 180 empirical studies, mostly as abstracts. None reported effect sizes commensurate with astrological claims, and hardly any tested astrologers. As shown by these examples (they exclude our own www.astrology-and-science.com) their findings contribute little to the debate:

www.astrodatbank.com/ A computerised collection of 28,000 timed charts and case histories originally collected before 1970 by the Church of Light in Los Angeles, an unorthodox religion based on astrology, ESP, induced emotions, and directed thinking. The collection was later expanded by US astrologer Lois Rodden of the famous Rodden system of classifying birth data from A = Accurate to DD = Dirty Data. In 2007 the articles on this website included:

Astrology Compatibility Research Results. Five astro-compatibility programs failed to distinguish between 49 failed and 49 successful marriages.

An AstroSignature for Alcohol Abuse. Terri McCartney. Of 30 chart factors tested on 100 alcoholics and 1000 controls, only one reached $p = 0.05$ (namely Moon opposition Neptune, found in 9% of alcoholics vs 5.1% of controls). It failed to confirm an earlier study by Mark McDonough that found an afflicted Mars was the top factor out of 57 chart factors for 213 alcoholics.

Sarah Klein's study of industrial accidents. See 7.4.1993.1.

An AstroSignature for Psychic Ability. McCartney. 31,000 chart factors, 80 psychics, 800 controls.

An AstroSignature for Mathematical Ability (N=27). Cochrane. See also 7.6.1982.1.

Characteristics of public figures with an excess or lack of FEAU. Mark McDonough.

Do public figures have more planets above the horizon? Mark McDonough.

Sociopathic personalities and serial murderers. Joanne Wickenburg. See 7.6.2012.4.

Venus-Neptune aspects in public figures. Donna Cunningham.

Children involved in the Dunblane massacre. Ken Gillman.

Astro Sleuthing rectification challenge. Jeffrey Wigand.

www.astroinvestigators.com/ A group of astrologers led by Alphee Lavoie "dedicated to the scientific scrutiny of long held astrological concepts". Results included:

Novile (40°) and binovile (80°) aspects of orb 1° between 800 married couples.

Counts for hundreds of factors in the charts of 320 astrologers born 1602-1968.

Counts for hundreds of factors in the charts of teachers. And for 368 religious people.

Marriage Synastry. N=749 timed males & noon partners, 829 timed females & noon partners.

Careers via thousands of scientists, musicians, actors, soldiers, teachers, sportsmen. Uses 75% of sample to educate a computer's neural net and 25% to test findings.

Left-handedness N=1239.

People named Barbara. N=285 timed charts revealed a strong Sagittarius/9th theme.

Comment Outcome of the above topics was usually a long list of ranked factors. For example in Marriage Synastry the top two contacts in each direction were his Vertex conjunct her North Node, his Ascendant square her Ceres; her Vesta sextile his North Node, her Pluto opposite his Chiron. None are in the top ten contacts predicted by tradition or by synastry textbooks. But something has to come first and second. So these results mean little until replicated.

www.aureas.org/rams/ The website of *Les Cahiers du RAMS*. From issue 13 (September 2005) the entire journal was online but has now been withdrawn. It had more than one hundred abstracts of RAMS articles in both French and English, of which about one third were of substantial articles such as the following.

Test of yoga teachers fails to replicate. Decourt and Fuzeau-Braesch 2005.

Resemblances in Western, Chinese, Mayan astrology. Noel Decourt 2004

Behaviour and astrology in cloned cows. Suzel Fuzeau-Braesch 2004.

Directional tests are better than chi-squared tests. Noel Decourt 2003.

Astrology a causal or esoteric discipline? Suzel Fuzeau-Braesch 2002. See 7.7.2002.4.

Astrology, statistics and CG Jung. Didier Castille 2002.

Transits and horse races. Pierre Parradin 2001.

Astronomical contributions to explaining astrology. Irina Predeanu 2001. See 7.2.2001.1.

Primary directions in 1430 cases of death. Hervé Delboy 2000. See 7.4.2000.1.

Planetary configurations present at marriages. Didier Castille 2000.

Indicators of life and death in SIDS. Suzel Fuzeau-Braesch 2000.

The astrological signifiers of AIDS. Maurice Charvet 1998.

Neptune and musicians. Christian Guellerin 1998.

Transits for 636 career events of 145 politicians. Hervé Delboy 1997.

Speech therapy criteria and astrological factors. Hubert Brun 1996.

Personality test (427 cases) vs chart factors. Pierre Dicharry 1993. See 7.6.1993.1.

Since 2007 the above empirical sites have tended to stagnate from lack of useful results but others have been formed to correct this awkward situation, for example:

www.astro.com/astrowiki/ A huge free encyclopedia of astrology in English and German versions (not identical) founded in 2008 and maintained by Astrodienst in Switzerland.

The resources of Astrodienst make this site the best organised and referenced in astrology. For every conceivable area of astrology including brief biographies be sure to visit this site first and allow plenty of time. But there are no detailed empirical studies, only supposed conflicts and asides like "X disagrees", which in the interests of a vested impartiality are left unresolved but boil down to the convenient evasion "science is unable to test astrology".

www.objectiveastrology.net/research.html Lists useful sources for empirical research but with a marked aversion to rigorous criticism (thus *Recent Advances* 1977 is "not entirely objective" and our *Tests of Astrology* 2016 is "strongly biased against astrology"; no examples are given). Also promotes Hungarian-born Canada-based astrologer Peter Marko's *The Lunar Effect Bibliography* 2017 containing 338 annotated items 1871-2017, see 8.5.5.

From Hitler: Greetings to astrologers!

The international congress in Dusseldorf 1-7 September 1936 attracted 400 visitors from sixteen countries. Twenty-one papers were read including six in French and one in English. Respectful greetings were sent to Hitler and Dr

012 Telegramm Deutsche Reichspost
 212 S BERLIN / 8 31 2 1349 -
 Tag 02. 08. 36 14 15
 an B. O. KORSCH
 DR KORSCH ASTROLOGISCHE
 ZENTRALSTELLE DUESSELDORF
 DEN TEILNEHMERN AM DRITTEN INTERNATIONALEN UND FUENFZEHNTE
 DEUTSCHEN ASTROLOGENKONGRESS DANKE ICH HERZLICH FUEER DIE
 GRUESSE . ICH ERWIDERE SIE MIT BESTEN WUENSCHEN FUEER IHRE
 ARBEIT - ADOLF HITLER +

Goebbels. Hitler's reply reads "To the participants in the third international and fifteenth German congress of astrologers. I warmly thank you for your greetings. I give you my best wishes for your work". Adolphe Ferrière (*L'influence des astres* 1946:37) comments: "It was a dangerous favour! We know this "enlightened" view shortly afterwards put in prison all astrologers, scientific or not, in Hitler's empire. Many of them – including

Krafft – died in the concentration camp of Buchenwald or another!". Telegram is from *Astrologie* 1936: *Vorträge und Bericht des III Internationalen Astrologen-Kongresses, des XV Deutschen Astrologen-Kongresses. Düsseldorf 1936*.

7.4 EVENTS

Includes all studies involving transits, progressions and directions.

7.4.1927.1 Planets and metals

Lili Kolisko, *Star Workings on Earth Materials*, Stuttgart 1927 [In German]. Between 1928 and 1952 Kolisko made many hundreds of experiments in which a metal is slowly precipitated from solution at room temperature, for example silver is slowly precipitated by ferrous iron from a 1% solution of silver nitrate. When the solution was allowed to rise up vertical strips of absorbent paper, a process she termed "Steigbildmethode" or in English "capillary dynamolysis", the metal was deposited in patterns that (she said) tended to disappear during aspects between the planets traditionally linked with the metals, in this case Moon (silver) and Mars (iron), and not by other planets. The following condensed excerpts are translated from her original German pp 1-14.



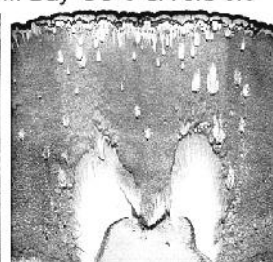
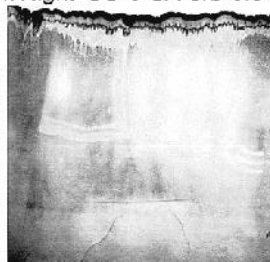
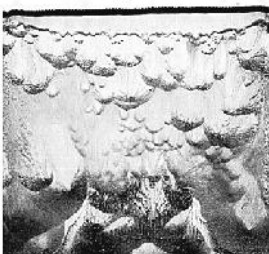
Cover of Kolisko's book published in Stuttgart 1927. It has 15 A5-size photos on art paper but none of the quantitative detail that a modern chemist would require.

Rudolf Steiner taught that "Solid materials are subject to forces of the Earth. But in solution they are also subject to planetary forces". So Mars acts on dissolved iron, Moon on dissolved silver, and Saturn on dissolved lead (pp.5-6). [We are not told how he could know this.] Kolisko dissolved one gram each of silver nitrate, iron sulphate, and lead nitrate in 100 ml of distilled water. On mixing equal parts of iron and silver solutions, a black precipitate [of silver] starts to form. On dipping in a sheet of filter paper, the liquid begins to rise. After 10 to 15 minutes a black shape forms and grows, then another and another, a birth process of Moon and Mars. Hundreds of pictures can arise in this way. But after several weeks the beautiful images are corrupted. So to photograph them you must be quick. But you will not get tired of making these pictures, because the results are never twice the same. Why is this?

Silver+Iron at night

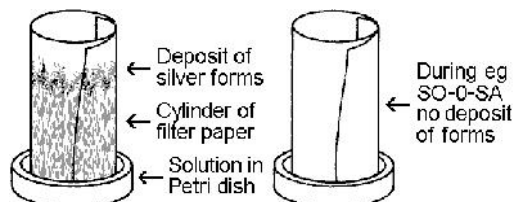


+Lead at night no SO-SA ... Night SO-0-SA orb 0.0° ... Day SO-0-SA orb 0.6°



Photos of filter paper patterns from Kolisko (1927). Liquid rises from bottom to top, slowly creating black shapes. Night gave faster and stronger shapes even in a darkroom. Adding lead gave fewer shapes, and none at all during an exact Sun-Saturn conjunction. Kolisko concluded that "the Sun was blocking Saturn's action on the lead!" (p.14).

By day, the process took place under the action of light. Does light have to be present to produce the forms? From 11 am to 3 pm the process goes into the darkroom. We get more shapes than in the light, but not as many as in the dark (photo 1 above). We now run the process at night and in the darkroom. More shapes are present than in darkroom by day. So although light and dark play a role, there are also effects from the whole cosmos. Now we mix equal amounts of silver nitrate, lead nitrate and iron sulphate in a concentration of 1 gram per 100 cc of distilled water. The lead produces less shapes, but the same light/dark effects are observed (photo 2 above). Despite our many pictures, how can we prove that silver is Moon, iron is Mars, and lead is Saturn? In fact we can show their effectiveness by experiments.



Kolisko's apparatus. Whatmen #1 filter paper 15 x 15cm is formed into a cylinder (if necessary secured by a single paper clip at the top) and inserted into freshly-prepared solution (about 2 ml) in a Petri dish. Each experiment is performed in triplicate in near darkness at about 20°C. Most of the solution is absorbed after about 20 minutes. After the experiment the paper is allowed to dry naturally.

On 21 November 1926 there were interesting planetary configurations. At 12 noon a superior conjunction of Sun and Venus, at 6pm an exact conjunction of Sun and Saturn. At 6 pm the shapes took more than an hour to appear. Even the silver and iron seemed less effective than usual (as in photo 3). Involuntarily one must ask: Where are all the forms? Where is the lead? It was a strange result! I must admit that I was stunned by this result, all the more so because if Saturn and Sun meet, then perhaps a particular effectiveness would be communicated to the lead. Now I faced the opposite result. My abstract idea had been corrected by reality.

So the experiment was repeated at 12 midnight, in the dark. After 2 hours the picture was strange and mysterious (photo 4). Under normal conditions an image must arise (photo 2 again). Yet we see instead a yawning emptiness. An invisible hand has extinguished the effect of lead in the solution. But who is this invisible hand? The reason for the inhibition became clear: The Sun stood in front of Saturn as seen from the Earth which therefore could not act on the lead! By 11 am on 22 November 1926 the shapes were returning (photo 4 again), and by 11 pm they were strong again. The same on the following days and nights. The stars have spoken. They show a bridge from earth to heaven, and from matter to spirit (p.14).

Comment But at 2 am when the shapes were dormant the orb was 0.3° , at 11 am when the shapes were returning the orb was 0.6° , and at 11 pm when the shapes were strong again the orb was 1.1° . Such orbs seem inconsistent and unrealistically narrow for a physical effect. But Kolisko was not a chemist. She was preoccupied with symbolism rather than chemistry. Some astrologers claim to have reproduced her observations, but chemists have been unable to do so, finding only that the reported variations could be due to poor control of variables such as temperature, purity, concentration, acidity, mixing technique, and others to a total of around a dozen experimental variables that could affect the patterns. Even close inspection of the filter paper (and thus breathing on it) could potentially have an effect. Here are some examples of independent experimental studies:

An article in *Journal of the British Astronomical Society* 45, 165-166, 1935 describes "an extensive series of chemical experiments carried out by Mr J Cecil Maby and Mr FA Baker" to test Kolisko's claims. (The experiments were not separately published. Maby is the co-author of Kaye & Maby's famous *Tables of Physical and Chemical Constants* 1973.) According to the author, Maby and Baker point out that:

In her published accounts of these experiments, Frau Kolisko gives no details of a strictly standardised technique by which they can be exactly repeated, whereas the authors of these tests of her claims find that these chemical reactions on filter paper are peculiarly sensitive to differences in purity, strength and temperature of the salt solutions, to differences of humidity of the surrounding air, to incident radiation and to other conditions, internal and external. The greater part of the work, then, of these investigators was to examine the effects of the variation of these conditions, one by one, evidently a most laborious undertaking, and to standardise experimental conditions. They used stock solutions and filter papers, and preserved them in the dark, clean and air-tight at a constant temperature. With these and many more precautions they found no appreciable variations with the configurations of the heavenly bodies. Frau Kolisko makes no references in her writings to the necessity of any such precautions and it can well be believed that the changes she found were due to changes in experimental conditions and were attributed by her and her co-workers to celestial phenomena (p.166).

On the other hand a series of apparently conclusive tests during the 1976 Mars-Saturn conjunction were reported by Nick Kollerstrom and Michael Drummond (a qualified chemist with a home lab) in *Astrological Journal* 19(3), 100-105, 1977. The results inspired pharmacologist Dr Frank McGillion to run daily tests in triplicate for a month centred on the 1978 Mars-Saturn conjunction, but "despite some suggestive findings, I did not get a conclusive result on the iron-silver-lead system" (*The Opening Eye* 1980:98). He adds that, although such effects are difficult to explain, "this is no reason for closing our eyes to the possibility of such effects which can be tested simply enough in any laboratory" (p.99). In 1993 the various findings were reviewed by Nick Kollerstrom in his book *The Metal-Planet Relationship: A study of celestial influence*. On the failure to replicate consistently, he comments:

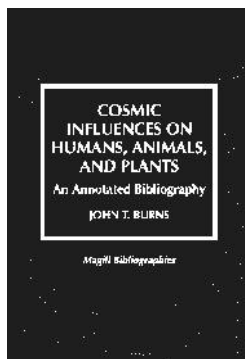
There may be some key that we don't yet have – *la clef Hermetique*. Various factors may be involved in whether an experiment works, such as whether Mars is near or far from Earth, which varies by a factor of five [but is much the same for every Sun-Mars conjunction] ... My interest in the experiments has somewhat waned after finding that they sometimes worked but sometimes did not (pp.42-43).

Another failure to replicate was reported by Dutch chemist A Rutges in *Tijdschrift Astrologie* 2(2), 8-9, 1978. He worked to the highest experimental standards and was unaware of previous independent findings. Here is a summary of his report:

During three months I made many tests to see if I could reproduce Kolisko's results. It was important to determine what outside factors, besides planets, could influence the results. I worked with silver nitrate, ferrous sulphate, and lead nitrate, all of the highest quality. Water was demineralised and double distilled. Solutions were kept in the dark and under nitrogen to prevent decomposition. Under Kolisko's own conditions I could obtain her patterns of metal deposits. But at least eleven experimental variables could influence the patterns, for example concentration, temperature, acidity, even the width and porosity of the paper. When these variables were controlled, the time of day had no effect, and no influence of planets (including new and full Moons) could be detected. Conclusion: Kolisko's results could not be reproduced. They can be explained by inadequate control of experimental variables.

Comment 2 Kolisko (1889-1976) also studied lunar effects on the growth of vegetables, the sprouting of seeds in dishes of various metals, the crystallisation of metallic salt solutions, and the effect of homeopathic dilutions. For example wheat plantings were sometimes better at new moon and sometimes better at full moon, depending on the season; sunflowers germinated fastest in tin dishes, tin being alchemically related to Jupiter; crystallisation rates differed between day and night; and 1% solutions of silver nitrate diluted 1:10¹¹ killed white mice within a few weeks whereas higher or lower dilutions had no effect. Her work was later extended by Agnes Fyfe (1898-1986), who spent several decades researching "formative forces" in plants using dried filter papers on which juice from plants harvested at various times had been allowed to rise. Tests using metallic salt solutions such as silver nitrate or gold chloride gave complex patterns that were said to vary with planetary conditions, for example mistletoe sap gave weaker patterns when harvested during a lunar eclipse.

UK physical chemist William Steffen (*Science Forum* 4, 3-7, Spring 1983) examined the physics and chemistry of filter paper results and found much variability in the flow through paper pores due to changes in surface tension and viscosity, and obstruction by dried plant juices and metal deposits. For example changes in metal concentration and quite marginal changes in plant treatment could lead to results that showed hardly any similarity – like well-formed patterns versus no patterns at all. Patterns could even be obtained with highly purified substances such as sugar and certain organic acids, whose purification would have destroyed any formative forces. He concludes that straightforward physics and chemistry alone are enough to explain the results with no need for formative forces. So Rudolf Steiner's assumption that the flow responds to formative forces:



seems to have led to the neglect of a thorough methodical investigation. ... In our view all ... results are far from being conclusive. Firstly, because the standards of documentation are poor compared with any current scientific standards: No duplicate pickings and extracts, usually only one picture is shown, representing each picking time and giving no indication about the experimental variations involved. ... Secondly [it requires] a high degree of uniformity of the source from which the material is sampled, [and that] no unknown rhythms and changes in the life processes occur over the observed period of time ... both conditions being very difficult to find and demonstrate. ... apart from all the other experimental and technical difficulties which the method poses (pp.6-7).

Lili Kolisko, Agnes Fyfe and their supporters produced dozens of publications in both German and English, most of them hard-to-find. But all are summarised at length by US biologist Professor John T Burns in his *Cosmic Influences on Humans, Animals, and Plants: An annotated bibliography*, Scarecrow Press 1997.

Today the apparatus routinely used to follow the kinetics of chemical reactions has been used for decades in hundreds of laboratories around the world, despite which no celestial effects of the kind claimed by Kolisko have been reported.

7.4.1938.1 Confusion between methods of direction

H J Gouchon, *Les Cahiers Astrologiques* 5, 209-222, 1938.

There are at least 20 methods of directions, all claimed to correlate with events. Planetary directions can be astronomical (such as a day's actual movement = one year of life), or non-astronomical (based on symbolism such as one degree of movement = one year of life). The difficulty of course is choosing the best method from this confusion. Many astrologers hate calculations, so it is not surprising that the simplest method $1^\circ = 1$ year is ardently defended with countless examples. But this proves nothing because the examples are generally poorly presented or interpreted. Indeed, I would argue that all methods of directions, even the most unlikely, always produce results, at least partially. If you invent a fictitious system and apply it to any chart, you will almost always find a match with major life events. **Comment 1** If a method works satisfactorily for all astrologers and all clients, why invent another?

The author shows how, when 18 major events in the life of Napoleon III are tested against properly matching symbolism, 14 could be explained by standard $1^\circ = 1$ year directions, whereas 16 could be equally well explained by fictitious $1.5^\circ = 1$ year directions. Yes, the simplest method saves huge amounts of time, but he uses primary directions because they give the best results – in this case they explained 18 of the events. A broad investigation is needed, provided it is founded on tests and not on theories. More than forty years later he comments that the inventors of astrological methods

take a heavy responsibility for disclosing false ideas that induce error in readers ... there are many astrological groups or schools worldwide that may one day collapse due to using methods based only on intuition, imagination or some analogical reasoning, and without doing serious research beforehand (*Les Prévisions a Longue Echeance* 1980:47).

He also mentions 21 cases of death in aeroplane accidents where he found 86 relevant aspects in their solar returns. Probability theory itself is "far too complicated", so he used 21 fictitious cases as controls, and found 89 relevant aspects (p.51).

Comment 2 Many methods can be fanciful, for example converse methods where planets are directed backwards, and logarithmic (directed by ab^y degrees) or exponential (directed by $c(1 - 1/10^{dy})$ degrees), where y = age in years and a, b, c, d are arbitrary constants. Examples are $a=16$, $b=1.013$ (*Les Cahiers Astrologiques* 53, 260-265, 1954) and $c=180$, $d=0.01$ (*Les Cahiers Astrologiques* 3, 119-124, 1946). In the latter case the direction at age 21 or 50 years is 69.0 or 123.1 degrees. Its author says "If validly founded ... the method permits rectification of birth hours just from the Ascendant". But if it isn't validly founded, what then?

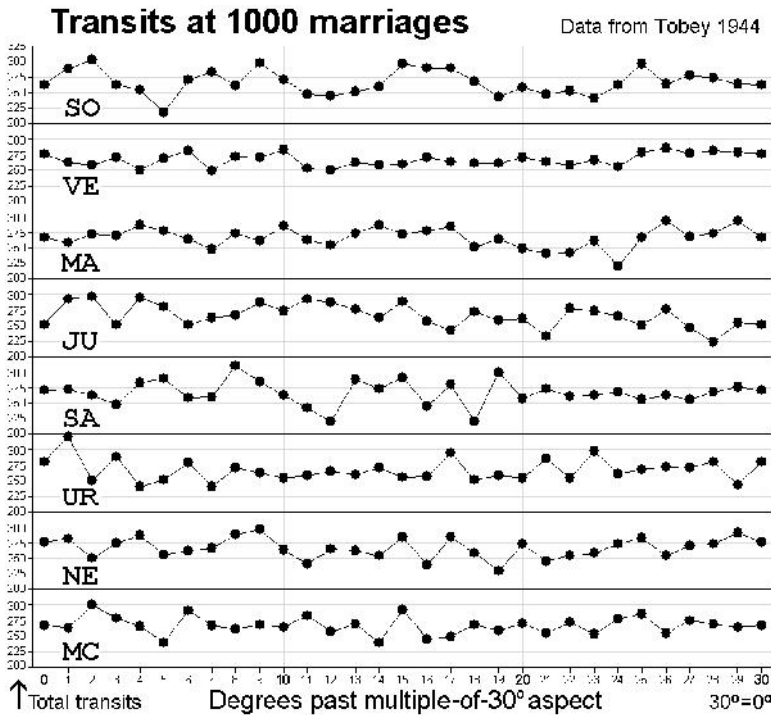
7.4.1944.1 Transits at 1000 marriages from *Who's Who*

Carl Payne Tobey. *American Astrology* March 1944 pp.55-60. A remarkable example of an astonishing labour.

To study transits at marriage, Tobey extracted 1000 cases from *Who's Who* that provided both the marriage date and the bridegroom's birth date, and calculated the angular separations on the marriage date between (1) all transiting planets (excluding MO and ME) and (2) natal SO, VE, MA, JU, SA, UR, NE and MC. His study may seem almost routine. In fact it required:

a year and a half of work, 64,000 measurements, and much other tabulation and work that never shows in published reports. ... Few astrologers appreciate the enormous amount of labor that was undertaken to prove what appears to them an almost insignificant something. No one else took the trouble to do so much work in this field before. ... Every [measurement] was made by the writer in his spare time. It was accomplished after full days of work at other duties. It was not done for any pecuniary reward [but to] set an example. What could be accomplished if 1000 astrologers got down to business? (pp.59-60).

	SO	VE	MA	JU	SA	UR	NE	MC	
SO	..	0.15	0.10	-.02	-.05	0.07	0.39	0.45	
VE	0.15	..	0.40	-.50	0.08	0.23	0.19	0.01	Each entry is the correlation r between 30 pairs of points as plotted in the distributions below.
MA	0.10	0.40	..	0.03	0.27	-.06	0.13	-.26	
JU	-.02	-.50	0.03	..	-.01	-.28	0.00	0.15	
SA	-.05	0.08	0.27	-.01	..	0.02	0.26	-.15	
UR	0.07	0.23	-.06	-.28	0.02	..	0.12	-.17	
NE	0.39	0.19	0.13	0.00	0.26	0.12	..	0.18	
MC	0.45	0.01	-.26	0.15	-.15	-.17	0.18	..	
									Mean $r = 0.062$



When Tobey's 64,000 measurements are plotted, the results look like this – a breakdown of transits at 1000 marriages for $8 \times 8 \times 1000 = 64,000$ transits.

Each plot shows how the total transits to the indicated natal body varies with distance from the exact aspect point at $0^\circ/30^\circ$ for all multiple-of- 30° aspects (0, 30, 60, 90, ... 300, 330, $360^\circ/0^\circ$) when all distances are rounded to the nearest degree.

For each degree of distance the expected mean total is:

$$64,000 / (8 \times 30) = 266.7$$

which is close to the middle of the vertical span of each plot.

Comment Each plot is centred on the mean with no obvious piling around the exact aspect point of $0^\circ/30^\circ$ – a result further confirmed by correlation analyses as set out above:

To achieve $p \leq 0.10$ the correlation r has to exceed ± 0.31 , for which the expected number is (number of unique pairs = $8C2 = 28$) $\times 0.10 = 2.8$, whereas the observed number is 4, or not sufficiently different to suggest that something special is happening, at least not more special than might be explained by the non-uniformity of planetary motion. Tobey did not run these correlation confirmations but he rightly concluded that his experiment:

did not show anything of what we might term a radical nature. ... After further study of the figures involved, it is probable that we will announce the next phase of our investigation (p.59).

But this poor return for a year and a half of astonishing labour did not quench his thirst for more. As he said, "What could be accomplished if 1000 astrologers got down to business?"

7.4.1946.1 Applying probabilities to astrology

Jean Hiéroz, *Les Cahiers Astrologiques* 5, 239-247, 1946. Hiéroz (born 1889) was an unusual combination of consulting engineer and scholarly astrologer. Hiéroz (he, or at least his publishers, also spelled it Hiéroz) is a pseudonym.

Since the 1900s, when Choissard introduced the idea of scientific astrology, many studies including Choissard's have appeared in which frequencies are compared. But there is no attempt to judge the importance of any differences or calculate any probabilities. The authors seem not to care. Choissard knew almost nothing of probability, was profoundly ignorant of mathematics, and his works contain serious errors. He makes colossal blunders that even elementary diploma students would recognise. For example he ignores the changes in aspect duration due to bodies moving in the same or opposite directions. Similar errors are found in all the ideas he thought it necessary to transmit to posterity – and this is nine years before Gauquelin's 1955 critique in 6.3.3. It is essential to help astrologers make a proper critique of their own work. So here without proof are the concepts used to compare frequencies:

Mean = total/N where N is the number of cases. Standard deviation $sd = \sqrt{(2Np(1-p))}$ where p is the probability of occurrence. Calculate the probability of result x via $z = (x - \text{mean})/sd$ and evaluate z via the normal distribution. The number of charts needed to give reliable statistics is then given by $Np = 4 \times sd$, which rearranges to $N = 32(1-p)/p$. For example $p = 1/12$ for signs, which means the minimum sample size for a reliable test of signs is $32(11/12)/(1/12) = 350$ [no doubt embarrassingly high for those days, but small by modern standards].

He then applies these approaches to recent studies in *Les Cahiers Astrologiques* and finds them

all wanting. He apologises "if my criticism may have seemed harsh", but adds he was pleased to see Léon Lasson attempting to apply probabilities in his recent 1946 book *Ceux qui nous guident*, even if Lasson ("despite his Saturn in Capricorn") failed to calculate them properly.

In a subsequent article (*Les Cahiers Astrologiques* 8, 83-88, 1947) Hiëroz notes that his original article had attracted thirty letters to himself and editor, which showed how much his "little work was needed". In response he extends his table of z values to $z = 10$, and replies to comments from the authors he has criticised.

A year later (*Les Cahiers Astrologiques* 16, 200-208, 1948) Hiëroz comments on recent articles about various probabilities. The first was about the presence of Venus in different signs, which led him to make a systematic study of Venus-in-signs. The results showed huge peaks in various years, of which the following are representative. The numbers are the days spent by Venus in each sign. The peak for each year is in boldface:

Year	AR	TA	GE	CN	LE	VI	LI	SC	SG	CP	AQ	PI	Total
1854	29	27	26	25	25	24	24	24	23	12	3	123	365
1855	25	24	25	26	28	43	111	23	0	12	24	24	365
1856	25	24	25	24	25	24	24	29	51	49	42	24	366
1857	28	125	31	27	26	25	24	24	21	0	8	26	365
1850-57	205	300	208	260	251	218	283	202	274	222	203	296	2922

In other words Venus-in-signs is an area with an excellent chance of drawing wrong conclusions. The author then looks at the frequencies in signs of the other planets, and at seasonal effects on house durations (longer in summer if above the horizon because daylength is longer, and vice versa in winter).

7.4.1964.1 On wrong charts and N=1

Garth Allen (Donald Bradley), Your Powwow Corner, *American Astrology*, 33(6), 27-28, August 1964 In his day Bradley (1925-1974) was the leading US research astrologer and siderealist. He was an amateur astronomer and had built many astronomical telescopes. His column in *American Astrology* was noted for its vigorous style and for putting astrology to the test. This verbatim extract on wrong charts and small samples is perhaps the definitive comment:

Our reservations about the single case by single case approach, however, are embodied in the question: How many times have you worked with erroneous birth data and found admirably apt indices for everything that happened in the native's lifetime? We've all had this jarring experience many times in our professional careers, the explanation being that we have so many techniques in modern astrology to draw upon, it is easy to find appropriate planetary "contacts" for anything and everything, by one method or another. Give me some false data, telling me that the native was born within 15 minutes of the specified time, and that he broke his leg in his 23rd year of life and the chances are good that I'll be able to find a "convincing" configuration, progression, transit, key cycle, revolution, direction or Dasa that is appropriate to what happened – and with multiple confirmations, too, making everybody cluck about how marvelous astrology is.

Each of us, as conscientious astrologers, must be our own mental watchdogs, ever alert to the dangers of our endless, habitual toying and toiling with charts and numbers and symbols and systems. Too many times we have found that somebody was really born in 1923 and not 1924; or a rural doctor mistakenly wrote P.M. instead of A.M. on a birth certificate; or someone who arrived on these shores as a child from eastern Europe was still using the Old Style birth-date written on his original passport; or a birth hour should rightly have been recorded in daylight-saving time, and so forth. But even though the information was seriously in error, the gears of the chartwork seemed to click off just fine.

The point we are getting at here is that a randomly invented, wholly groundless ayanamsa will yield highly "significant" ingress charts for a majority of events. Yes, we said majority, and meant it. A phony vernal point will "work" so well, so much of the time, that at first glance any value you might fabricate on the spur of the moment has a good prospect of seeming like a major astrological "discovery". If you are reluctant to believe this, take the first telephone number having six digits in your local directory and con yourself into considering it to be the genuine ayanamsa in degrees, minutes and seconds, for any event you want to "study". The odds are surely better than 50-50 that by your third ingress chart for the event, using this fake ayanamsa, pretending it to be real, you'll come up with a persuasively "accurate" horoscopic picture of the event. If the event is a catastrophe, there are enough malefics in the sky, and more than enough square aspects within reach of at least one of your two, three, four or more sets of angular cusps to fill the bill and produce a "triumph" for the ersatz ayanamsa employed. But is it science? That's the big question, and on this question hangs the whole disposition of astrology's worthwhileness.

Elsewhere (in *Solar and Lunar Returns* 1948, reprinted 1968 and 1973) Bradley notes that the standard set of ten natal planets, ten transiting planets, and eight major aspects means that, even without the Ascendant and MC :

the odds are even that at any given moment a transiting planet is within $0^\circ 27'$ of a conjunction, square or opposition, of a natal planet – a fact which gives the lie to many current astrological (mal)practices (pp.16-17, his italics).

Comment Bradley's own work could hardly be more thorough and (in the USA) more widely known, yet this clear warning fell on deaf ears. For more on wrong charts see 8.9.9.

7.4.1966.1 Analysis of variance in astrological experiments.

Jacques Reverchon, *Les Cahiers Astrologiques* 121, 66-72, 1966.

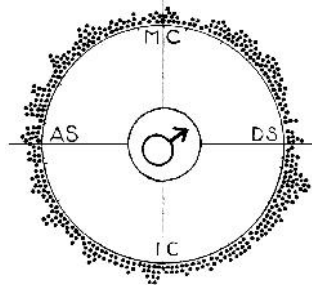
Research indicates that astrological effects are so small that it is difficult to collect enough data to test them. However, tests of variance measured across multiple factors should be more sensitive. To test this idea, I applied tests of variance to demographic variables measured under minimum and maximum solar activity. My sample consisted of the 4793 births between 1827 (start of a solar maximum) and 1924 (start of another solar maximum) published in Gauquelin's *L'influence des astres*. [The author does not list the variables he tested]. The results suggested that demographic trends can combine to produce an effect that should be detectable even though the individual factors are not. **Comment** This tells us no more than we already know. If we combine all items that relate to the same thing it will increase the reliability of whatever is being measured. The Kuder-Richardson formula (it dates from 1936) says the overall reliability of N items combined = $Nr/(1+(N-1)r)$, where r is the mean reliability (0-1) of a single item. If r is 0.15, which is typical of a single question, the overall reliability of $N = 20$ questions combined will be about $20 \times 0.15/(1+19 \times 0.15) = 0.78$, which should certainly be detectable even if 0.15 is not. But combining items will not work unless they are measuring the same thing, which for the author's demographic variables was presumably known, but for astrological variables it is precisely what is not known. Nevertheless his study was the first to apply analysis of variance to astrology.

7.4.1970.1 A disappointing research on 93 wars

André Barbault, *L'Astrologue* 11, 184-185, 1970.

Barbault collected 93 timed dates for the declaration of war or the opening of hostilities during 1850-1970. For each date he calculated lunations and ingresses for the capital of the attacked country. The result was 404 computer-calculated charts, for which he counted how many times each planet was angular with an orb of 10° . Here are his counts:

MO	ME	VE	MA	JU	SA	UR	NE	PL	Total	Mean	± sd
94	92	90	80	100	88	92	87	87	810	90.0	5.55

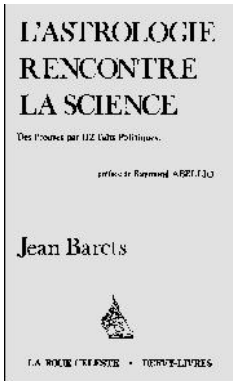


He comments "it is clear that the results are zero ... the irony is that Jupiter has the most and Mars the least". Separating the lunations from the ingresses revealed no difference. Nor did plotting all positions, as shown here for "warlord" Mars, where every dot is a war, which is "most distressing in that the least busy areas fall around the DS and after the MC (and here we have timed events!) ... I will not insult you by giving you the zodiacal positions of Mars" (p.145).

7.4.1977.1 Proof of transits for 13 top French politicians?

Jean Baret, *L'Astrologie rencontre la science* [Astrology encounters science] 1977. The author is a prominent consulting engineer. He says "I was once hostile to astrology, being a rational person. One day a friend who had a passion for astrology studied my birth chart and predicted two future dates that, according to him, would change my life. His predictions were accurate. I was surprised, and promised myself to study astrology to make a proper judgement [which I did, after a long wait due to lack of time] ... my interest was a disease that forced me to write this book" (p.20). He notes that "A Gemini painter will be soft, subtle, nuanced; and a Scorpio painter will be violent and tormented, but both will be painters ... Many authors have had the merit of avoiding this difficulty [by means of statistics] so I have attempted an analogous approach based on transits during the course of life and not merely on the birth chart alone" (pp.15-16).

To avoid selection bias Baretts analysed transits for the most highly ranked French politicians (successive presidents, premiers, and leaders of the opposition, no exclusions) on their recorded dates of successful election or promotion. Altogether there were 13 politicians and



112 dates. According to tradition there will be favourable transits between at least one of the outer planets Jupiter Saturn Uranus (not Neptune or Pluto because too slow moving), and at least one of the natal "symbols of political or social destiny", namely (p.83):

- Jupiter, a general symbol of legal advancement
- Sun, a general symbol of power
- MC, a general symbol of social destiny
- MC ruler (ie ruler of the MC sign)
- Planets conjunct the MC within 5-10°

Favourable transits involve aspects of 0, 60, 120, and 180, with some exceptions if the planets are severely afflicted in the birth chart. The orb is 2 degrees, or slightly more for the MC if the birth time is not precise.

He observed that

it is very rare to have at least a small inexactness in aspects for an election or promotion (p.90).

therefore orbs are necessary – but not orbs so large that aspects would always exist by chance alone. If one or more favourable aspects exist at the successful election or promotion, he counts it as a hit. Unfavourable aspects are ignored because irrelevant. The number of events per politician ranged from 20 for Faure and 13 for de Gaulle to 4 for Rocard. The author shows that the probability of a hit by chance depends somewhat on the chart but is generally around $p = 0.5$. However 96 of the 112 events were hits, for which he calculates a probability against chance of 1 in 5000 million. He concludes "Astrology seems to exist and I believe I have met her in my work" (p.306).

Comment Apart from a seriously inadequate sample size of 13, there is no control sample, without which the results are meaningless. The author fills a book of 335 pages with a study that in a research journal might fill 3 or 4 pages. But he is not alone – Danish researcher Sven Svensson's does much the same in his 1983 book *Dynamic Astrology*, see 7.4.2006.1.

7.4.1977.2 Do eclipses have an effect?

Shirley Hill and Robert Springle, *FAA Journal* 7(4), 13-18, 1977.

The two researchers focused on the total solar eclipse that passed across south-eastern Australia in the afternoon of 23 October 1976. The total shadow was about 250 km wide. They consulted newspapers for events in the direct path of the eclipse that happened within two months, not just in Australia but also in Africa. Their main conclusions were: (1) The myths connecting eclipses with national disasters are simply myths. (2) Timing is a big problem. Exactly where and when are the effects supposed to apply? How to equate the eclipse with the demise of a leader who is nowhere in the eclipse path or where no eclipse exists?

Comment The astronomer RR Newton (*Science* 166, 825-831, 1969) made a critical non-astrological study of more than 100 ancient eclipse records. Ancient records are readily checked by modern computations because a total eclipse is a very precise observation. Once the location is known the time need not be known closer than ten years. Newton found that probably nearly half of the original records do not refer to authentic eclipses, and that less than half of modern quotations of ancient eclipses are correct (some are the opposite of the original). With few exceptions the records of authentic eclipses come from the chronicles of courts, monasteries etc, and are generally undramatic. Those involving unauthentic eclipses come from ancient histories and other literature, many are obvious literary inventions that have been uncritically accepted as fact, and they tend to be dramatic. In other words there is no evidence that eclipses have a greater tendency to happen during battles, at the death of

great personages, or at the beginning of great enterprises, than at any other time. Traditional beliefs about eclipses as a basis for their validity in astrology are therefore not supported.

7.4.1977.3 311 suicides in New York

Nona Press, An astrological suicide study, *Journal of Geocosmic Research* 2(2), 23-33, 1977-1978. A study conducted during 1974-1977 with the assistance of Neil Michelsen, Luann Russell, Joanna Shannon and Milton Stark of the NCGR NY Chapter. Personal communications 1976, 1994. Updated in *New Insights into Astrology* 1993:311-329.

One of the earliest computerised tests, and certainly the most famous, was the study by Nona Press et al of 311 timed births born in New York City who had committed suicide 1969-1973. Suicides were chosen because: (1) Suicide is a timed act and must be legally certified, so there is little question about the data. (2) Suicide is the most drastic action that anyone can take, so it is reasonable to suppose that it should be shown in the birth chart. The authors examined the records of New York City suicides 1969-1973 (N = 2250) and selected all those who were born in New York City and whose birth certificates gave birth times (N = 311). All were born after 1930 because birth times in New York were not recorded until 1931. Each suicide was matched to a control born in the same year and location. For analysis the suicides and controls were divided into three groups: 110 (1969+1970 suicides), 103 (1971+1972 suicides), and 98 (1973 suicides). For each suicide the nature and date of death were known.

For each of the 622 subjects the computer calculated the positions of the traditional ten planets, four major asteroids, eight Uranian (ie hypothetical) planets, Moon's node, angles, and Placidus house cusps. It then analysed the data for the following factors:

Totals by sign, house, element and quality. Signs on house cusps. Location of house ruler and intercepted-sign ruler. Aspects and midpoints using all major and minor aspects (including quintile, bi-quintile) with various orbs. Aspects to angles with various orbs. Angular separation discriminant analysis with various orbs (finds which angular separation and which orb best discriminated between suicides and controls). T-square, T-square/trine and T-square/Grand Trine complexes with various orbs. Harmonics 1–12, 16, 24, 48 for planets taken 2 (angular separation), 3 (planetary pictures), and 4 (midpoints) at a time with various orbs. Frequency distribution of the 1st and 4th harmonics for planets taken 2 and 3 at a time. Gauquelin's 12- and 36- sectors including harmonics. Declination and declination midpoints. Geocentric nodes. Degree areas and Carter's signifiers of suicide. 17 Uranian signifiers of suicide. Multiple-of-22.5° aspects (orb mostly 0.5°) between 21 Uranian pictures and 19 Uranian personal points derived from a study of suicides, here the computer merely counted their numbers. Biorythms using all possible cycles of 1 through 33 days, not just the usual ones of 23, 28, 33 days. In addition manual analyses were made of planets, asteroids and Uranian planets conjunct house cusps; quadrant totals; eclipses; birth conditions such as the number of hours of labour, surgical intervention, and other complications (from *Recent Advances* 1977:559).

Altogether about 100,000 different chart factors were analysed in each of the three groups totalling 311 suicides and 311 controls. Each factor in each of the three groups was tested for significance between the suicides and controls, either by a chi-squared test (for distributions) or t-test (for means). Of these 100,000 factors the number that were significantly different between suicides and controls and were reproducible over the three groups was zero. Some factors did not discriminate between suicides and controls. Others discriminated in one group but not in another. Decreasing the orb made no difference. The planets chosen by discriminant analysis in one group differed from those in another group. So did degree areas.

In other words this painstaking study failed to find any factor in a birth chart that was significantly related to suicide. Including death data made no difference. Astrologers given sub-sets of data were unable to distinguish between suicides and controls better than chance. [The next is from *New Insights into Astrology* 1993:311-329] Subsequent analysis of further tens of thousands of chart factors including the Vertex, East Point, and midpoints in declination still found nothing, nor did dividing the data according to the method of suicide (hanging etc). A comparison of aggressive vs passive suicides showed no more significance than suicides vs controls, which answered the vague objection from some astrologers that the lack of positive results was due to some "unknown property" of the controls. Press speculated that the failure to find a pattern was because a complex pattern might never replicate. Or because the computer had not been given enough data.

Comment She makes no reference to hidden persuaders nor to the futility of testing such speculations, for example how could a genuinely non-replicable pattern allow more than one suicide in the history of the world? But Robert Currey (*Correlation* 34(1), 31-57, 2021) claims:

it was impossible for Press and her team to find significant astrological patterns [because] there are multiple different journeys that lead to suicide, and this is reflected through evidence of many different confirming factors (p.54).

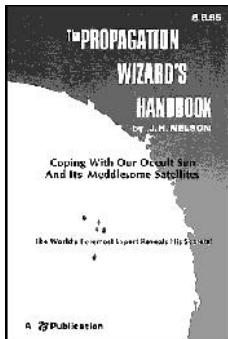
In other words what the birth chart shows (he says) is less the suicide and more the circumstances that led to it, which Press didn't know, hence her negative results. So he recalculated the planet/sign/house/major aspect frequencies in Press's suicides and controls, roughly 5% of Press's 100,000+ factors, but (and this is the fatal bit) without dividing into replicate groups because this "reduces or eliminates significance" (p.35), and then cherry-picked the resulting *p* values. The most significant factor was an unsuspected Saturn, but the crucial question (did it replicate?) could not be answered, so the whole exercise was arguably worthless. It filled many *Correlation* pages but added little to the debate. Especially as lack of aspects had already been tested by Press (see above), and had failed to replicate.

7.4.1978.1 Deaths in 23 fatal road accidents

Cornelis Kuypers, *Tijdschrift Astrologie* 2(1), 3-5, 1978.

Planetary aspects were studied in the charts of 23 victims of fatal road accidents. The orb was 7.5 degrees. In agreement with tradition, squares to the Sun and Mercury from Mars, Uranus and Pluto were more numerous than expected. In addition, primary directions were calculated for the nine victims with accurate birth times. The orb was 1°. The directed Ascendant was three times conjunct natal Mars, three times square Mars, once square Uranus, and once square Sun, all in agreement with tradition, and once without contacts. Accidents were chosen because they are a more objective criteria for testing astrology than, say, subjective responses to personality questionnaires. **Comment** This was NVWOA's first empirical study but the sample size was very small. For a follow-up study of 72 fatal road accidents see 7.4.1985.1.

7.4.1978.2 Nelson's 5507 predictions of radio quality



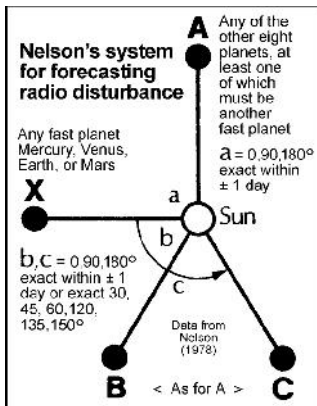
John Nelson, *The Propagation Wizard's Handbook* 1978, a detailed update of his classic "Shortwave radio propagation correlation with planetary positions" in *RCA Review* March 1951:26-34. In their day his results were seen as the best scientific evidence for astrology.

In 1923 Nelson began working in New York for The Radio Corporation of America, which became the world's largest shortwave radiocommunications organisation. From 1946 he was their propagation analyst and was probably the first person so employed in commercial radio. His duties included making forecasts for use by the RCA worldwide network handling over 50,000 messages a day. Shortwave radio operated at 3–30 MHz and was sensitive to interference and ionospheric disturbances which required continual frequency changes for best results. On average they lasted about 5% of the time, and at their worst could cause a communications blackout that lasted for several days. For RCA they were very bad news. After two years of work Nelson had developed a forecasting method based on the position, age, and activity of sunspots. But:

I was quite thoroughly disappointed and dissatisfied with sunspots because of their lack of reliability for forecasting purposes. My superiors in RCA were aware of my difficulties but instead of becoming critical they gave me much needed encouragement and told me to keep at it – *there had to be an answer*. I asked for and received permission to investigate the planets to see if their relative positions would reveal anything of value. ... I was given a free hand to go about the subject in whatever manner I thought would be promising. My superiors were very bold in making such an unorthodox decision, but ... the stakes were high and they were willing to take the gamble (p.25).

During more than thirty years of observation and refinement he developed a system of forecasting shortwave propagation quality based on the positions of the planets in relation to the Sun. According to Nelson, whenever the planets are in certain angular configurations they affect the Sun's activity, which affects the ionosphere, which in turn affects radio propagation

quality. He found that a disturbance is likely if, during the 24 hours of the day, there exists a heliocentric configuration as shown in the diagram below:



The minimum requirement is one hard angle ($0.90, 180^\circ$) plus at least two harmonic angles ($30, 45, 60, 120, 135, 150^\circ$) or three hard angles between unrelated pairs. The more angles there are the bigger the disturbance. The disturbance is enhanced if either X or A makes an exact hard angle to its node, or is exactly conjunct its perihelion, during that day. If neither A, B, nor C is a fast planet then the disturbance is only minor. X is usually Mercury. Nelson's limits are defined in terms of time rather than space because they are much easier to use when working by visual inspection of the ephemeris.

In other words, a configuration day is any day when two or more of the five innermost planets were in heliocentric conjunction, square, or opposition. Nelson comments that his system:

immediately created considerable interest in the areas of formal astronomy and formal astrology. I did not know it at the time, but ... what I had discovered with the planets supported astrology. The astrologers had claimed for thousands of years that conjunctions, squares and oppositions between the planets were bad

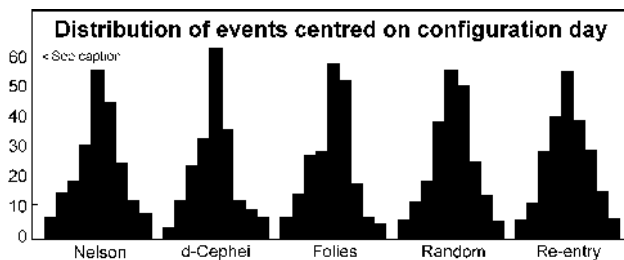
angles and created stress and other unfavourable situations. My discovery that the planets did the same thing to shortwave radio signals was received by them as confirmation of astrology and pleased them beyond words. ... In general, astronomers remained quiet about my paper probably realizing that an organization like the Radio Corporation of America would not have indulged in such a manner of research without a very good reason nor would they publish it. There was, however, one very bombastic astronomer [Hunter, see below] who published an article in an astronomical magazine ridiculing my work. I ignored him and did not bother to answer his charges. [I] really did not care what others, who had not investigated the subject, thought about it (pp.28-31).

Initially Nelson supplied two types of forecast to RCA, to its associated stations overseas, and to numerous branches of the US government. One was a forecast for the coming day in blocks of 4 hours, the other was a forecast for the coming month in blocks of 6 hours which was based on planetary positions. The daily was easier to do and was initially more accurate. But by the mid 1960s the monthly had become almost as good, so the daily was discontinued.

I have used this system quite successfully for over 25 years and the fact that it works is beyond dispute, but the explanation of why it works has eluded me. ... The average yearly accuracy for [monthly] long range forecasts has been close to 90% for the past 12 or 15 years (pp.4 & 69).

Until Nelson's death in 1984 aged 80, his daily forecasts for each month were published for nearly twenty years by the US amateur radio magazine 73 (in radio ham language "73" means "best regards"), which also published the present work.

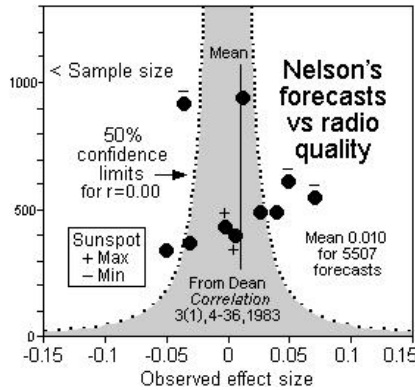
Comment An accuracy of 90% seems impressive. But in *Journal of the British Astronomical Association* (62, 194-196, 1952), the astronomer that Nelson had dismissed as "bombastic" showed that Nelson's results were likely due to an artifact: On average 1 day in 3-4 is a configuration day, whereas 1 day in 5-6 is a disturbed radio day. Over a year there will be more of the former than the latter, so the former will tend to occur close to the latter even if there is no actual connection. So any event (real or random) similar in frequency to a disturbed radio day will peak at day 0 regardless of whether they are actually related to configurations:



Distribution of actual disturbed radio days during the 1940s (which had led Nelson to adopt his system), maxima of the variable star δ -Cephei and matinees of the Folies Bergère during 1944, randomly assigned disturbances during 1942, and number of days on which a Russian *Cosmos* satellite returned to Earth through 1981. In each case there is a peak at day 0. So if Nelson's results prove a connection between planets and radio disturbance then they also prove a connection with a variable

star, the Folies Bergère, random events, and satellite re-entries, which even in astrology is absurd. Plots are based on: Nelson, *RCA Review*, March 1951, 26-34. AA Hunter, *Journal of the British Astronomical Association* 62, 194-196, 1952. Ianna & Margolin, *Skeptical Inquirer* Fall 6(1), 32-39, 1981. Meeus, *Skeptical Inquirer* 6(4), 30-33, 1982.

Cornelis Kuypers (*Wetenschap & Astrologie* 6(1&2), 38-45, 1982) finds that the comments of Hunter, Ianna & Margolin, and Meeus, and of Paul Couderc (*Que sais-je? L'astrologie* 1978:103-105), support his own view that Nelson's results are an artifact due to the greater number of configuration days.



Nevertheless a genuine planetary effect would produce results indistinguishable from those due to an artifact. To resolve this impasse Geoffrey Dean analysed 547 daily forecasts made by Nelson for RCA during 1964-1965 and 4960 daily forecasts made for 73 magazine during 1966-1982, a total of 5507 daily forecasts:

Effect sizes (as correlation r) for 5507 daily forecasts divided naturally into sets that are separated by missing forecasts or path changes such as a change from USA-England to Canada-Germany. Sunspot activity (+ -) has no consistent effect. Dean summarised his results as follows:

There was no significant correlation between forecast and outcome (mean r 0.010 for 5507 forecasts). The outcomes on days forecast as poor were not significantly different from the outcomes on days forecast as good. Nelson's forecasts performed considerably worse than US Government forecasts and a control forecast based on the quality one solar rotation before. The accuracy of 105 forecasts of solar flares was not significantly better than chance. To increase the sensitivity of the analysis a daily planetary index (computed by Colin James III in Denver Colorado with each factor said by Nelson to be significant being coded separately to allow individual analysis) was compared with observed radio qualities and geomagnetic indices. No planetary effect was detectable, nor was the alleged effect of nodes and perihelia. Contrary to Nelson's claims, hard aspects and associated harmonic aspects were not consistently more numerous on the most disturbed 3% of days during 1969-1980 than on the least disturbed 3% of days. In particular the 12 days with the most adverse planetary configurations during 25 years were not significantly different from those with the least adverse, although marginally in the right direction (abridged from *Correlation* 3(1), 4-37, 1983).

7.4.1979.1 Jacob Venker's Astrowatch



Jacob Venker, *Astrowatch Manual* 1979. A letter from Jacob Venker about his Astrowatch, with picture and prices, appears in *CAO Times* 4(3), 24, 1980.

In 1979, after seven years of development, the Dutch astrologer Jacob Venker launched his patented Swiss-built Astrowatch for astrologers. It shows the zodiacal degrees that are rising or culminating, and their opposite positions.

The circle of zodiac signs and ecliptic (= the offset circle in the centre) rotates clockwise once every sidereal day of 23h 56m 4.1s. At the top is the zodiac degree on the MC, here 15 Aquarius, set by pulling out and rotating the winder knob. In the centre are three fixed U-shaped lines for latitudes 19n00 (top), 39n30, and 51n31 (bottom). Using the central knob, you rotate the left-right arrow to where your latitude cuts the ecliptic circle. It then indicates the zodiacal degree rising (here 20 Gemini) or setting (here 20 Sagittarius). As the circle rotates, you re-adjust the arrow. The Astrowatch applied only to the northern hemisphere. A southern hemisphere version was planned but never produced.

The Astrowatch was accompanied by a printed 48-page A4 manual of instructions in English. In it Venker describes its benefits and possibilities for astrologers as follows:

It is remarkable that with this step back into the history of time reading, our whole lives can be seen in an entirely different perspective with extraordinary consequences. For example, with the sign of Gemini [communication] in the Midheaven, don't be surprised if you have an influx of phone calls ... discussions with Cancer [sensitivity] in the Midheaven may be vague or tense, while those held under Virgo [critical] may stagnate in hair-splitting details ... Seemingly a-causal happenings, those without apparent cause, are revealed to have almost miraculous interrelationships. The Astrowatch will be a continuous source of amazement to you (p.10).

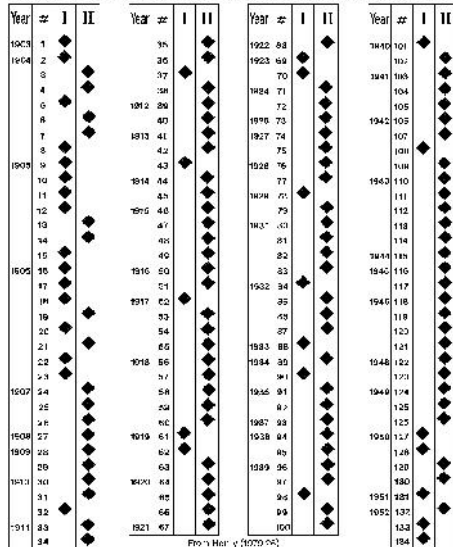
The Astrowatch was built with high precision and sold for 295 guilders including VAT, then more than the monthly rent of a small apartment. In the USA it sold for \$119. But it did not sell well and after a few years it was discontinued. For some Dutch astrologers it provided a series of practical tests (did the streets really become quiet when Capricorn was on the mid-heaven?) that led to much cordial debate about alternative interpretations.

Comment As far as we know, no controlled tests were made to see if its possibilities were realised. Today the Astrowatch is nearly forty years old but examples are still in good working order. The Astrowatch was cheaper than the Digistar, a \$350 US-made gold-plated digital sidereal wristwatch with 0.5-second-per-day accuracy but not showing the Ascendant or MC, see *CAO Times* 4(2), 2, 1980. The Digistar did not sell well and was soon discontinued. Today sidereal apps are available for smartphones to show where the stars are during the day and night for any given date and place on earth.

7.4.1979.2 Tomaschek's earthquake effect revisited

David Henry, *Siderealists* [USA] 25-33, Summer 1979. The magazine lasted less than ten issues due to lack of funds and too few subscribers. Rudolf Tomaschek (1895-1966) was a German physicist whose article "Great earthquakes and the astronomical position of Uranus" in *Nature* 184, 177-178, 1959 launched his "earthquake effect".

Placement of the 134 earthquakes in Group I or Group II



Twenty years ago Rudolf Tomaschek found that 39 of the world's 134 biggest earthquakes 1903-1952 had Uranus conjunct or opposition the MC, orb 15°, or nearly twice the expected frequency. I repeated his study using his source of earthquake data (Gutenberg & Richter's 1954 book *Seismicity of the Earth*) with the surprising results shown in the table. Each diamond is an earthquake. Group I earthquakes have Uranus conjunct or opposition the MC orb 15°. Group II have Uranus elsewhere. My results suggests that:

the Tomaschek Effect is seemingly an isolated phenomenon, occurring only in the period 1903-1906 and not afterward. After 1906 there is not another sequence of consecutive earthquakes in which there is a similar bunching of Uranus in Group I, with a possible exception of the quakes in 1950-1952 (p.25).

What could explain it? It could be due to chance, or to aspects from the outer planets, but this could be tested only by investigations beyond 1952.

Comment Henry's total for Group 1 is 35, four less than Tomaschek's 39. An explanation for the effect already existed because Tomaschek had calculated the expected frequency as 134 cases x 2 (conjunction or opposition MC) x 30 (2 x orb of 15°) / 360° = 22.33, which by chi-squared test vs the observed 39 gives a *p* of 0.00011. That is, he had assumed the diurnal distribution of Uranus was uniform, which is not the case. Not to mention his selection of the effect from a particular population after the event, which also invalidates his statistics. Here are the reasons why the diurnal distribution is not uniform:

Any slow-moving planet like Uranus in a *slowly* ascending sign, such as Cancer in northern latitudes, will spend more time above the horizon than below, and vice versa if in a *quickly* ascending sign. So the expectancy depends on the slow-moving planet's sign position, which will necessarily change only slowly. No effect linked to Uranus was found by Gauquelin (personal communication 1975) when this diurnal distortion was taken into account. Nor was it found by Mather, Michelsen and Shanks (personal communication 1977) in a computerised controlled study of all 900 earthquakes of magnitude >7 given by Gutenberg & Richter. For an orb of 10°, there were 95 out of 900 with Uranus conjunction or opposition the MC vs 91 for the controls. For comparison Tomaschek's calculation of 900 x 2 x 20/360 = 100.

Three years after his Uranus paper in *Nature*, Tomaschek published "Observations on the basic problem of astrology" in *Astrological Journal* 4(3), 10-14. 1962, in which he suggested that astrology might be explained in one of four ways – by direct causation, by triggering, by the correspondence between simultaneous events, or by the unity of everything. At the time this was seen as a considerable leap forward and it became quite popular. But no test procedures

were specified, without which the four "explanations" reduce to fruitless speculation. Ironically the explanation that actually applies (seeing faces in clouds) escaped mention.

7.4.1980.1 What is the best method of directions?

Gustave-Lambert Brahy, *Anthologie de la Revue Demain* c1980:205-225. In c1935, Brahy, editor of *Demain*, wrote to 16 of the most eminent authors in French, Belgian, Dutch and British astrology including Antares, Gouchon, Janduz, Knecht, Thierens, Volguine and Vivian E Robson. He asked three questions: What system of directions do you use? How well do other systems perform? What is your general percentage of success? The answers were thorough and occupied a total of 20 pages. Here is a summary of Brahy's conclusions (pp.223-225):

(1) Each practitioner follows a system that his experience has shown to be the best. (2) There is an absolute diversity of points that are impossible to reconcile. (3) Many see primary directions as the best, if mathematically complex, and there are several methods. Nevertheless primary directions seem to correspond fairly closely with the events themselves. It seems to be the most scientific method. (4) Secondary progressions are easy to apply and there is only one method. Some see them as applying less to the events and more to their causes. (5) Symbolic directions eg 1 degree = 1 year has many variations and some are quite fanciful. It has given convincing results but none used it exclusively, only as confirmation. It seems to be the least scientific method. (6) Solar Revolutions were regarded with favour but needed more study. (7) Each system was defended but none gave complete and perfect results. They sometimes differ by several years in their results, so it is best to use several systems and draw conclusions only when there are two or more confirmations of the same indication. (8) Despite the eminence of the participants, only four estimated their general hit rate (three said 80%, Leo Knecht said 75%). A few said "it depends" or it was "impossible to estimate". The rest remained silent. Brahy (p.205) drew on other sources and estimated that in most cases the hit rate did not exceed 80%. He concluded "It is hoped that readers will contribute to developing this sensitive issue of directions that remains, we must admit, a mysterious affair" (p.225).

Comment Today the issue is no longer a mysterious affair, see 7.4.1987.1 and 8.8.

7.4.1981.1 Donald Bradley's Jupiter Pluvius rainfall study

Colin James III, *Correlation* 1(2), 19-23, 1981.

One of Jupiter's classical names is Jupiter Pluvius (the Rainmaker). In the late 1950s the US astrologer Donald Bradley (1925-1974) found that heavy rainfall tended to occur when Jupiter was conjunct, square or opposite the local meridian when the Moon entered sidereal Capricorn prior to the rainfall. He suggested this supported an effect of both Jupiter Pluvius



and a sidereal zodiac. Other than the work of Nelson (radio disturbance) and Tomaschek (earthquakes), both discredited, it promised to provide hard geophysical support for an astrological idea. So it was important.

Moon conjunct Jupiter Pluvius. By Bernard Childe. From cover of *CAO Times* 3(2), 1977.

Previously unpublished data has aided my analysis of Donald Bradley's Jupiter-rainfall study, and the results show that his findings are an artifact of the Moon's sidereal period being nearly commensurate with the Earth's rotation. The average time between the Moon's successive entries into sidereal Capricorn is 27.32 days, during which time the Earth rotates 27 full circles plus 89°, while Jupiter moves about 2°. The difference is close to 90°, and it is this, compounded by Bradley's use of a wide 40° moving average, that explains his findings. Consequently they provide no support for either a connection between Jupiter and rainfall or the existence of sidereal effects.

7.4.1981.2 Coming record cold winters in the USA

RA Hughes PMAFA, *AFA Bulletin* 43(9), 293-296, 1981. A summary of GJ McCormack, *AFA Bulletin* November 1966.

Hughes feels that a lecture by the late renowned astro-meteorologist GJ McCormack at the 1966 AFA Convention is of vital interest today. McCormack claimed that the bitterest cold

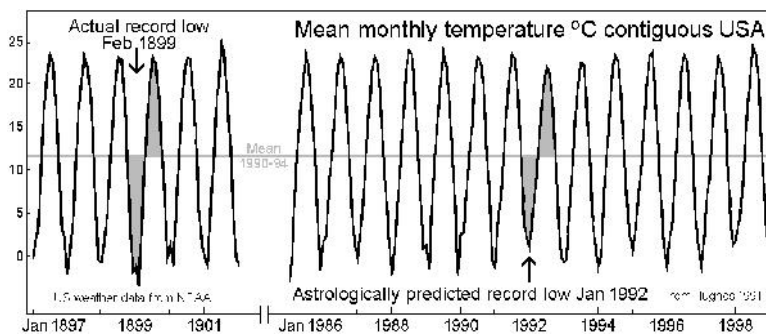
winters in the northern hemisphere occur when Saturn or Uranus reach their farthest south declination. The winter of 1898-1899 set all time record lows in Southern and Midwest states due to the conjunction of Saturn and Uranus in Sagittarius. So McCormack predicted that:

The winter solstice of 22 December 1991 will bring "Double punch cold waves. Worst January freeze in Weather History". All planets in this solstice chart except Jupiter and the Moon are in low southern declination. ... There is a lunar eclipse on 21 December 1991 in the last degree of Sagittarius and a solar eclipse on 4 January 1991 at 13.5° Capricorn. The solar eclipse is conjunction Uranus and opposition the Moon in the winter solstice chart (p.296).

The outcome could not be clearer:

An eclipse of the Sun conjunction Uranus in this period will time an intense cold wave ... and result in a record deep freeze when the Sun forms its conjunction with Saturn during the last week of January 1992 bringing about the lowest temperatures in weather history ... In this respect the chart of the winter solstice for 22 December 1991 is worth serious study ... [by people] who need to prepare in advance for severe weather conditions (p.296).

Comment Alas, McCormack's confidence was not supported by what actually happened:



Left: The actual record low of winter 1898-1899 was the lowest in the fifteen years 1895-1909, with February nearly 6°C below the 1990-1994 February mean. The difference is clearly visible.

Right: McCormack's predicted record low for January 1992 was the second warmest January in the fifteen years 1895-1999 and was 1.0° C above the 1990-1994 January mean. The difference is also clearly visible.

McCormack details his methods in his short book *Astro-Meteorology: A Textbook of Long-Range Weather Forecasting*, self-published in 1947 two decades before the above lecture, and republished in 2012 by Astrology Classics. In it he explains why astro-meteorology is important:

In our opinion, based on more than twenty-six years of specialised researches in connection with astro-meteorology, we are convinced that to abandon this research is to render the discovery of the laws which regulate the weather, hopeless. The federal meteorologists ... can venture fairly reliable forecasts of the weather 24 hours in advance. Beyond that period, [they are] confining weather forecasts mostly to prudent guesses.

But his mechanism (compared with convection and Coriolis forces) was highly implausible:

Every astro-meteorologist believes and knows, that when planets form certain angles with the Sun and earth, certain known influences are the result. These influences appear to arise from the light reflected by each planet into our atmosphere, which light acts chemically or electrically, according to its nature.

Important aspects were of three kinds: good (30, 60, 120, 150), bad (45, 90, 135, 180), and neutral (0 and parallels of declination). Stationary planets had increased strength and their influence could last for weeks or months. The outcome agreed with tradition:

When heavenly bodies of contrary nature are combined under these configurations, changes of winds and distribution of atmospheric pressure are conducive to atmospheric disturbances.

McCormack's research was continued in the US by astro-meteorologist Carolyn Egan (1939-2015), who developed the focus on declination. But neither evaluated their work by appropriate statistical techniques, without which their claims mean little. Indeed, given that all possible weather conditions exist all the time somewhere on Earth (and sometimes in just a small area such as the UK), why should anyone believe that astrology could be useful and convenient (as opposed to looking at the calendar or out the window) in the first place?

7.4.1983.1 Kitten breedings disconfirm chart links with death

Marc De Schrijver, personal communications 1979-1983.

Cats have multiple births which provide ready-made controls. They usually have distinctive fur

colours from birth which helps to prevent confusion of identity. And their independent nature and highly-developed central nervous system makes them more like human beings than are rats or dogs. In cat breeding, kittens not of the required fur colour are humanely destroyed within ten minutes of birth. In three unpublished experiments Swiss researcher Dr Marc De Schrijver recorded the time of each kitten's first cry after birth to the nearest 10 seconds using a chronometer calibrated against a radio time signal. Chart positions were calculated to within 1 second of arc. The number of kittens involved in each experiment, and the interval between successive births, were:

5 kittens: 40, 32, 8, 35 minutes. Total 115 minutes. Two non-survivors (#3 and #4).

4 kittens: 11, 11, 38 minutes. Total 60 minutes. Two non-survivors (#2 and #4).

3 kittens: 2, 46 minutes. Total 48 minutes. Two non-survivors (#1 and #2).

Over the small time span of the kittens' births the only chart factors that varied were the Ascendant and MC in aspects, midpoints, and sign sub-divisions such as dwads. But when De Schrijver analysed these factors (all measured far more precisely than in normal astrological practice) he found none that, either alone or in combination, distinguished between survivors and non-survivors at better than chance level. A correlation between astrology and events was nowhere in sight. **Comment** Suppose a death factor was known, allowing an instantaneous death index to be computed. The destruction of kittens born at minima would immediately deny the reliability of astrological predictions, or at least show they could be overridden.

7.4.1983.2 A quantum leap in astrological prediction?

Roy Whitney, *Astrological Predictions: A Revolutionary New Technique*. ACS 1983.



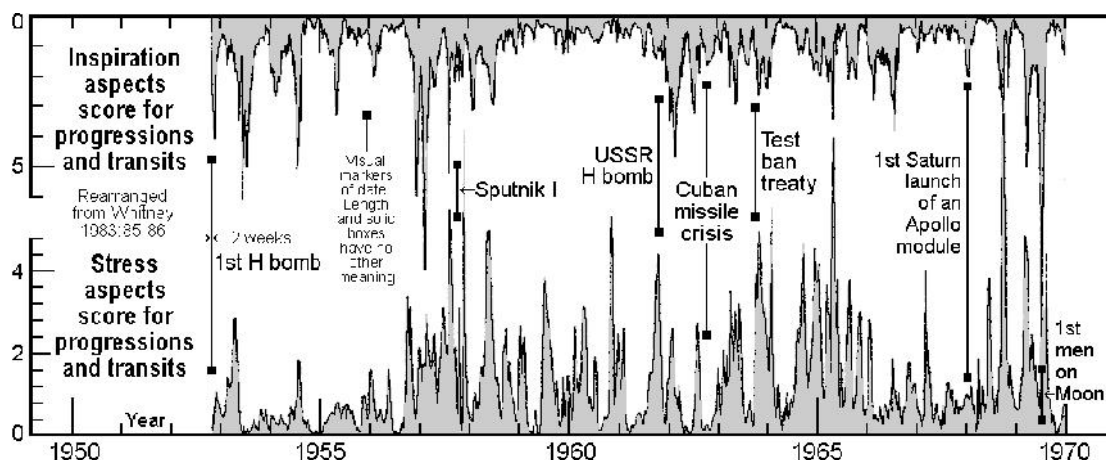
Based on secondary progressions and transits involving ten planets, the Moon's north node, ascendant, MC, and vertex. For successive dates two weeks apart the author calculates a score for progressions and transits taken together, based on two types of angular separation: **(i)** $360^\circ/i$, where **i** = 1, 3, 5, 7, or 9, and **(s)** $360^\circ/s$, where **s** = 1, 2, 4, 8, or 12. He finds that type **(i)** tends to indicate events involving *inspiration*, and type **(s)** tends to indicate events involving *stress*. The score is the sum of angular separations weighted by:

- the orb, weight = e^x where $x = -\text{orb}^3$ (so $e^x = 1$ at 0° and 0.1 at 1.3°).
- the aspect, weight either $1.5/i$ for the **i** series or 1 through $1/4$ for the **s** series.
- the planets, weight range 1-9, eg 1 for SO-SA and 9 for SO-MO.

In mundane work the author uses three relevant natal charts, and multiplies their scores for the same future date (he claims it gives more accurate results than adding them). Finally he divides the result by a suitable constant such as 700 to bring them within the range 0-5. His approach and weights (called Dynamic Astrology) were arrived at by trial and error, but he gives no details.. Unsurprisingly the calculations require a computer, which is programmed to print out a plot of **i** and **s** scores versus years in which the peaks are said to predict important future events (see example plot below):

The author gives nearly 90 such plots, claiming they are "a quantum leap beyond conventional astrology [and] one of the guiding lights of the future" (p.116). **Comment** The plots seem impressive but the author presents no replications, no controls, and no analysis of the claimed accuracy, so they are impossible to interpret. Much is not explained, and the descriptions are generally so unclear that the book is more a quantum leap into incomprehensibility. UK computer programmer, specialist chart rectifier, and AA book reviewer Chester Kemp comments:

Looking at the various graphs that are presented I can clearly see some striking correlations, however I also see an awful lot of 'peaks' for which there is no explanation. ... [as for the author's algorithms] I doubt that many people will make any sense out of them. The presentation of them is quite dreadful ... Dynamic Astrology appears to be a product of self-indulgence exaggerated by the computer mystique (*Astrological Journal* 27(1), 60, 1985).



Combined *i* scores and combined *s* scores for the natal charts of three major events that occurred on the left outside the box (first test of plutonium bomb 2 Dec 1942, Hiroshima bomb 5 Aug 1945, first USSR bomb 29 Aug 1949). The scores are plotted ahead for 1953-1970 together with the important events the peaks are said to predict. For easier comparison the top plot has been inverted and all peaks have been greyed. There are so many peaks that the correspondence with actual events needs to be analysed statistically to see if it exceeds chance expectancy, but in his book the author presents no such analysis. The original plots are from Whitney (1983:85-86).

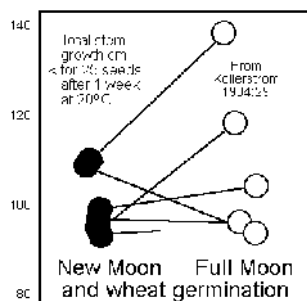
7.4.1984.1 Lunar phase and wheat germination

Nick Kollerstrom, *Correlation* 4(1), 25-31, 1984.

In her 1936 book *The Moon and the Growth of Plants*, Lili Kolisko describes experiments made in greenhouses that showed germination was best in the days prior to a full moon. However, attempts to replicate her findings in 1940-1942 (published in the *Journal of the Royal Horticultural Society* 66, 358-366, 1941 and 67, 264-270) were failures. In 1946 a review concluded:

The only experimental evidence for the existence of lunar influence on the growth of land plants is that published by L. Kolisko. All other investigators in many parts of the world have been unable to discover any consistent correlation between the moon and the vital processes of land plants (*Nature* 158, 572-573, 1946).

However, in the 1950s the advent of temperature-controlled laboratories (which were not available to Kolisko) suggested that a further attempt at replication was in order. Every Friday 25 seeds (none cracked or broken) were taken from a large jar of wheat, soaked in distilled water for 2-3 hours, and spread on gauze supported over distilled water. The seeds were thus kept damp and could send roots into the water. The whole was kept in the dark at 20°C. After seven days the length of each seedling was measured and then summed to avoid having to calculate a mean (the distribution of lengths was highly skewed and non-normal). The study continued for six months. The results were generally erratic, with a downward trend possibly due to deterioration of the seed stock, and a high sensitivity to temperature (a 1°C increase led to an increase in root length of roughly 10%). Nevertheless, consistent with Kolisko's claims, stem lengths in the week before FM averaged 8% longer than those in the week before NM.



Comment The author plotted stem lengths against date. Here they are plotted against superposed NM-FM periods, using the date closest to NM or FM, or interpolating if no date was close. The resulting lack of sync has caused variations in the vertical alignment, which is here of no consequence. According to Kolisko, the period from NM to FM gives superior germination, in which case the open circles should be higher than the closed circles to which they are connected. This is true of three NM-FM cases but not of the remaining two. Unfortunately the noise level is too high to be sure if these results mean anything.

7.4.1985.1 Deaths in 72 fatal traffic accidents: A follow-up

Cornelis Kuypers, *Wetenschap & Astrologie* 9(1), 2-14, 1985.

In two parts. (1) 72 victims of fatal traffic accidents, all with birth times, were analysed for

primary directions by the Sun, Moon, and Ascendant through natal signs. [There are several kinds of primary direction. Here the directed motion is 1° of right ascension per year.] The results showed that Libra, Capricorn and Pisces were over-represented but not significantly so. The pattern for a control group of 72 cases was more even. (2) The same 72 victims were analysed for *natal square* aspects of orb 7.5° . The total number of aspects was 94 vs 72 expected assuming uniform planetary motion ($p = 0.007$), and the most common pairs were Asc-PL, ME-MA, ME-UR, and ME-PL. By contrast there was no excess of trines, with 73 observed vs 72 expected assuming uniform planetary motion. In both cases the effect was small but was in agreement with the results of the author's study in 7.4.1978.1 of 9 victims (ie those with accurate birth times) of fatal traffic accidents. He concludes that the validity of aspects is demonstrated, but will need to be confirmed by a larger study. **Comment** But see next.

7.4.1985.2 Critique of follow-up to 72 fatal accidents

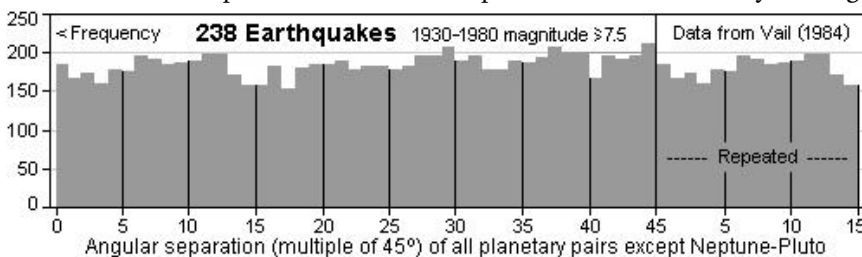
Françoise Gauquelin, *Wetenschap & Astrologie* 9(2), 19-20, 1985. Includes her comments in *APP* 3(3), 22-24, 1985.

(1) Kuypers' 72 cases were obtained from astrologers' articles, so they were likely to support astrology. 30 new cases taken mostly from newspapers failed to show the same strong excess of natal squares (only 33 vs 30 expected). (2) The assumption of uniform planetary motion is not sufficiently valid to give accurate expectancies, especially for the Ascendant. (3) Three sets of violent deaths analysed by Michel Gauquelin in *L'influence des astres* (409 writers killed in WW1, 34 fatal accidents, 623 executed murderers) showed only non-significant numbers of aspects between Sun, Moon, Ascendant and Mars, Saturn, Uranus, Neptune. So Kuypers' conclusion (that aspects are valid) is not justified. **Response** from Kuypers in *AinO* 1(1), 2-5, 1986. Inaccurate expectancies seem unlikely to explain some of my results. For example, when the planet was conjunct the Ascendant, Uranus was above the horizon in 6 out of 8 cases, and Pluto was above the horizon in 9 out of 11 cases. I did not refer to Gauquelin's results because only 34 of his cases were similar to mine. Also he did not include Pluto, and my earlier research had already shown that Saturn and Neptune were not involved in violent deaths. **Comment** Kuypers' positive conclusion is not supported by 7.4.1986.1 and 7.4.1986.2.

7.4.1985.3 Planetary links with earthquakes

Scott G Vail, *Kosmos* 14(1), 2-10, 1985. "Using accurate earthquake data, it may be possible to form a bridge between astrology and the established sciences. If this is successful, we may at once revolutionize the outlook of the scientific world and decipher the inner workings of astrology to a much greater degree than has before been possible" (p.2).

All earthquakes of magnitude ≥ 7.5 during 1930-1980 were analysed. Saturn was more frequently on the MC than the average frequency, more for the largest magnitude earthquakes than for the earthquakes most destructive of human life, which suggested its effect is directly physical rather than symbolic. Results for heliocentric aspects were more consistent than for geocentric aspects, and a plot (pictured) of angular separations at 5° intervals for multiple-of- 45° heliocentric aspects showed a buildup before 45° followed by a trough, with peaks tending



to occur at multiples of 7.5° and of 11.25° . There was no statistical test but the author felt that even small peaks should be significant because each degree was represented by at least 150 planetary pairs. Multiple of 45° heliocentric aspects orb 4° for all planetary pairs except those between UR, NE, PL (and of course those involving MO) were slightly more frequent (mean 23.0 per pair) for separating aspects than for applying aspects (mean 19.4 per pair). The author concludes "a correlation does exist, one that is, in fact, remarkably strong" (p.7).

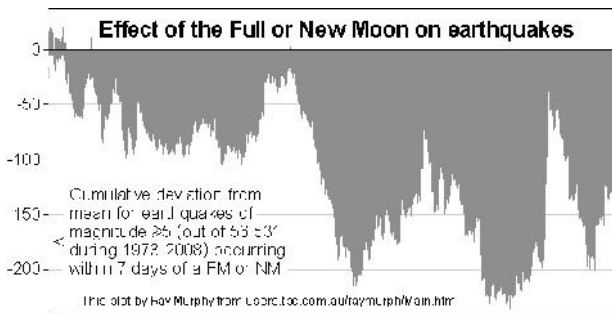
Comment Saturn is likely to concentrate at the MC for the same reason that Uranus was wrongly reported to concentrate at the MC – the expectancies were incorrect, see 8.8.7. By chi-squared test the above plot is not even marginally significant ($p=0.49$ $df=44$). The sample was not divided to test replication, nor was there recognition of the artifacts that arise when aspects occur more frequently than the events, so the former will tend to occur close to the latter even if there is no actual correlation, as in Nelson's work on aspects vs radio disturbance in 7.4.1978.2, and in Johnston's analysis of aspects vs earthquakes in 7.4.2016.2. The artifact will arise whenever the events or births being studied are less frequent than the chart factors, which will potentially be the case if they average more than a few months apart.

Published scientific studies over the past century have found a small solar-lunar tidal effect on earthquakes but it is too small to be of practical use (*Earth and Planetary Science Letters* 278(3-4), 370-375, 2009). Indeed, the analysis below of 56,531 earthquakes of magnitude ≥ 5 within seven days of Full Moon or New Moon, ie when solar-lunar tidal effects are at their strongest, found a very slight but opposite tendency – if anything earthquakes tended not to occur at times close to Full or New Moon. If the Moon has no clear effect then the much smaller (by

factors of 10^2 to 10^5) gravitational pull of the planets at their closest are likely to have even less effect.

Grey area shows cumulative deviation from mean number of earthquakes magnitude ≥ 5 that occurred within seven days of Full Moon or New Moon during 1973-2008. If Moon had an effect the grey area would be positive with a rising trend, but it is mostly negative with a falling trend.

Tectonic plate movement (which averages 1 cm a year) takes place in a series



of jerks. A large jerk that releases the accumulated stress of a century in a shift of a metre or more is a major earthquake. Celestial effects are conceivable because once stress has built up, a small force can in principle trigger its release. But they are unlikely to be useful because too many terrestrial factors are relevant – a point confirmed by the studies in 8.8.7. This does not mean their effect must be zero, only that there is no hope of them being reliable in prediction. In other words, earthquakes are unlikely to be a fruitful topic for astrological research.

7.4.1985.4 How significant are numbers in astrology?

Wendy Cohen, entry for the Superprize February 1985. An unusual approach that should interest numerologists.

The author suggests that numbers are a way to prove that astrology is a science:

My premise is that the numbers assigned on any given horoscope will in fact provide considerable information regarding the growth and life pattern of the individual. Those numbers referred to are the numerical values calculated in any given chart, whether it be natal, progressed, solar return or relocation. ... It is my belief that these numbers are *not arbitrary*, that the combination of numbers, degrees, minutes and seconds, as calculated arithmetically for the given time of birth for a person or event ... yields information with respect to ... the life of that individual or event.

She proposes that the actual degree and minutes/seconds correspond with the age in years at which significant events happen. Examples: Her MC is at $11^{\circ} 28.9'$ of Cancer, and her younger sister was born when the author was 11y5m old, and came to live with her when she was 28.9 years old. A male client's Sun was at $7^{\circ} 4.7'$ of Capricorn and 4.7y was his age on arrival in the USA. A female client's solar return chart had the Moon at $18^{\circ} 23' 34''$ of Pisces, and 18, 23 and 34 were her precise ages at which she began significant relationships. The author concludes:

At the risk of repetition, the numbers show a value that is simply calculated for a horoscope of one type of another ... there are no other forms at work here ... [its simplicity] may be the reason it has been so long overlooked.

Comment The author did not use controls, so it would be easy to dismiss her results as after-the-event capitalising on chance. But an open-minded astrologer might wonder whether another side of astrology exists – one that for completeness must surely demand more study.

7.4.1986.1 Deaths in 72 fatal traffic accidents: Houses

Cornelis Kuypers, *AinO* 1(1), 6-8, 1986.

What is the Placidus house position of the planets that made squares in the natal charts of 72 victims of fatal traffic accidents? (see 7.4.1985.1) For the 140 planetary positions in the 70 square aspects between the Sun, Moon, Mercury and Mars, Uranus, Pluto (fewer planets than were counted in 7.4.1985.1), there are 28 positions in angular houses (houses 1, 4, 7, 10), considerably fewer than the roughly $140/3 = 47$ expected, assuming uniform diurnal motion, which difference is highly significant $p = 0.0008$. There are also 59 positions in succedent houses (houses 2, 5, 8, 11), rather more than the 47 expected, which difference is significant $p = 0.027$. **Comment** Normally we formulate a hypothesis and then test it with data. But for almost a decade Kuypers searches for a hypothesis that fits his data. Of course he eventually finds one, but we might predict that a replication study is unlikely to confirm it.

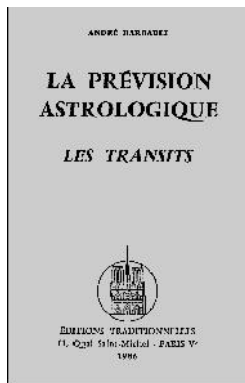
7.4.1986.2 Deaths in 72 fatal traffic accidents: Primaries

Cornelis Kuypers, *AinO* 1(1), 23-29, 1986.

A further study using the same sample of 72 cases from 7.4.1985.1. This time the primary directions from the Ascendant to natal planets, and from natal planets to the Ascendant, were calculated. The orb was 1° . There was a significant surplus of conjunctions, squares and oppositions to and from the Sun, Mars, and Uranus, each planet totalling respectively 10, 13 and 9 aspects vs 3.2 expected, assuming uniform motion, for which $p = 0.01$, 0.0001, and 0.05 respectively, but not for the other planets or directed MC. However, as the orb increased through 5° , the totals became non-significant and they became more even. **Comment** Which is consistent with an expected bias due to non-uniform diurnal motion.

7.4.1986.3 Yes, develop transits not prejudice

André Barbault. Based on many of his articles including his book *La Prévision Astrologique: Les Transits* 1986.



This 324-page book is a revised 1986 version of Barbault's *La Prévision de l'Avenir par l'Astrologie* [Predicting the future by astrology] 1980, the fruit of more than fifty years of work. Barbault notes that prediction has involved both sacrilege (unveiling secrets of the gods) and ridicule (it is reckless). Yet we have always wanted to know what tomorrow will bring. So we should not allow prejudice to stop the development of astrological prediction. The way ahead is to engage in clear predictions of historically significant events. True, the successful result is never known in advance, but that is no reason to despair at lifting the veil. **Comment** Most of his book is filled with birth and event data, and of course many amazing correspondences, but there are no tabulated lists of hits and misses, and no controls. So there are problems. For example

US astrologer Joanna Ashmun had found that transits in her chart were more fruitful than progressions and solar returns (*Seattle Astrologer* 13, 7-8, 1983:8). But the planets in her chart (16 November 1948) were spread fairly evenly through the degrees, so transits tended to occur in succession. She found there were always suitable transits to match major events, and equally as many transits with no matching events. Using midpoints made the situation worse. In other words astrology filled every moment with so much meaning that it became silly. She then asks "how can we be confident that it does not produce the same kind of silliness – albeit obscured by elaborate methods and rationales – in every other chart?". In the same issue US astrology researcher Dale Huckleby finds that his own chart fits major events in his life when examined after the events, and also imaginary events in any month in any year. He concludes that astrology explains past events because there is always a match between any birth chart and any event. More to the point, "because it predicts all things at all times, astrology actually predicts nothing at all" (p.6). See also the next two summaries.

7.4.1986.4 Jupiter transits at 834 political elections

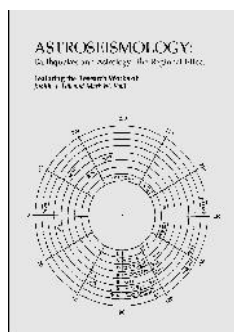
Grazia Bordoni, Ciro Discepolo, and Vincent Grilli, *APP* 4(3), 22-23, 1986.

Statistical investigation of 834 elections of politicians to the Italian Government were carefully conducted by a group of astrologers from the South of Italy. Bias was avoided by taking *all* representatives of *all* 44 successive governments of the Italian Republic from the date of its creation to the date of our study. Tradition says there will be more transits (conjunctions and trines) by Jupiter to the natal Sun, Moon, Ascendant and MC on the day of their election than in a control sample of the same subjects with election dates randomly generated within three years of the actual election date. The average frequency of Jupiter transits was slightly higher in the experimental group (0.399 vs 0.355) but by t-test the difference was not significant ($p=0.14$). We had planned to test transits by Venus, Saturn, Uranus, Neptune and Pluto, but the disappointing results for Jupiter (traditionally the most relevant planet) stopped us.

7.4.1986.5 Planetary links with earthquake groups

Judith Hill and Mark Polit, Correlation of earthquakes with planetary position – the regional factor. *NCGR Journal* 5(1), 9-16, 1986. Canadian astrologer Kenneth McRitchie (*Journal of Consciousness Studies* 23(9-10), 153-179, 2016)

calls it an "exemplary" peer-reviewed study whose "highly significant results ... consistent with astrological theory ... suggest that predictive algorithms can be created for each earthquake region based on its astrological and seismic history." (p.174). The original *NCGR* article was included with two follow-up studies by Hill in *AstroSeismology* (self-published, c.2012).



Hypothesis: earthquakes grouped by geographic region will show similar planetary patterns. **Method:** from all earthquakes of magnitude ≥ 8.0 on the Richter scale during 1900-1976, the authors picked those that were >1 year and <200 miles apart and grouped them into 5 regions with 3 earthquakes each and 9 regions with 4 earthquakes each. Similarity was deemed to be present in four ways *abcd* when any two earthquake charts in either group showed:

- (a) Same planet occupying the same sign. (b) Same two planets occupying the same two signs.
(c) Same two planets occupying the same element. (d) Same two planets occupying the same two elements.

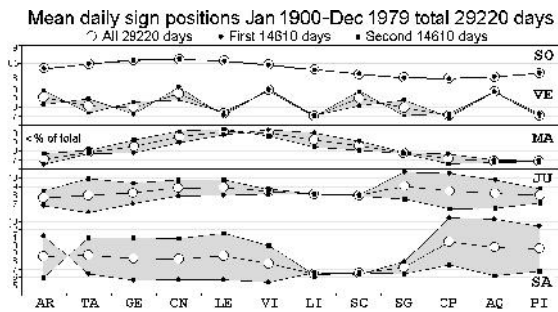
Planets were restricted to Sun, Venus, Mars, Jupiter, Saturn. Excluded were planets beyond Saturn (periods exceeded the data span of 76 years), the Moon (dates were without times), Mercury (linked too closely with the Sun), and Sun-Venus relationships (tend to occur in the same sign). When the mean counts for each of the four similarities *abcd* were compared with the mean counts on three or four random dates picked via a random number generator during 1900-1980, with no two dates less than a year apart, and repeated 1000 times, the earthquake charts showed more similarities than the random charts:

Number of groups		Type of similarity >>	Mean number of similarities per group				
			a	b	c	d	Mean
Groups of 3 charts	5	Earthquakes	1.60	0.20	2.60	0.80	1.30
	1000	Random dates	1.19	0.11	1.17	1.17	0.91
Groups of 4 charts	9	Earthquakes	3.05	0.82	2.85	6.31	3.26
	1000	Random dates	2.26	0.21	2.31	2.56	1.84

The authors noted that some regions showed fewer similarities than random dates while others showed a strong excess of similarities. But the overall excess shown by the means was seen as significant support for the hypothesis even though "rigorous statistical analysis on a larger sample are [sic] needed to firmly establish the correlation" (p.9).

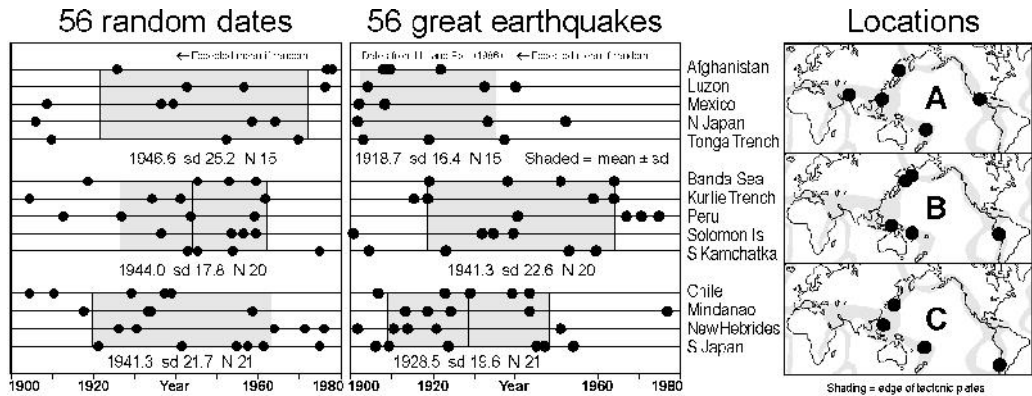
Comment 1 The authors give no probability calculations, no maps of earthquake locations to identify regions, and no plots of earthquake dates. But the retrograde periods of VE, MA, JU, SA makes the matching of controls to the earthquake samples especially critical because it is not achieved by sampling 1900-1980 at random no matter how many times it is repeated.

The problem is best illustrated by the mean times spent by each planet in each sign:



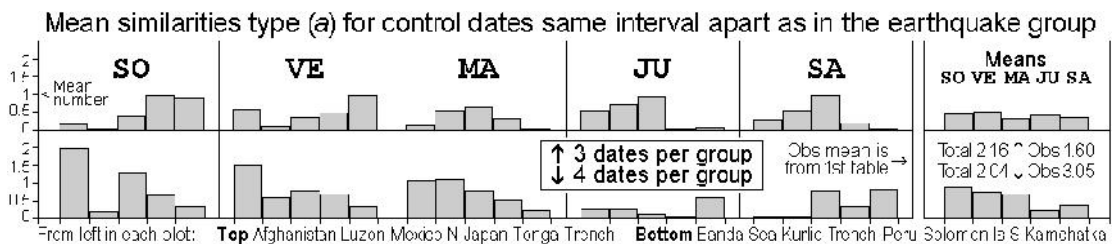
On moving from SO to SA the % of time spent in each sign becomes increasingly different from the simplistic mean of 1/12 (8.33%) depending on the time period.

The mismatch will be made worse because the physics of earthquakes predicts that the location and timing will not be random, a point confirmed by comparing the location and timing of the authors' 56 great earthquakes with 56 random dates as shown below. All dates are for 1900-1980:



Great earthquake 1900-1976 compared with random dates. **A** shows the 5 regions of 3 earthquakes each, **B** shows 5 regions of 4. **C** shows 3 regions of 5 plus 1 of 6 (all reprocessed to give 4 of 4). Nearly all earthquakes occur on the Pacific rim so there is no clear grouping in the geographical sense even though the authors claim that such grouping was central to obtaining their results (see article title). By *t*-test the mean dates and sds for the three random groups agree at chance level (mean *p* 0.79) but not the mean dates and sds for the three earthquake groups (mean *p* 0.06).

We can obtain a better control sample than the above random dates by (1) replacing them with dates the same interval apart as in the earthquake group, and (2) applying them to as many consecutive days as possible within the authors' 1900-1980 period. In other words we keep the original intervals between a group's earthquake dates and sweep them through 1900-1980, one day at a time, for every possible day that the unbroken sequence allows. When we do this, we get for each planet the mean numbers of type *a* similarities shown below. Each mean = (total number of cases with the same planet in same sign)/(total number of cases):



For each planet the two distributions tend not to replicate, most noticeably for SO and SA, and there is no consistent difference between benefics (VE and JU) and malefics (MA and SA). The number of control tests per group (mean 15,978) is much higher than Hill and Polit's 1000. The results deny a link between planets and earthquakes.

The previous type *a* differences between earthquakes and random dates (1.60 vs 1.19 and 3.05 vs 2.26) are disconfirmed (they are now 1.60 vs 2.16 and 3.05 vs 3.04). The first difference is now in the wrong direction, and by *t*-test (assuming the sd's for earthquakes are the same as for controls) neither difference is significant (*p* = 0.18 and 0.98 respectively). The considerations for type *a* also apply to *bcd*, so similar outcomes for *bcd* are likely.

But the problems don't end there:

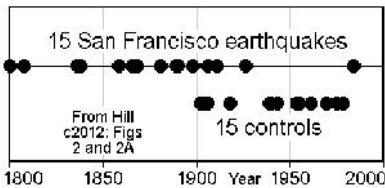
In Hill and Polit's article it is unclear to what extent the criteria for inclusion and analysis had been decided in advance, or why signs were involved when even in 1986 they were the most disconfirmed chart factor in astrology, or why existing astrological studies of earthquakes (see 8.8.7) were ignored when none had found convincing evidence of a connection. Indeed, the presentation in this supposedly "exemplary" study is so lacking in rigour that it not hard to see it as being swayed by entrenched beliefs. **End of comment 1**

After their article had been submitted for publication, Hill and Polit extended their sample to have a total of 157 earthquakes in 14 regions, plus a t-test, which when analysed in the same way as before gave similar results although smaller in magnitude than previously obtained:

Type of similarity >>	Mean number of similarities per group				Difference		>> by t-test
	a	b	c	d	Mean	sd	
Groups of (Earthquakes	2.48	0.44	2.85	4.96	2.68	1.85	$p = 0.46$
4 charts (Random dates	2.26	0.21	2.31	2.56	1.84	1.09	
Previous for 9 regions	3.05	0.82	2.85	6.31	3.26	2.27	

Despite the nonsignificant p value, The authors conclude that "the stability of results clearly demonstrate the validity of [the] hypothesis" and that "lack of gravitational pull associated with most of the bodies studied rules out gravity as a significant contributor to the results" (p.32). But they offer no predictions that would test their "valid hypothesis". One of their stated aims was to study the ancient belief that the Sun conjunct or square the Moon's node coincided with peaks in earthquake activity, but nothing involving the Moon's node appears in their results, even though the Moon would seem to be the most likely influential factor.

Comment 2 The above extended sample is open to the same artifacts as before. In her *AstroSeismology*, Hill provides two supposedly confirmatory studies, but each is open to the

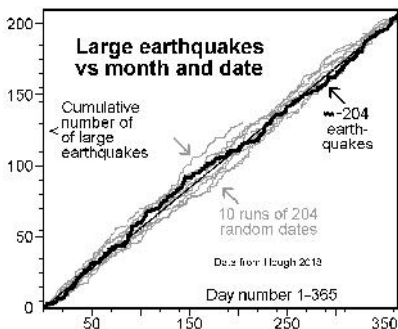


same artifacts, often with an extraordinary misalignment between earthquakes and controls as in this example:

Here this supposedly confirmatory study largely fails to put controls in years that have earthquakes while favouring years without earthquakes, in each case by not taking months into account, which defeats the whole purpose of controls and can hardly fail to give misleading results.

In a recent USGS study of all great earthquakes of magnitude ≥ 8.0 (the same earthquakes as those studied by Hill and Polit but in a sample that is complete rather than selected), seismologist Susan Hough (*Seismological Research Letters* 89(2A), 577-581, 2018) notes that:

Enduring popular lore holds that great earthquake rates are modulated by outside factors such as tides and/or moon phases, weather, and sun spots; such notions are often the basis for earthquake predictions made by non-specialists. ... For example, noted astrologer Richard Nolle wrote on his website: "When the moon goes super-extreme, chaos will ensue: huge storms, earthquakes, volcanoes, and other natural disasters can be expected to wreak havoc on earth".

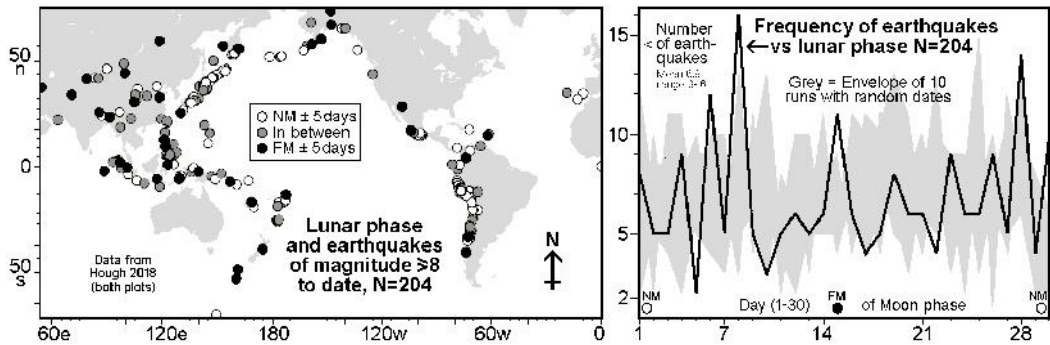


In response, she plotted against the yearly day number (1-365) the cumulative number of all great earthquakes magnitude ≥ 8 that were reliably timed and located, taking care to avoid obviously dependent events such as after shocks occurring within ten days. If for physical or occult or astrological reasons any particular day or month was conducive to earthquakes, a cumulative plot of earthquake numbers vs day numbers (left) should show significant departures from similar plots of random dates. But there are no obvious departures, and when tested none are significant:

The occurrence of even a few well-known earthquakes on the same calendar day can give rise to public misperception that certain days are somehow predisposed to have more earthquakes. However, apparent clustering and anticlustering is notoriously common in random data (eg Shearer and Stark, *The global risk of big earthquakes has not recently increased*, *Proceedings of the National Academy of Science United States of America* 109(3), 717-721, 2011).

To test the enduring popular lore about moon phases, Hough plotted the same 204 great

earthquakes against lunar phase. Such earthquakes are infrequent but on average occur roughly once a year, which is an interval and strength both large enough to avoid complications and thus allow lunar influences to shine through. Here are her results:



Left: Each great earthquake has a circle showing its location, and its lunar phase divided into three roughly equal parts – ten days around New Moon, ten days around Full Moon, and ten days in between. For simplicity Hough took each lunar month as a full 30 days long (the actual average length is 29.53 days, varying between roughly 29.26 and 29.80 days due to the perturbing effect of the Sun's gravity), which introduced a slight undercounting of about 2% on day 30, the day before the New Moon on day 1. The concentration of earthquakes around the Pacific Rim is very clear, but the same is not true of a lunar influence, where there is clearly no preference for a particular phase.

Right: the earthquake counts for each day of Moon phase show seemingly impressive peaks, but they do not fit any lunar harmonic. Their variation is as expected for their small sample size, and in general they lie within the envelope of ten plots using random dates. In other words lunar phase has no discernible effect. Now compare the plot near day 7, where the gravitational forces of the Sun and Moon oppose each other to create minimum tides, with the plot near day 23, where the forces augment each other, creating maximum tides). If anything the difference is opposite in direction to that expected if the Moon had a tidal effect on earthquakes.

Hough compares the total earthquakes that occur on days when the count is *above* average, with the number that occur on days when the count is *below* average, irrespective of date, month, or lunar phase. The difference is about 5% of the mean. Here all potential influences (physical and astrological) have been ignored so the difference has no obvious interpretation. Since there is no apparent way of calculating in advance the days to be used, the result is effectively useless. Nevertheless it represents the maximum effect that the Moon could have on these particular earthquakes – but even then 5% is of no practical use for earthquake prediction, especially when great earthquakes are as infrequent as these are.

Coming back to Hill and Polit's study, the conclusion is self-evident: If the Moon has no clear effect, then the very much smaller – by a factor of 10^2 to 10^5 – gravitational pull of the planets at their closest is likely to have even less effect. So the authors' denial of gravitational factors is unsurprising, as is their failure (when faulty procedures are corrected) to find astrological effects. A direct astrological analysis (see 7.4.1985.3) also failed to detect a lunar influence. For an astrological earthquake study with fatal errors see 7.4.2016.2. Given McRitchie's view of Hill and Polit's article as a definite "exemplary" peer-reviewed study, a case for applying his standards to astrological research and to peer-review would seem to disappear.

7.4.1987.1 Primary directions at 134 deaths

Rudolf Smit, *AinO* 2(1), 24-33, 1987. Includes his results for fatal accidents from *Correlation* 7(2), 2-8, 1987.

Primary directions were analysed at death for 72 fatal accidents in Holland (data from Dutch astrologers including Cornelis Kuypers) and 62 suicides in New York (data provided by Nona Press from her collection of 311 suicides with timed births, see 7.4.1977.3). Of these 22 and 26 had birth times recorded to one minute.

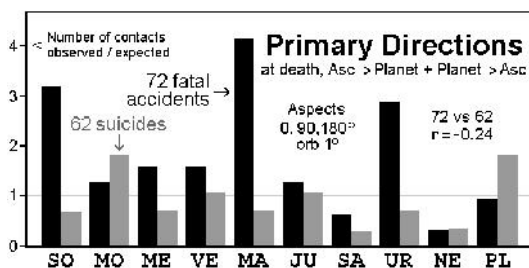
Comment There are several kinds of primary directions. Here the natal positions of planets, angles, and Placidus house cusps are directed at the rate of one degree (in ecliptic longitude) of solar motion over the MC per year of life. For example, for an event at age 40, you advance the natal Sun by 40 days of motion, which, depending on the time of year, will be slightly

more or less than one degree per day. Add the result to the MC position, then calculate new planetary and cusp positions for this new MC position. These new positions are the positions by primary direction. In *primary directions* everything moves by similar but rarely identical amounts. In *solar arc directions* everything moves by exactly one degree per year. In *secondary progressions* (day-for-a-year) everything moves but the amount is generally less than in primary directions, and for the outer planets it can be negligible. So primary directions deliver the most movement, which may be why the Theosophist and astrologer WCE Serjeant says:

The Astrologer should never judge of death save by primary directions which correspond with secondary directions in showing evidence of final dissolution (*The Astrologer's Guide* 1886/1970:75).

In all methods, the movement carries planets and cusps around the heavens to form aspects to relevant natal signifiers such as the Ascendant. According to tradition, accidents occur when an aspect is exact and has the appropriate symbolism such as a hard aspect involving malefics. A disadvantage shared by all systems is that aspects to or by the Ascendant or MC require accurate birth times, simply because an error of four minutes puts their natal positions out by an average of one degree, which in turn (depending on the system) puts the event timing out by a year or so. This sensitivity is of course put to good use when calculating unknown birth times by fitting the chart to events (at least that is how it is supposed to work). Primary directions to planets by Ascendant and MC are not difficult to calculate by hand using an ephemeris, but primary directions by planets – which are treated as if they were Placidian cusps – require a laborious iterative process that is impractical without a computer, so they were never popular with astrologers. But the Dutch astrologer Wim van Dam claimed that primary directions based on the recipe given by Ptolemy in his *Tetrabiblos* gave better results than secondaries, tertiaries or solar arcs. Which is why Smit tested them.

Results The numbers of hard contacts made by and to Sun, Mars, and Uranus for 72 fatal accidents were much higher than expected by chance and were in accordance with tradition. But the numbers for 62 suicides were lower and contrary to tradition (r between the numbers = -0.24 , $p = 0.50$, $df = 8$). Smit then found that the difference was due to the fatal accident cases provided by Kuypers, who knew how to calculate primary directions and had selected these particular cases because they showed such peaks! The other fatal accident cases (which were provided by astrologers who did not know how to calculate primary directions) failed to show such peaks. So the peaks were seemingly due to a biased selection of cases.

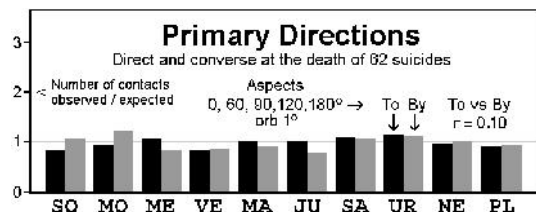


Fatal accidents showed peaks for SO, MA and UR, but suicides did not.

When biased cases were removed, the effects disappeared. And it made little difference what factors were chosen. For example after the addition of sextile (60°) and trine (120°) aspects, and major aspects by converse motion, the results for 62 suicides looked like this:

Contacts to planets by the Ascendant, and contacts by planets to the Ascendant, show no significant difference from the numbers expected by chance. Furthermore, contrary to tradition, they were not significantly related (r between numbers = 0.10 , $p = 0.78$, $df = 8$).

Overall there is no evidence for any useful link between primary directions and suicide.



Summary: Contrary to traditional predictions about violent deaths, and contrary to the claims of Wim van Dam: (1) For unbiased data the numbers of aspects were not statistically significant and did not replicate. (2) Aspects at death were no more numerous than at other times. (3) In general the angles did not feature more strongly than planets. (4) Hard aspects

did not consistently outnumber other types of aspect. (5) The exactness of the aspect was not affected by birth time precision. (6) The use of latitude and converse motion produced little improvement. These results do not support claims that aspects at important events are always fitting, that the orbs are always tiny, and that precise birth times are always necessary.

Comment Progressions, solar arcs, and transits were ignored in the above article, but Smit had in fact tested them with the 62 suicides and the unbiased cases from the 72 accidents. For these tests Bert Terpstra, author of 7.4.1990.1, had written a computer program that tested all of these techniques (including converse motion and two kinds of primary directions) in one go. But the results were not significantly different from those expected by chance. In other words, contrary to traditional astrological claims, there was no evidence that any of these techniques were usefully related to death. But death is clearly the most major (and most unambiguous) event in anyone's life. So what hope might there be for lesser events?

7.4.1987.2 Can Guy de Penguern detect cancer in 51 patients?

Françoise Gauquelin, *APP* 5(2), 10-14, 1987. The short answer is No.

In response to Guy de Penguern's claim that he could determine health problems from the birth chart, I gave him 100 cases with birth data and approximate birth time, each with the date (and sometimes time) of death. The cases were from the register of a Paris hospital. Initially he identified a dozen health problems for each case, but the number of agreements with the hospital records was poor (6% for the first 50 cases), so he focused on deaths by cancer and cardiovascular disease. But for 51 cases he identified more cancer among the non-cancer cases than among the cancer cases, which was in the wrong direction.

7.4.1987.3 Transits and 431 abductions of children

David Peter Valentiner, *APP* 5(3), 27-31, 1987.

The author notes that empirical studies of transits have been generally negative. For example Professor Ulrich Mees in *APP* 2(3), 16-20, 1984 examined Sun and Moon transits (including the first twenty harmonic aspects) to natal Sun and Moon in 3045 deaths but found nothing significant. Nevertheless transits are popular in astrology. And in various textbooks, Mars-Saturn symbolism is consistent with abduction, for example in her 1976 book *Saturn: A New Look at an Old Devil*, Liz Greene says "Actual physical maltreatment in childhood sometimes occurs with Mars-Saturn aspects" (p.116). So the author examined all hard transits (conjunction, square, opposition, orb 1°) between Mars and Saturn for 431 cases of child abduction supplied by the US National Center for Missing and Exploited Children. The hypothesis was that Mars-Saturn and Saturn-Mars transits would be found more frequently than expected in the birth charts of these children on the day they were last seen. Expected frequencies were calculated by mixing each birth date with the abduction date of the next 100 records. The observed total was slightly higher than the expected total (25 vs 19.3 cases), but effect size r was a small 0.064 and was not significant ($p = 0.18$). The most significant single transit (8 cases) was Mars conjunct Saturn, but even this was only marginally significant ($p = 0.10$). The remaining 406 abductions (94%) had no Mars-Saturn or Saturn-Mars transit. The author concluded that the hypothesis is not supported. Alternative explanations, such as astronomical biases or chance fluctuations, cannot be safely dismissed.

Comment Subsequently, in an unpublished MS, the author wondered why the "highly testable area" of transits had been generally unchallenged. So he tried a new approach for testing transits using single-vehicle non-fatal road accidents (so transits relevant to death can be excluded) that occurred over less than four weeks (so transiting outer planets tend to be in the same place). His sample of 100 accidents was from the Wisconsin Department of Accident Records for non-fatal car accidents in Wisconsin during 1-25 January 1985. With just the driver's date of birth, noon times would give sufficiently accurate positions for Mercury, Mars and Uranus, which were the planets "consistently claimed to be associated with accidents" via

the transits listed below. Orb was not stated but was probably the same as before, namely 1°. The counts for each transit when the accident occurred (transiting planet listed first) were:

Transit in the charts of drivers	Hits	Expected
ME-0-MA	1	0.6
MA-90-UR	uncertain due to astronomical artifacts *	
UR-0-MA	2	0.6
UR-90-MA	1	1.2
UR-180-MA	1	0.6
	--	----
Total	5	3.0

for 100 non-fatal accidents

* During 1-15 January 1985 transiting Mars square natal Uranus could appear only in the charts of drivers born during 1943-1948, whereas most were born after 1960. So it could not be tested.

There were more hits than expected but the effect size r was a small 0.117 and was not significant ($p = 0.18$). More importantly, around 95% of accidents did not have a relevant transit. No combination of possible birth times changed the observed hits, so the use of noon was safe. Except for transiting Mars square natal Uranus, interference by astronomical artifacts was minor. The author concluded that :

These results do not give us any cause to reject the null hypothesis [of no correlation]. They suggest that the five accident-predictor transits are no more likely to be occurring during an accident than any other transit. ... If this is the case – that the correlation between transits and accidents are clouded over by other factors – one must wonder how the correlation was ever noticed in the first place. One must also wonder why so many authors of books on transits continue to give warnings against accidents whenever these transits are in effect.

The author considered whether the definition of "accident" could be problematic, simply because transits are said to correlate with psychological experiences:

An inspection of the actual cases in the sample reveals a great diversity of psychological experiences. Two cases involved men over 60 falling asleep at the wheel. One case involved a seven year old driver. One case involved a young driver in the midst of a delinquent act. Many of the accidents involved a 18-21 year old driver sliding on a patch of slippery ice and hitting a pole or railing. Some accidents involved only a small amount of property damage, while other accidents involved major injuries and damages. [In short] greatly different psychological events were taking place. A case could be made that the symbolism of the transits that are present in each case accurately describe each event. This is one of the frustrations of astrology – its symbolism makes it difficult to systematically formulate predictions prior to the event.

The author concludes that these transits do not predict accidents better than any other transits. It has not been tested whether they predict other kinds of events that are associated with accidents – an open-ended project for which forever might not be long enough to reach a conclusion – but the present results suggest they do not.

7.4.1987.4 Three approaches to chart rectification

Rectification: Three faces of the prism, *FAA Journal* 17(3), 42-59, 1987. Three professional FAA astrologers (Rudolf Smit, Gwyn Turner, Bernadette Brady) who used chart rectification in their work provide helpful comments.

Rudolf Smit finds rectification to be a highly contentious issue even though it has been:

My first and foremost specialty in my twenty years in astrology. ... at a certain stage, roughly three-quarters of my astrologically-derived income came from rectifications. I have tried most of the known methods (p.42).

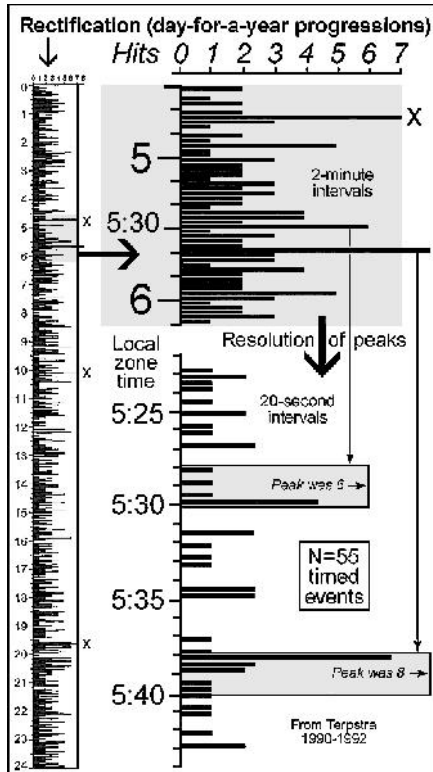
To rigorously test each method he used about 20 subjects whose birth times were precisely recorded and documented and who had experienced at least ten life-changing events such as marriage, job promotion, serious accident, migration, and death of a parent. He concludes:

In the long run none of the methods I tested and worked with for a while (including the Brady Rectification Graph) could, in the end, satisfy my criteria. One of these criteria is quite simple: if rectification methods work, even if one allows some margin, they should all come up with roughly the same birth time. In the great majority of cases, they don't. The differences can be enormous – from a few minutes (which is acceptable) to several hours (which is not acceptable). Therefore, generally speaking, rectification is a futile exercise. It gives the astrologer and his/her client a false sense of security (p.42).

So he has abandoned all attempts at rectification.

Gwyn Turner rotates the chart until house placements match the circumstances in life, then rectifies the Ascendant and MC degrees against life events by the traditional day for a year:

I have given enough lectures and articles since 1972 to encourage people to investigate traditional astrology and the progressed horoscope with events as well as character. ... it was the apparent unfairness in life that prompted me to take up astrology which, in the old days, was far ahead of today's. With all the different methods, house positions, Vertex, East Point, midpoints, astrology today is going backwards, and I doubt if any group of astrologers would get the same [rectified] answer. With my many files of letters from client's expressing accuracy of their horoscopes and future events, one cannot go past the traditional methods I use (p.44).



Bernadette Brady focuses on transits. She takes not less than 15 important life events (>20 gives good clarity) occurring no closer than six months apart, and plots the rounded-up sign degree (ie 1°-30° in the 12th harmonic) of Mars through Pluto and the Moon's North Node on those dates. [The results will look like those in the adjacent plot described in the Comment.] The two main peaks will most likely coincide with the Asc and MC. If there are many possibilities or only one peak, you keep repeating the exercise in different harmonics, or with Mars removed, or with the Vertex and the Asc/MC midpoint included with the Asc and MC, until a good fit is obtained. The result is called the Brady Rectification Graph or BRG. She concludes:

One of the most important by-products of the graphs is that it gives a visual representation of how an individual reacts to transits. ... The graphs can also show whether an aspect pattern is working or not [it shows up as a peak that the angles cannot account for]. ... No rectification system is as good as a known birth time and, no matter how good any one system is, there will always be doubts. However, this [BRG] system only requires from the operator the ability to see peaks on a graph and the ability to look up a person's birth co-ordinates from an atlas. No astrological theory has to be known, thereby eliminating any possible errors in astrological judgement. The resulting chart may or may not be the correct birth time but it does produce a chart that has a track record of reacting to transits (pp.58-59).

Comment Brady's closing comment about the result being not necessarily the correct birth time is supported by an unpublished 1984 study in which Geoffrey Dean (with Brady's help to resolve uncertainties) computerised her approach and applied it to 12 cases provided by FAA members, each with recorded birth times and an average of 27 life events. The resulting 12 rectified birth times differed from the 12 recorded birth times by an average of 9.3 hours, or 8.4 hours if peaks within 2° of a natal planetary cluster were excluded. No rectified time was closer than 25 minutes to the recorded time.

Other BRG problems are uncovered in the above plot showing an attempt to rectify an unknown birth time with 55 events, roughly one-third of which were traumatic (eg deaths) and two-thirds were personally important. This particular plot is from Terpstra see 7.4.1990.1 and is of day-for-a-year progressions, but the distribution of results is typical.

Look closely: When the 24-hour day is divided into 720 two-minute intervals, three intervals (all marked on the left by x) each score 7 hits and one scores 8 hits, but visually there is no definitive clustering and no way of telling where the actual birth time might be. Also the probability of getting one case of at least 8 hits in 720 intervals is $p = 0.84$, a near certainty, and when tested the distribution is indistinguishable from chance. There is no improvement when the area around 8 hits is divided into 20-second intervals and there is no evidence that progressions have a fractal structure (ie one independent of magnification).

7.4.1988.1 Pluto squares and 72 fatal traffic accidents

Françoise Gauquelin, *AinO* 3(2) & 4(1), 36-39, 1988. And *APP* 6(1), 26-27, 1988.

Following her critique in 7.4.1985.2, Françoise Gauquelin looks again at Cornelius Kuypers' 72 fatal traffic accident cases, and at the frequency of Pluto squares to the Ascendant using Mark Pottenger's computer-generated expectancies. On average the new expectancies are 4.3% higher, almost enough to reduce the previous significance to $p > 0.05$. But although the significance of this particular result is maintained, the lack of significance for the other squares leaves no convincing support for the overall result. So a new effort with new data is required.

7.4.1989.1 A rectification exercise with 15 major events

Responses to a rectification exercise that appeared in Dymock Brose's *Astrologers' Forum* [NSW Australia] in 1988.

Astrologers were invited to rectify the chart of a male born 15 June 1931 in Australia at 31s35 116e42 using the dates of 15 major events (eg deaths of parents, marriage, birth of children). The best entry correct within 10 minutes would win a prize of \$A20 (worth today around \$US40 or £30). Enthusiastic responses were received from astrologers who were generally confident that their rectified birth time was within 5 minutes of the actual birth time, which was unknown to them but was recorded to the minute.

The rectified times ranged over 21 hours, none were within one hour of the actual time, and no two answers agreed (although some came close) even when obtained using the same technique. The astrologers also disagreed on the number of events required – some felt that 4 or 5 were sufficient (sometimes even just 2 or 3) while others felt that 15+ were needed – but they tended to agree that quality was essential. That is, the events had to be important.

The rectified times in local 24-hour zone time and method used were as follows:

Time	Method
01:48	Prenatal epoch checked by Topocentric primaries and progressed Solar Returns.
05:00	First attempt using age harmonics.
11:10	Actual birth time recorded to the minute.
12:16	Progressions and transits involving Ascendant and MC.
13:52	Pre-natal directions.
18:03	Second attempt using an undisclosed method.
18:05	Primary directions of Ascendant and MC.
18:14	Computerised Brady rectification graph.
18:37	Age harmonics quick approach (repeated next).
22:01	Age harmonics checked by progressed angles, solar returns and transits.
23:00	Moon progressions.

Comment The most common (albeit imperfect) agreement is with the Brady rectification graph, suggesting that the agreeing methods focused on much the same frequencies even though they were not reliably related to birth time, see 7.4.1987.4. The idea of age harmonics originated in the pages of *Astrologer's Forum* and became popular for analysing events once it was available in computer software packages. Essentially it involves aspects between (1) natal positions and (2) natal positions x age reduced to less than 360° by repeatedly subtracting 360°, which magnified computation errors while simultaneously increasing the probability of a meaningful hit by chance (which is presumably why it became popular).

7.4.1990.1 Tests of birth chart rectification by progressions

Bert Terpstra, *AinO* 5(1), 19-29, 1990 and 5(2), 20-23, 1990 and 6(1), 55-58, 1991 and 7(1), 7-9, 1992. This study took the author, an expert computer programmer, several years to complete. It is perhaps the most meticulous study ever conducted on chart rectification.

The author describes a computerised method for reconstructing the correct birth time based on the traditional claim that no important event in life occurs unless a progression involving a chart angle (ie Ascendant or MC) is in force at the time. It is hard to imagine that a newly born child could record the movement of planets and angles in the hours after birth and then replay them in a way that would indicate external events. Nevertheless if progressions do

work then the implications are tremendous, perhaps requiring the acceptance of analogy as an active principle. It would also pose a huge challenge to science. Not all primary and secondary progressions can be used in birth time reconstruction, only those that coincide with an event for one birth time and not another. This is true for primary progressions of the angles to natal planets, and for secondary progressions of planets to natal angles.

The starting point is (1) the subject's birth chart, (2) birth times at intervals of two minutes during say half an hour either side of the nominal birth time, and (3) a number of major events such as accidents. For the first event and each birth time the natal planets and angles are progressed at one day = one year in life, and the date corresponding to each exact aspect to or from the angles is calculated for each birth time. Contacts between angles are not counted. Within each two-minute interval the number of hits between aspects and event are counted.

To be a hit the aspect has to involve the correct angle (Ascendant for physical events such as accidents, MC for social events such as marriage), the correct aspect (hard for difficult events such as accidents, soft for easy events such as business success), and the correct planet as defined by tradition (for example Jupiter for a promotion). If the same aspect fits several events occurring close together, only one hit is counted to avoid biasing the results – the aim is to count aspects that match events, not events that match aspects. The small size of the time



interval (only two minutes) requires very high accuracy in the computed positions, which were computed with full astronomical accuracy, ie within 0.1 second of arc for the Sun, Moon, Ascendant, MC, and inner planets, and within 1 second of arc for the rest.

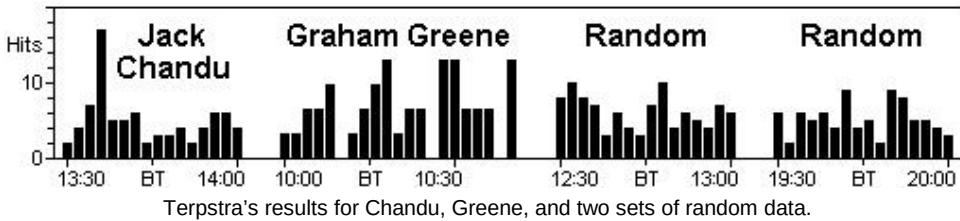
Bert Terpstra in 1991

Finally the number of hits are plotted as a histogram vs birth time. Peaks in this plot identify the times that provide the best fit between chart and events. According to the traditional claim there should be a single pronounced peak at the true astrological birth time that accounts for all significant events. But this was never observed. For example, in his 1985 book on chart rectification *Horoscoopcorrectie in de praktijk*, the eminent Dutch astrologer Jack Chandu gives a list of 179 dated events in his life, of which 17 are found in a pronounced peak in the histogram (see plot below), but not at the time of the first cry recorded to the second by Chandu's astrologer father using a watch synchronised to the radio time signal. Chandu writes "I possess twelve birth times of myself, corrected to the second by well-known astrologers, none of which agree with each other. They [also] deviate many minutes from my actual birth time".

Also, if progressions indicate events, important events should feature more prominently than unimportant events. To allow the author to make this check, Chandu selected 41 of his events as being the most important. But no peak contained all 41 events even when the method was applied to all 24 hours of the birth date, so the traditional claim (that no important event in life occurs unless a progression involving a chart angle is in force at the time) is wrong. Also only 4 of the 17 events in the peak were important versus the $17 \times 41/179 = 3.9$ expected by chance, which implies that the peak is meaningless because it does not reflect importance. So it cannot have anything to do with Chandu's birth time.

Furthermore, very little bias is needed in the selection of events to produce a peak in the histogram. For example if Chandu had included only 12 events in his list of 179 just because they fitted his progressions, it would have been enough to raise the average peak height of 5 hits (measured over 24 hours) up to the 17 observed. So as a check the method was applied to the life of the author Graham Greene, for which 251 accurately dated events are listed in his biography *The Life of Graham Greene* by Norman Sherry, because from the biography it seems that neither Greene nor Sherry had ever been interested in astrology. After discarding 64

trivial events from the 251, no single peak was found, and no peak was observed at the 10:20 am birth time recorded by his mother. Weighting the important events made no difference, nor did changing the rules for selecting hits. Tests with other subjects gave similar results. Worse, charts and events generated at random gave peaks just like real data, even though the peaks are necessarily meaningless, see the plots below.



Conclusion In general chart rectification based on progressions does not work, and therefore those progressions themselves do not work.

Comment 1 Rudolf Smit (*AinO* 5(2), 17-19, 1990) comments that methods of chart rectification are acceptable only if they give results that agree with accurately-known birth times, give successful predictions, exclude competing birth times, and do not rely on human interpretation. So far he has never encountered such a method. A good example is the Brady Rectification Graph [similar to the approach tested by Bert Terpstra] invented by the Australian astrologer Bernadette Brady. Initially it was widely claimed to be reliable, but it soon fell from favour. Often results were many hours away from the real birth time.

Comment 2 In astrology disagreement over rectified times is normal. For example various astrologers have worked backwards from the life events of Ronald Reagan to produce over 35 different birth times spanning 15 hours, each one claimed to be definitive by the astrologer concerned. For details see 8.4.5.

7.4.1990.2 Aspects at 500 violent deaths

Geert Thomassen and H.J.van Roekel, *AinO* 5(2), 24-29, 1990.

Geert Thomassen collected birth and death dates from newspapers and graveyards for 500 persons who had died a violent death, usually in a traffic accident. By computer van Roekel counted aspects between natal (at noon) and transiting (at death) planets except Moon. Soft aspects were defined as 30, 60, 120, 180 degrees, hard aspects as 0, 45, 90, 150 degrees. (Tradition would swap 0 and 180, but the allocation was based on earlier research; 135 was omitted to equalise the expected aspect numbers.) Total numbers of observed aspects were:

Orb in degrees	0-1	1-2	2-3
Hard aspects	1291	1285	1279
Soft aspects	1170	1265	1243
Difference H-S	121	20	36

The differences are very small but in the right direction. However, contrary to tradition, the numbers do not decrease with each increase in orb, and outer planets Jupiter through Pluto showed the least effect. Conclusion: the outcome is unclear, but if there is an effect it is very small. The study needs to be repeated with clearer hypotheses, but it will not be easy for us to collect another sample in the short term. [For more see next two summaries]

7.4.1991.1 Re-analysis of 500 violent deaths

Bert Terpstra and Geert Thomassen, *AinO* 6(1), 22-28, 1991.

Thomassen and van Roekel had previously made a study of transits in 500 birth charts at the time of a violent death, usually from a traffic accident, but with unclear results, see previous summary. The hypothesis for this new study using the same data was that hard transits would outnumber soft transits. The differences were very small but were in the right direction:

Orb in degrees	0.5	1.0	2.0	3.0
Hard aspects	677	1291	2576	3855
Soft aspects	587	1170	2435	3678
Difference H-S	90	121	141	177
p by 2x2	0.04	0.01	0.02	0.01

After inspection of the results, the hypothesis was reduced to transits of the Sun, Mercury, Venus, and Mars only. The new results confirmed the hypothesis more strongly, but Terpstra points out that this may be due to selecting data after the event. So the results serve only to establish a new hypothesis for testing with fresh data. The number of conjunctions for each planet were as follows:

Orb	0.5	1.0	3.0	Quality	Definition
Sun	30	59	171	Inharmonious	) Inharmonious if number is
Mercury	30	57	151	Neutral	) clearly more than expected.
Venus	23	44	135	Harmonious	) Harmonious if number is
Mars	33	59	161	Inharmonious	) clearly less than expected.
Expected	25	50	150		

Terpstra also points out that the variations from expectancy can be used to test the traditional classification of the conjunction as "variable in quality". Thus the general excess of Sun conjunctions indicates that Sun conjunctions may be classified as inharmonious, whereas for Mercury, Venus, Mars they are neutral, harmonious, inharmonious, respectively. **Comment** The distribution of intervals between birth and death dates may artificially select certain planets and aspects, thus giving misleading results. So matched control groups need to be tested before any conclusions can be drawn.

7.4.1991.2 Aspects at 1500 deaths

Geert Thomassen and HJ van Roekel, *AinO* 6(1), 58, 1991.

Thomassen visited several cemeteries and recorded a total of 1500 birth dates and their death dates. By computer Van Roekel counted aspects as in their study of 7.4.1990.2. According to tradition there should be significantly more hard aspects at death than soft aspects. For three replicate groups of N=500 the transiting planets Jupiter through Pluto showed no clear effect. The rest (Sun, Mercury, Venus, Mars) showed a small excess of soft versus hard aspects (average 721 versus 681 expected), which is in the opposite direction to that predicted even though leaving out Jupiter through Pluto (after their results were known) should have inflated any effect. The counts were also not very different from the counts for three control groups of the same birth dates with random death dates (average 722 versus 706 for controls). Increasing the orb to 2° (it was previously 1°) did not affect the outcome. **Conclusion** Contrary to traditional claims there is no significant correlation between transits and death.

7.4.1991.3 Which mundane technique is best?

Wim van Dam, *AinO* 6(1), 59-62, 1991.

Here the author begins a series of articles lasting through 1995 in which he tries to discover which mundane techniques (techniques involving world events) are promising and which are not. Unfortunately his approach is to discuss selected cases without formal testing, so clear conclusions cannot be made. Nevertheless he finds the most promising mundane technique to be geodetic equivalents, in which an MC is given to every place on Earth depending on its longitude, and then house cusps are calculated depending on latitude. When a transiting planet is stationary, the place where it is on an angle will exhibit events corresponding to the planet. For example Pluto on the geodetic IC of Wall Street coincided with the start of the great depression. Eclipses have always held a prominent place in mundane astrology and are generally seen as a heavy transit whose effect is delayed. The author's experience suggested that, of three methods for defining the exact moment of an eclipse (bodies conjunct in right ascension, moment of maximum duration, moment when centres are closest), the first seemed to be the best. For more on geodetic equivalents see 7.4.1993.2.

7.4.1992.1 Saturn-Uranus shows no link with weather

Marvin V Layman, *Kosmos* 21(3), 4-8, 1992.

I followed weather records for 1975-1978 to see what effect the Saturn-Uranus square might have. There seemed to be no correlation, which was surprising because tradition suggests it would bring colder, wetter weather. During 1988 these two planets were conjunct on three occasions, mostly staying within 2°, but the weather in Oklahoma (where I live) was not cold and wet. In fact the city of Tulsa had the driest year since 1907. **Postscript** by *Kosmos* editor Susie Porter on pp. 9-10 says most astrologers would associate Uranus with drought and wind. [She says nothing about Saturn, traditionally associated with cold and damp.] The Aries Ingress of 1988 for Tulsa would at first glance not suggest drought, but on adding planetary nodes, helio positions, midpoints, asteroids and Arabic Parts the picture changes. The more we work with astrology the more we realise that its principles apply but precise details can be difficult. **Comment** Yes, fire enough arrows and eventually some will hit the target.

7.4.1992.2 Uranus-Neptune and the money market

Sietze van der Tuin, *AinO* 7(2), 42-45, 1992.

Uranus is said to indicate change and revolution. Neptune is said to indicate fantasy and idealism. A conjunction occurred in 1820, characterised by technological changes (eg industrial revolution) and political upheavals (eg death of Napoleon), which matches Uranus and Neptune taken together. In 1819 Mars was in opposition to the Uranus-Neptune conjunction, and in the same year panic broke out in financial markets leading to the worst economic depression of the 19th century. We might therefore predict a similar situation for the next conjunction in 1990, and for 1992 when Mars is again in opposition. And indeed there was panic and despondency in the money markets in 1992. **Critique** by Bert Terpstra (p.45): In fact there was only currency speculation in 1992, where speculators exploited EEC rules that force central banks to purchase any EEC currency that is threatened. The speculators made billions in profits, so they were presumably not despondent. In any case, currency speculation and depression are not the same. See also 8.8.6 (financial astrology).

7.4.1993.1 Sun transits and 1023 work-related injuries

Sara Klein, *Kosmos* 22(1), 2-4, 1993 and 22(3), 21-30, 1993. Summarises her doctoral dissertation in psychology, University for Humanistic Studies, Del Mar CA, 1992, with 120 references.

In 1988 nearly two million people in the USA suffered disabling injuries at work compared with more than 50 million disabling injuries from all causes (burns, car accidents, falls, firearms, poisoning, etc). There is no specific astrological factor related to accidents, only a general one involving hard aspects from transiting planets to natal planets, the generally accepted order of decreasing severity being 90, then 180, then 0. The only astrological work dealing with accidents is Charles Carter's *The Astrology of Accidents* (1932), which looked at natal planets in 168 cases of accident and ignored transiting planets. My own experimental data consisted of the birth dates and accident dates of 1023 people in California who had (1) been disabled for at least three months in an accident at work during 1983-1991 and had (2) filed a Workers' Compensation claim. The data was copied at my request from the reports of doctors to whom they had been referred by lawyers presenting their claim. The copyists were told only that it was needed for a statistical study of injury patterns. Cases were excluded if any date was uncertain, if there was more than one injury date, or if the injury was mostly psychological (eg stress) or had no definite onset (eg lung disease). The sample consisted of 414 English-speaking cases from three independent sources and 609 Spanish-speaking cases (mostly Mexicans) from a Los Angeles clinic that dealt with Hispanics. In both groups the accidents tended to occur when transiting Sun was 0, 90, or 180 to the natal Sun regardless of orb (r between groups 0.82, df 10, p 0.001). If expected number of aspects is $N \times (\text{total orb})/360$, the observed and expected numbers of 0+90+180 aspects for $N=1023$ are as follows:

Orb	Obs	Exp	Obs/Exp
15	471	341	1.38
10	330	227	1.45
5	189	114	1.66

By chi-squared test the excess is very highly significant, p being typically $<10^{-8}$. The excess was about 20% larger for the conjunction than for the rest, showing that the peak time for accidents was around the victim's birthday, suggesting an effect from too many parties or from depression at the thought of getting older. But only astrology seems able to explain why accidents should also peak around 3, 6 and 9 months from the victim's birthday, ie at 90, 180, and 270 (= 90 + 180) aspects.

Comment But if accidents are less frequent at weekends when fewer people are at work, the assumed expectancy may be invalid. The birth and accident dates were reported to the doctor presumably some time after the accident and may therefore be less than accurate. Similarly the minimum 3-month period off work required for data to be included, is suspiciously close to the period between hard aspects. These points were checked in a follow-up study briefly reported by Zip Dobyns and Mark Pottenger in *Mutable Dilemma* 19(3), 2, 1996 and 20(2), 2, 1997, and even more briefly in 20(4), 2, 1997 and 22(3), 2, 1999. In it they test a Swedish database of 2865 persons who had suffered critical work-related accidents in 1993. (US data could not be obtained due to new privacy laws.) Contrary to Klein's results, the Swedish data gave "total non-significance" for hard aspects between natal and transiting Suns on the day of the accident, although the conjunction was again the strongest. In Sweden medical needs are met without having to file a claim. And all but 413 (14%) of the accidents were timed, which indicates careful reporting. Consequently "Sara suspects that some of the claims by younger individuals in California may have been fraudulent".

7.4.1993.2 Eclipses in mundane astrology

Wim van Dam, *AinO* 8(1), 57-59, 1993 with follow-ups in 8(2), 28-30, 1993 and 9(1), 28-31 and 44-45, 1995.

The ways in which eclipses are used to predict events in mundane astrology are often vague, inconsistent, and ineffective. That is, they often don't work. A better way might be to consider the time and place where the eclipse is total, not just via the normal horoscope but also (and probably more importantly) via its geodetic equivalent, a chart where the longitude of the place becomes the MC using 0° longitude = 0° Aries. If the eclipse occurs in polar regions the usual problem of calculating the Ascendant is easily overcome by making Ascendant = lowest point on the ecliptic (ie the point that is about to rise), even though parts of the ecliptic will be permanently above the horizon for the entire year and thus never able to intersect it. At the north pole the lowest point will be 0° Capricorn (0° Cancer at the south pole), and will fan out from these points as the distance from the poles increases. (The author does not explain how to calculate the lowest point.) In non-polar regions this gives the same result as the normal definition, ie Ascendant = intersection of horizon and rising ecliptic. Another approach is to use the horoscope for a country's capital cast for the time of the eclipse. The author gives numerous examples showing the superiority of these approaches to eclipses.

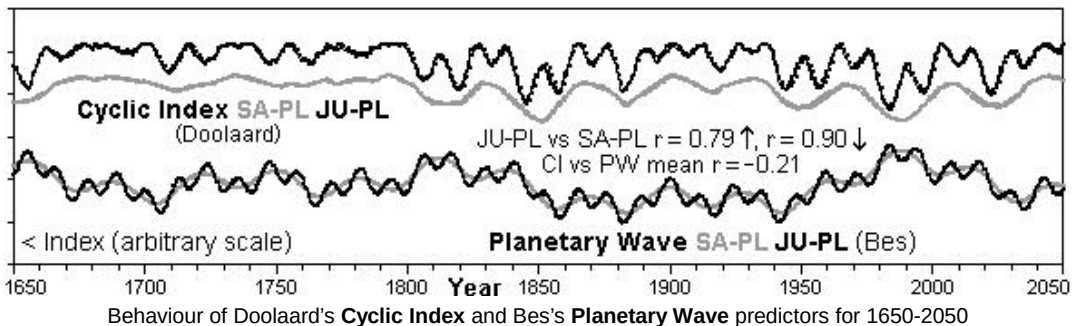
Comment In a review of geodetic equivalents, Charles Harvey notes that making 0° longitude = 0° Aries (an idea usually attributed to Sepharial 1864-1929) "would seem to imply that God is either an Englishman or that He took a very precise hand in the placing of Greenwich Observatory ... the problem is that positive examples can always be found to support any thesis. If we simply ignore the cases that do not appear to work we can soon convince ourselves ... that this is therefore the correct method!" (in Baigent, Campion, and Harvey *Mundane Astrology* 1984:294,296-297). Excellent advice that their book tends not to follow.

7.4.1993.3 Waves and wars 1700-1992

Robert D. Doolaard, *AinO* 8(1), 15-22, 1993. An earlier unrefereed version of this article appeared in the *Astrological Journal* 35(5), 268-279, 1993. This improved version appeared in *AinO* with an editorial comment. As noted by the author, the cyclical index and variations have been much studied by others.

During WW2 the French astrologer Henri Gouchon had the idea of calculating the ten angular separations between the outer five planets (Jupiter through Pluto) on March 21 for each year. He then added up these ten angular separations and plotted the results on a graph, which he called the *cyclical index* or *Jupiter wave*, a result much studied by others, especially the French astrologer André Barbault in *L'Astrologie Mondiale* 1979. For this research I have included the Saturn wave and the Uranus wave, calculated in the same way for Saturn through Pluto and Uranus through Pluto, respectively. My intention is to compare the cyclical index of the last three centuries with the wars occurring during that period. The question is whether more wars, or more serious wars, break out during the downwards phase of the wave than during the upwards phase of the wave. Of 22 mega wars, 20 occurred in the downwards phase of the Jupiter wave and only 2 in the upwards phase. A similar but less marked difference was seen in the Saturn and Uranus waves. **Editorial comment** In this study no hypothesis has been formulated in advance and hence none has been verified. The obtained results are dominated by 22 mega wars. This number and the number of cycles are too small for a statistical assessment. Nevertheless, the obtained results are remarkable. Only time will tell whether future big wars will begin more often during downward phases than during upward phases.

Comment Variations on the cyclical index have been proposed. For example in *Correlation* 20(1), 4-27, 2001 and 22(1), 38-51, 2004 the Canadian astrologer Rudy Bes suggests that warfare and economic growth are correlated with a planetary wave obtained by adding together the sine of the zodiacal longitude of Jupiter, Saturn, Uranus, Neptune, and Pluto, and then reversing the sign, so +2.0 becomes -2.0. During 1500-1950 the correlation with an independent warfare index for 116 global wars was $r = -0.34$ ($p = 0.01$ when corrected for the number of tests) for both geocentric and heliocentric waves, and $r = -0.11$ (nonsignificant) for 335 international wars. The negative sign indicates that wars were associated with troughs in the planetary wave. Bes's Planetary Wave predictor and Doolaard's Cyclic Index predictor are shown below for 1650-2050 together with the same predictors minus Jupiter for comparison. The scales have been adjusted to make the waves similar in amplitude:



The above two predictors are based on different measures (angular separation of planets vs sines of zodiacal longitudes) and are used in ways that do not occur in a traditional chart reading by an astrologer when judging a client's birth chart. But if wars really do relate to troughs in the planetary wave and to downwards phases of the cyclical index, the mean value of the planetary wave during downwards phases should be less than the mean value during upwards phases. But the reverse is true for the above plots (0.25 versus 0.10, mean sd 1.63). Which, together with the negative correlation between predictors ($r = -0.21$ over 800 data points), shows that at least one of the predictors is suspect. Of course all that their authors have observed is a correspondence, not a causal link. We know that wars and economic crises occur at irregular intervals, and that combinations of planets can match almost any frequency, especially when the combination and phase are not specified in advance and there is no good reason to suspect a link in the first place. So apparently positive results that are actually meaningless are likely. Neither author fits a wave to actual wars to see how wars perform compared with planets. **Comment** For more on the cyclic index see 8.8.3.

7.4.1993.4 Business predictions fail

Wout Heukelom, *AinO* 8(2), 10, 1993.

An article in the Amstrdam-based daily newspaper *Het Parool* [The Password] for 12 January 1994 reports the failure of the Global Intelligence Agency (part of the press agency Reuters), which supplies business predictions made by astrologers. From the article it seems that (1) astrologers disagree about the validity of their techniques, (2) they did not successfully study the chart of their own Agency, (3) there are no grounds for trusting and paying astrologers for their predictions, (4) astrologers do not differ from fortune-tellers. The article implies that astrologers should submit their techniques to proper testing, otherwise either nobody will take them seriously, or even worse everybody will take them seriously, thus making their failures even more prominent. It is up to astrologers to decide which it will be.

7.4.1993.5 The five Chinese elements and longevity N=28169

David P Phillips, TE Ruth, LM Wagner, Psychology and Survival, *Lancet* 342, 1142-1145, November 1993. Gary Smith, The five elements and Chinese-American mortality, *Health Psychology* 25(1), 124-129, 2006. A failure to replicate.

David Phillips and his associates (1993) from the Departments of Sociology, Mathematics, and Political Science at the University of California at San Diego were interested in whether fateful beliefs decreased longevity. In the Chinese lunar calendar each year is associated with one of five elements (Fire, Earth, Metal, Water, Wood) and each element is associated with a certain body factor. For example Fire is associated with the heart, so a Chinese person born in a Fire year might be seen as more fated to die of heart problems than if born in a non-Fire year. To see if such beliefs actually had an effect, Phillips et al compared the death records of 28,169 adult Chinese-Americans with those of 412,632 randomly selected adult white controls, both taken from official Californian Vital Statistics 1969-1990.

For fifteen causes of death (cancers, heart problems, and various others including diabetes and pneumonia), Chinese-Americans born in a fated year, mean $N=1398$, died significantly earlier than white controls by nearly one year, for which by t -test the effect size r (which they did not calculate) ranged from -0.135 to $+0.185$, mean 0.033 , two-tailed $p = 0.003$ corrected for number of tests. Further tests showed that the more strongly a group was attached to Chinese traditions (here called true believers) the more years of life are lost.

The authors considered various explanations. Females almost always lost more years of life than males, perhaps because they spoke English less well and were less exposed to Western influences. People may refuse to change unhealthy habits because they believe their deaths are inevitable, but this was not supported by weaker effects for the unhealthiest habits. Chinese healers may tend to give up on people with fated births, but this was not supported by weaker effects for better-known conditions. A hidden longevity cycle may result in Fire people dying unusually young, but again this was not supported by the data. The authors concluded that:

Our findings do not seem to be completely explained by cycles of longevity, marital status, or a change in the behaviour of Chinese-American patients, healers, or death registrars. We conclude that our findings result at least partly from psychosomatic processes [ie stressful emotional factors] (p.1144).

This conclusion generated much debate among psychologists. In due course US economist Gary Smith uncovered numerous problems. For example Phillips et al had associated Earth with all types of cancer, but only stomach cancer is Earth; lung cancer would be Metal and liver cancer would be Wood. Diabetes would be Metal, Earth or Water depending on whether the person exhibits thirst, hunger or urinary symptoms. Some diseases such as cerebrovascular and arteriosclerosis (both heart) were omitted, others were narrow and incomplete, for example bronchitis, emphysema, and asthma were considered but not other respiratory diseases. The distinction between yin and yang was ignored, for example 1936 is yang Fire (small intestine) while 1937 is yin Fire (heart), whereas Phillips et al linked those years to both small intestine and heart.

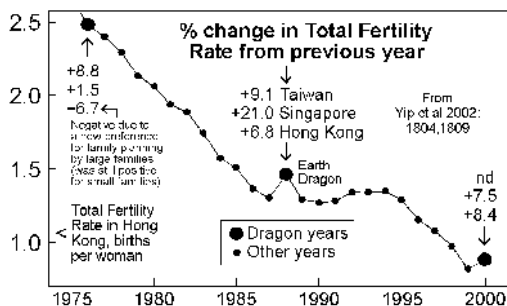
Finally, rather than compare Chinese and whites (which does not test whether there is a birth-year effect for Chinese), a better test would be to see whether more than one fifth of Chinese

deaths from a particular disease had fated birth years. But there was essentially no difference:

Diseases	Deaths and birth year		% fated	Two-tailed binomial p
	Fated	All years		
15 (Phillips et al data)	4251	21171	20.08	0.77
9 not reported by Phillips	3077	15875	19.38	0.052
4 best (Phillips) 1969-1990	1273	6367	19.99	1.00
4 best replications 1960-1968	279	1344	20.76	0.51
by Smith 1991-2002	1597	8015	19.93	0.88
True believers 1960-1968	92	462	19.91	0.95
by Smith 1969-1990	748	3745	19.97	0.83
		Mean	20.003	

Like Phillips et al, Smith wondered whether living in California rather than Asia might have weakened the effects of traditional Chinese beliefs. He was unaware of any relevant studies in China, but the situation would have been confounded anyway by the strict one-child-per-family rule then in existence. Smith concluded:

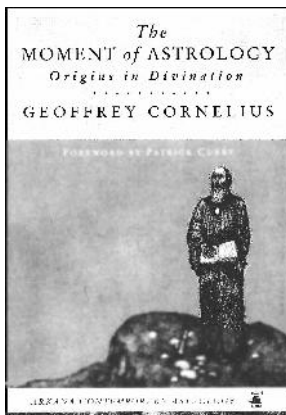
For the four diseases that Phillips et al (1993) identified as most significant, almost exactly 20% of the decedents had ill-fated birth years [ie exactly as expected if ill-fated beliefs had no effect], and there were no substantial or statistically persuasive differences in the average age at death of ill-fated and other Chinese Americans. The same was true for those Chinese Americans they considered to be most committed to Chinese astrology and traditional Chinese medicine (p.126).



Comment Fated beliefs may have little effect on death but they have clear effects on events more open to personal influence. For example Yip et al (*Social Science & Medicine* 55, 1803-1812, 2002) found that the downward trend in Chinese fertility rates in Taiwan, Singapore and Hong Kong showed spikes in Dragon years consistent with the belief that such years were an auspicious time for births. For another example see 1.4.1.

7.4.1994.1 Book review: *The Moment of Astrology*

Jacob Ruijling, *AinO* 9(1), 34-35, 1994 and 9(2), 40-44, 1995. A review of Geoffrey Cornelius's *The Moment of Astrology: Origins in Divination* Penguin Arkana 1994. Cornelius is a consultant astrologer with a background in philosophy and divination. He sees the birth chart as a kind of crystal ball where the reading depends less on astrology and more on the psychic ability of the astrologer. In his foreword Patrick Curry sees the book as extraordinary, elegantly argued, and a return of astrology to its roots. Jacob Ruijling is a leading scholar of astrological antiquity and has read much of its literature in its original Latin and Greek. He disagrees with Curry's opinion.



The book assumes that astrology (or at least horary astrology) is based on divination. For people who are uninformed about divination this book can be useful, but for informed people it has many deficiencies. For example the author lacks expert knowledge, shows no familiarity with the relevant literature, and relies on secondhand quotes. He is aware of Cicero's divination book but misrepresents its contents so he seems not to have read it. Nor has he read the two books by Bouché-Leclercq that are important here. He incorrectly quotes Al-Biruni, his description of Ptolemy is unusual, and he does not mention recent literature relevant to Ptolemy. He does not give clear definitions of the words *symbol* and *sign* and is vague about *meaning* and *significance*. His quotations from Wm Lilly are biased.

He does not refer to modern opinions about divination, nor is he correct in saying that philosophers have never thought seriously about divination. His notions of science are limited and questionable. In short, it is hard to take this book seriously. Only a complete re-write could turn it into an important discourse.

In *AinO* for December 1995 the editor said the notes to Ruijling's review had been omitted by mistake. So included as a separate insert was a copy of the article, this time with its notes. The continuation below covers this new material:

Some quotes by Cornelius do not agree with the original. For example on page 156 he quotes William Lilly "You must know how to vary your Rules", to imply that there are no firm rules in horary astrology. But Lilly makes it clear that there are such rules which you must vary (ie match) to the querent and the nature of the question. For example the relevant houses depend on whether the question is about your son or your servant. Cornelius finds it difficult to define what divination is, yet historians and philosophers do not find it difficult. Indeed, Cornelius claims that philosophers have never taken divination seriously, which view is immediately refuted by Cicero in his *De Divinatione*, who even in those days showed how philosophers often used subtle arguments to prove the credibility of divination. Cornelius argues that the "unique case" lies at the heart of divinatory astrology, and that the truth of the symbolism involved is self-evident, so its truth is objective. He adds that truth arises only in the unique case and is therefore not scientifically verifiable (pp.207-208). But, says Ruijling, true cases are exactly what happens in empirical science. So where is the problem?

Later, Cornelius notes that his astrology works "in terms of precise directions of appropriate and descriptive signifiers" (p.242), so here is his chance to convince all critics that his astrology really does work, for example by defining his rules in advance and then applying them to say ten charts for whom the answers are known. This would be more convincing than Cornelius's long discussions, but it is an approach that Cornelius conspicuously avoids. Ruijling concludes that Cornelius is not consistent in distinguishing between divination (no rules need be given) and astrology as a predictive method (accurate rules are essential). Either way, it is possible that astrology just provides a halo to support beliefs and ritual meanings, especially as no scientific studies have confirmed the accuracy of predictions by divination or by astrology. If Cornelius can achieve results in tests as described above, Ruijling will be more than happy to reconsider Cornelius's arguments.

Comment In 2003 Cornelius published a revision of his book *The Moment of Astrology*. But Ruijling's comments are ignored. And as in the first edition, no tests are suggested or made. Still missing is any discussion of the non-astrological factors that could mislead astrologers including Cornelius into believing that astrology works, see Chapter 9. Until astrologers take such factors into account they cannot expect their claims to be taken seriously.

7.4.1995.1 Can Vedic astrology predict accidental death?

John Dudley, *Correlation* 14(2), 7-11, 1995.

I tested the predictive qualities of Vedic astrology, a form of astrology widely applied in India, using twenty pairs of birth data. One of each pair was a real person who had died in a road accident. The other was a fictitious person which acted as a control. Their birth places were the same, and their birth dates were no more than three months apart, as were the death dates. Working blind, I attempted to identify the genuine accidental death. The result was 11 hits and 9 misses, which is not significantly different from the 10 expected by chance (binomial $p = 0.41$). My confidence in my judgements was actually less for hits than for misses, albeit not significantly so, which seems like worse news than a nonsignificant hit rate.

7.4.1997.1 Do transits affect our daily moods? N=51

Brigitte Hueber. *Empirische Untersuchung über den Gehalt astrologischer Symbolik in Übereinstimmung mit erlebter Situation* [Empirical investigation of the agreement between astrological symbolism and the experienced situation]. Masters thesis, Faculty of Mathematics and Social Sciences, University of Vienna December 1997. 137 pp. The author has been actively involved in astrology for twenty years, her motivation being "to know what is really in it".

She bypassed personality and focussed on the timing of moods as predicted by aspects to the natal Ascendant, MC, Sun, Moon and Ascendant ruler by transiting Mars, Jupiter and Saturn. She chose the last three planets because a pre-test using 15 subjects for 20 days showed that their claimed effects on mood (respectively *aggressive*, *joyful*, *depressive*) were the easiest to distinguish, while the claimed effects of the theoretically important Sun and Uranus were hard

to distinguish. To indicate the overall strength of each mood, each of the following feelings (based on descriptions given in German textbooks such as Barbault's *Von der Psychoanalyse zur Astrologie* 1991, Fankhauser's *Horoskope* 1985, and Ring's *Astrologische Menschenkunde* 1969) were to be evaluated each day on a scale of 1 (low) to 10 (high):

	Mars (aggressive)	Jupiter (joyful)	Saturn (depressive)
Feeling	(Enforcement	Generous	Difficulty
	(Aggression	Joy	Inhibition
	(Injury	Optimism	Oppression
	(Eager	Protection	Depression
	(Impulsive	Healing	Concentration

Each planet was thus represented by five associated feelings whose combined mood rating could range from 5 to 50 with an expected average of around $(5+50)/2 = 27.5$. The feelings in random order were assembled into 30-day diary booklets. A diary booklet was given to each of 123 volunteers for the evaluation of each feeling on each day for thirty days. Of these, 51 were returned from 31 females and 20 males, giving a total of $51 \times 30 = 1530$ daily mood ratings per planet, ie a total of $5 \times 1530 = 7650$ daily feeling evaluations per subject. Four subjects were aged >60 , the rest were roughly equally divided among <30 , 30-45 and 46-60. Their education levels were 8th grade 16%, high school 41%, university 43%, which were clearly not average. Possible interaction between the social variables was not investigated.

A transit day was recorded if an aspect by the specified planet occurred on that day. Otherwise the day was recorded as a non-transit day. The proportion of days with a transit was much the same for each planet (MA 26%, JU 29%, SA 26%). The aspects were 0° , 90° , 120° , 180° :

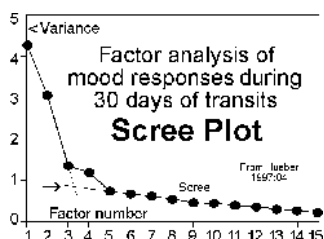
Aspects to the Ascendant or MC scored 4 points if exact and a similar one existed.

Aspects to the Ascendant or MC scored 3 points if exact. No orb allowed.

Aspects exact to the Sun, Moon or Ascendant Ruler scored 2 points. No orb allowed.

Same aspects to the Sun etc within an orb of 1 degree scored 1 point.

Per planet the daily transit score could thus vary from 0 to 4 or more for a multiple contact. No analysis was made to see whether 0° was more effective than say 90° or 120° .



Factor analysis of the 15x15 correlation matrix of mood ratings gave a scree plot confirming the presence of three major factors:

The plot was devised in 1966 by the UK/US psychologist RB Cattell (1905-1999) as a visual way of determining the number of factors to retain in a factor analysis. It plots the total variance explained against the number of factors extracted. Typically it shows a sharp drop that levels out into a scree slope similar to the scree of rocks that accumulate below mountain slopes. The point at which the slopes meet, if it is clear (it may not be), indicates the number of factors to extract.

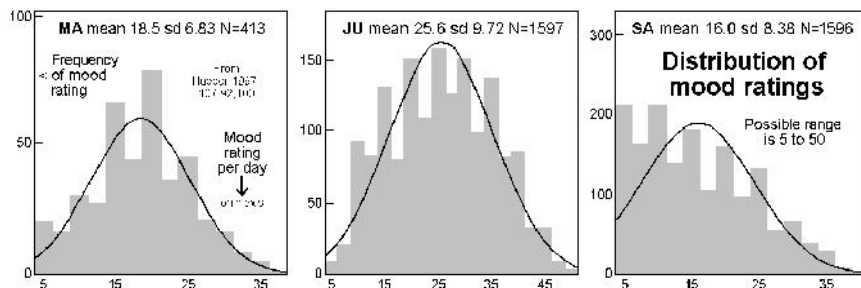
Here *factor* describes what is actually extracted from the data, not what was put into the data. The correlation with each feeling after grouping by factor number 1–3 was as follows:

Feeling	Planet	F1 JU	F2 SA	F3 MA
Optimism	JU	0.74	-0.42	-0.03
Concentration	SA	0.69	0.22	-0.11
Eager	MA	0.69	-0.03	0.11
Joy	JU	0.67	-0.44	-0.03
Generous	JU	0.66	-0.10	0.16
Healing	JU	0.61	0.04	0.04
Protection	JU	0.57	-0.06	0.14
Oppression	SA	-0.14	0.83	0.08
Inhibition	SA	0.00	0.83	0.02
Difficulty	SA	0.07	0.82	0.00
Depression	SA	-0.19	0.76	0.15
Aggression	MA	-0.05	0.28	0.76
Impulsive	MA	0.17	-0.08	0.71
Injury	MA	0.00	0.50	0.57
Enforcement	MA	0.47	-0.05	0.51

The three factors account for 58% of the total variance (JU 28.5%, SA 20.4%, MA 9%), an order predictable from the likely frequency of their associated moods. The results show that the ambiguous *Concentration* (Saturn) and *Eager* (Mars) tended to be seen as a Jupiter feeling, otherwise the feelings cluster together as predicted from their respective semantic similarities. (In the test, *Concentration* and *Eager* were still kept as part of their Saturn and Mars clusters.)

Results

The distribution of mood ratings for each planet looked like this:.



The distribution of Mars and Jupiter mood ratings were normal. But that for Saturn is skewed, which suggests that days with depressive moods tended to be infrequent. Hueber does not say why the N's differ from 1530.

If transits are linked to our daily moods then the mood ratings should vary with the transit, and the correlation between mood ratings and transit scores should be significant:

Mean rating, sd, N for >	Mars -----		Jupiter ----		Saturn -----	
Days with transit	18.47	6.86	409	29.90	8.47	461
Days without transit	15.34	6.62	1178	23.94	9.66	1140
Correlation r^{**}	0.121	$p=0.014$	0.074	$p=0.115$	0.032	$p=0.514$

*Because the distribution is skewed, Hueber gives mean ranks rather than mean scores (ranks are more statistically valid when a distribution is not normal). A higher rank is equivalent to a higher mean.

**The df for her calculation of p is days-with-transit minus 2. Hueber does not give the correlations when days without transit are included despite their mood ratings being available. See also Comment below.

In each case the days with a transit have a higher rating than days without a transit. Every correlation is positive, but only one is significant (although barely significant when corrected for the number of tests), and none are large enough to be of practical significance. The least significant correlation (Saturn) is consistent with its lack of high mood ratings.

Hueber stresses that exact times of birth were necessary and were known to the test subjects (p.73), but gives no information about their actual exactness. She notes that social desirability could play a part by raising the ratings of desirable moods (*optimism*, *generous*) and lowering the ratings of undesirable moods (*inhibition*, *aggression*), but implies that this applies to both transit and non-transit days and therefore should not affect their comparison.

What about self-attribution? Hueber was careful to assess knowledge of astrology after the experiment was completed so the subjects were not alerted to its real nature, and found that one in ten had some knowledge of astrology. None were practising astrologers. But her test conditions were incompatible with those requiring subjective assessments of personality as in the famous Mayo-White-Eysenck test of 1978, because:

This study does not involve the personality of the subjects but the timing of mood qualities. These times are calculable only from the exact birth time of the subjects and planetary positions from an ephemeris. At the time of making daily records, no subject knew that the study was about astrology. In addition, no subject could know which planets were chosen and their characteristics. Therefore the relevance of prior knowledge is not plausible (p.63).

There were clear differences between some mood ratings, for example compared with males the females tended to rate joy and suffering more intensely, and adolescents <30 years were consistently more aggressive than older subjects. But any differences that could conceivably be related to knowledge of transits were in the wrong direction. Hueber concludes:

The prediction of emotional change, at times of planetary transits to individual horoscopes, is possible on the basis of this study. However, the data shows that not all subjects at transit times are subject to this emotional change (p.131).

Comment Hueber's many statistical analyses are based on the number of subjects $\times$ ratings, which greatly inflates their significance. This is because the sampling error is determined by what is sampled, in this case subjects, not by later elaborations, in this case ratings. Even if we count a million ratings for each of ten subjects, the underlying sampling statistic is determined by $N=10$ not by $N=10,000,000$, which means that the result applies only to that sample of 10 and not generally as implied by $N=10,000,000$. To put it another way, a sample of 51 subjects is too small to reliably determine even the largest observed correlation of 0.121, which would need a sample size of around 600 subjects, see 8.2.5.



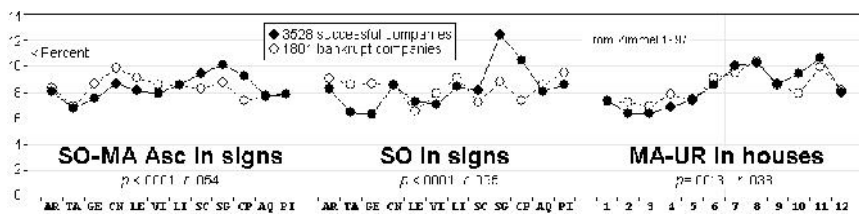
In 2017 Hueber's 1997 thesis was published unchanged in book form. Even the pagination and page layouts were unchanged. The problems raised here were not addressed.

Finally transiting aspects to angles other than 0° and 180° are not universally accepted by astrologers. So replications with larger samples, more variables, and more positive results are needed before we can conclude that transits affect our daily moods. Unfortunately any hopes that the 2017 book might have filled these gaps or at least updated its references were not realised. Nevertheless Hueber has launched a promising research design supported by factor analysis at a level rarely achieved in astrology.

7.4.1997.2 Success ($N=3528$) and failure ($N=1801$) in business

Manfred Zimmel. *Wenn Himmel und Erde sich vereinigen: Esoterik und Astrologie in der Wirtschaft* [When heaven and earth unite: Esotericism and astrology in the economy]. Diploma thesis, Department of Economics and Business Administration, Vienna University 1997. Plus an English summary by the author sent to *Correlation*, November 1998.

Official Austrian sources provided registration data for 5329 small or medium-sized companies registered in Austria between 1970 and 1996. Of these, 3528 had a good or excellent credit rating and 1801 went bankrupt. Zimmel systematically compared factors in their noon charts to assess their differences. Planets in signs were limited to Sun through Mars to avoid artifacts due to slower-moving planets. Planets in houses were limited to Mars through Uranus because Sun, Mercury and Venus can occur in noon charts only in houses around noon. Aspects were not tested because counts of aspects between Saturn-Neptune-Pluto suggested a mismatch in the distribution of registration dates that could have led to artifacts in aspect counts,



Many differences were found, often reaching very high significance due to large sample sizes, but always with tiny effect sizes (which were not measured by Zimmel in his thesis).

The tiny effect sizes persisted regardless of the diversity of tested factors. For example:

Factor	<i>p</i>	<i>r</i>	
Season of birth SpSuAW	0.00009	0.063	) <i>r</i> denotes either
Sun element FEAW	0.0072	0.048	) phi from a 2x2 table
MA-UR own house vs exile	0.0035	0.037	) or a contingency
SO-MA above/below horizon	0.00019	0.026	) coefficient from
SO-MA own sign vs detriment	0.12	0.017	) larger tables

Zimmel concluded that his results were:

highly significant but the expectations were only partially fulfilled.

Comment By which he meant there was an astrological explanation for only some of the turns his results happened to take. For example in the above plots, and despite the tiny effect sizes that show the explanation to have no practical significance, one that did apply was:

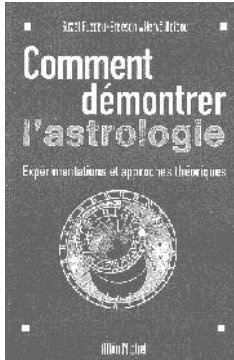
Cancer and 4th house inhibit business success, Capricorn and 10th house promote it, so the 4th-10th axis (IC-MC axis) symbolizes the fate and history of a person or company.

Unfortunately, despite his large samples, Zimmel does not divide them to see if his results replicate, so it is impossible to tell if they are due to astrology or to artifacts.

7.4.1999.1 Tests of transits with a total of 4755 events

Hervé Delboy. Transits, in *Comment démontrer l'astrologie* 1999 pp.221-306, described on the back cover as "The first book of its kind by scientists". Delboy is a medical doctor with a diploma in clinical research statistics. In this major computerised study he tests the transits of Mars, Jupiter and Saturn (other planets were either too fast or too slow for effective analysis) to the ten natal planets, Ascendant and MC, uniquely by angular separation in steps of one degree.

Why his interest in astrology? The only experience he could relate to was his seeing pictures of the planets at age 7. Later his focus was always on forecasting and especially on transits, but:



without the computer and special software, no serious work – that is with large numbers – could hope to be made to obtain at least some curiosity from the scientific world (p.222).

How to demonstrate astrology is a substantial (30 mm thick) well-presented (sewn binding) work of 380 pages halfway between A5 and B5 in size. About two-thirds is devoted to two studies, one by Suzel Fuzeau-Braesch on sociability, see 7.1.1997.3, and the present one by Hervé Delboy on transits. The rest is mostly devoted to the usual speculations about physical explanations for astrology (neutrinos, magnetism, hormones) with a short section on science as seen by French astrologers, see 7.3.1999.1. Contrary to what the title might suggest, there is almost nothing on how to actually do research. As is normal in French publications, there is a table of contents but no index.

His aim was explore the transits for events that were highlights in a professional career, which highlights he defined as follows:

Politicians: date of election or special appointment such as minister.
 Film actors and directors: date of film premiere or award ceremony.
 Composers: date of creation of an important work.
 Conductors: date of an important concert or recording.
 Painters: date of an important exhibition.
 Writers and scientist: date of an important publication or award.
 Magistrates and other professionals: date of a promotion.

He did not discriminate between events deemed happy (eg marriage) or tragic (eg divorce, death), or between levels of importance, he just took all the dates he could find that were reliably reported. But he was careful to accept only one date for events involving a transit that, due to retrogradation, was largely stationary. To guide his work he needed reliable literature sources, which he narrows down to these:

– Morinus. *La Théorie des déterminations astrologiques* (Henri Selva translation 1896/1976).
 – André Barbault. *La Prévision de l'avenir par l'astrologie* 1982 [Predicting the Future by Astrology].
 – Jean Baret. *L'Astrologie rencontre la science* 1984 [Astrology meets Science].

In Delboy's view, Morinus rightly warns against purely symbolic judgement (seen as "esoteric delusion") of a planet that ignores its sign, house, and aspects, while André Barbault preserves the symbolism but in modern terms, and has the merit of presenting many examples:

but apparently with no hesitation about the value of transits as recommended by Tradition (p.230).

Jean Baret applies a statistical analysis to 112 events of French politicians (he used transits of Jupiter, Saturn and Uranus to the natal Sun, Jupiter, MC, ruler of the MC, and planet closest to the MC, see 7.4.1977.1), which provides Delboy with a useful starting point. Unfortunately Baret did not use a control group, so "what can be concluded?" (p.230).

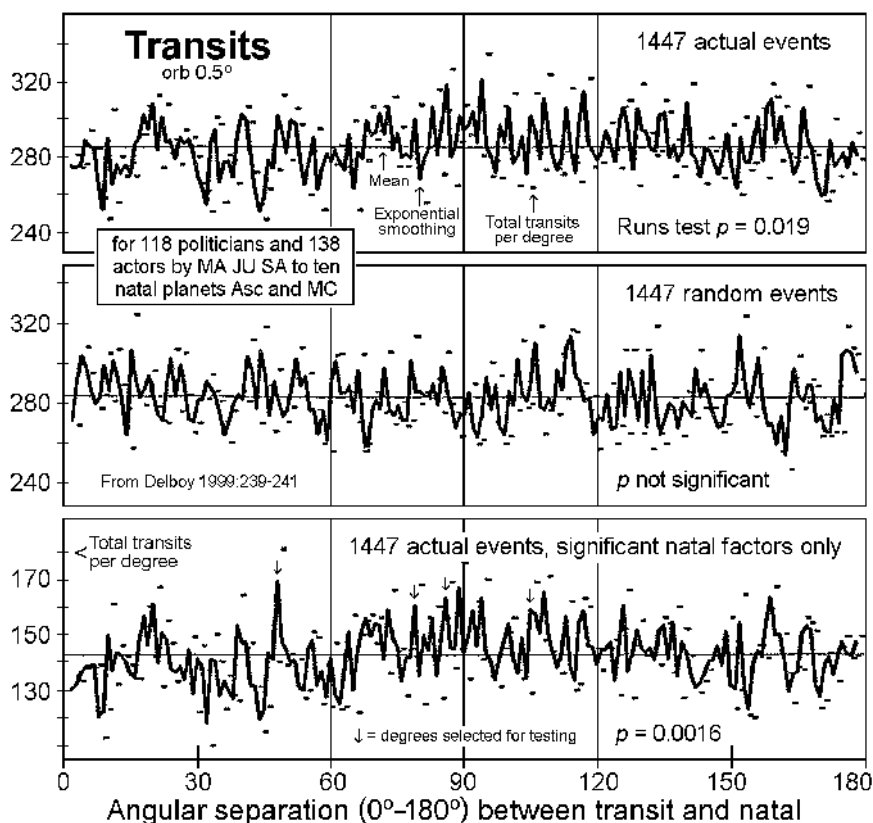
Delboy then tested Baret's approach after this cautionary consideration of orbs:

by employing large orbs – as numerous astrologers do – it is normal to find many coincidences, This point does not seem to have interested them; they generally answer that, for them, the problem does not arise, because they are convinced – a priori – of the reality of the material on which they work (p.233).

He adopted an orb of 3° and applied the Baret's approach to sets of event dates that had appeared in *L'Astrologue* and *Les Cahiers du RAMS*. Six sets showed good support for Baret's

(Pierre Boulez, Honoré de Balzac, Albert Einstein, Maurice Ravel, Arnold Schoenberg, Jules Verne), each averaging 54 events, but seven equally famous were discordant (Georges Brassens, Bela Bartok, Benjamin Britten, René Char, Paul Claudel, Claude Debussy, Victor Hugo), each averaging about 38 events, which "plunged me into perplexity" (p.236).

Further study showed that Uranus skewed the results due to long periods of staying within orb, so he changed back again to transits by Mars, Jupiter and Saturn to ten natal planets, Ascendant and MC. By 1995 he had computerised the frequency of hits for every degree of angular separation (0° - 180° with an orb of 0.5°) for 666 events by 118 politicians, and 781 events by 138 film actors, a total 1447 events for a total of 256 subjects. As a control he repeated the exercise for the same 256 subjects but using 1447 events picked at random, finally repeating the first using only natal factors that were significant (he gives no details but half were discarded including Venus and the MC). The results were provocative:



Top: the degree totals are all over the place. When exponentially smoothed * they are as shown by the thick line. But contrary to tradition, none of the peaks or troughs coincide with a major aspect. There is some evidence of clustering as shown by the runs test (see 8.7.11), but not in places that are visually obvious or as predicted by traditional orbs. **Middle:** similarly this second plot is not clearly different from the first, even though (as expected for random data) it shows no significant clustering. **Bottom:** the significance is as expected when only significant factors are tested, but again there is no clear support for anything. The orb in these plots is half a degree, so the transit width is exactly one degree.

* In the simplest form of exponential smoothing, the exponentially smoothed value of the n th data point x_n is given by:

$$s_n = (k x_n + (1 - k) s_{n-1}),$$

where s_{n-1} is the previous smoothed value and k is the smoothing factor 0-1 (use higher values for less smoothing, thus $k = 1$ gives no smoothing). Unlike a moving average, which uses only adjacent data points, exponential smoothing effectively uses all previous data points, thus creating potential serial correlations which could bias a runs test. Nor is it clear what value s_0 should be to generate s_1 (a serious drawback because exponential smoothing puts substantial weight on past observation; one approach is to run a smoothing for the first ten or more cases and take the average). So why does Delboy use it? He says it is used to smooth time series, and uses it because his plotted hits look like a time series – except they are not a time series, and a weighted average would be more appropriate. He does not give the equation he uses because "it might tire the reader" (p.239) nor does he present results from both methods of smoothing to justify his choice. For a work claiming scientific status, this is not acceptable.

Looking again at the top plot, Delboy comments:

0° and 180° aspects do not seem to be special, nor do 60° or 120° . But there is an undeniable frequency peak in the broad region of 90° . In fact one can recognise four such peaks ... [in the bottom plot] at 48° , 79° , 86° , 105° (p.242).

Comment The transit is 1° wide, so the probability of a transiting planet aspecting a natal factor approximates $1^\circ/180^\circ$ (not $1^\circ/360^\circ$ because the plot here is limited to 180°), and the expected number between three transiting bodies and twelve natal factors during 1447 events is $(1^\circ/180^\circ) \times 3 \times 12 \times 1447 = 289.4$. Delboy does not explain why he ignores other equally prominent peaks such as those at 108° and 126° . Indeed his plots contradict traditional ideas so well that further investigation would seem pointless, as confirmed by the other tests of transits in the present book. Delboy does cite a study by the Italian researcher Ciro Discepolo on 834 ministerial nominations (*L'Astrologie* 75, 117-120, 1986) with VE through PL transiting natal SO, MO, Asc, MC, which achieved only negative results, but dismisses it because it was not computerised and because the later Baret's study "had achieved significant results" (p.288), as if the absence of controls was suddenly not relevant. **End of comment.**

Before proceeding with further analyses, Delboy comments:

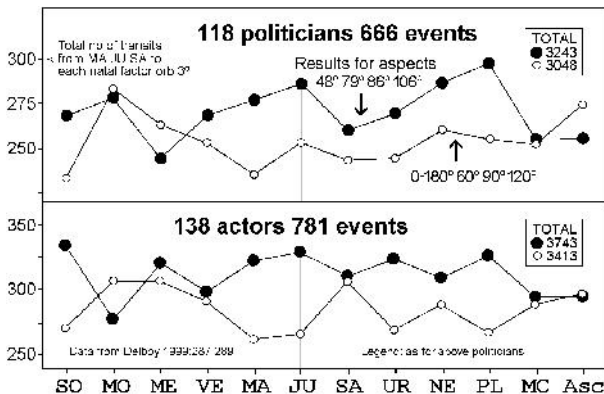
it is necessary to set out examples that will give the reader an idea of the process undertaken. ... First three examples from the world of show, with Gérard Depardieu, Romy Schneider and Phillippe Noiret. Then four examples taken from the world of classical music, with Beethoven, Brahms, Haydn and Mozart (p.247).

He then devotes more than 40 pages to events vs transits as might be found in any astrology book, except that he compares his four new angles of 48° , 79° , 86° , 105° with the traditional angles of $0-180^\circ$, 60° , 90° , 120° , all with an orb of 3° . The results (he says) favour his new angles. **Comment** For 3° orbs and four aspects, the probability of an aspect to one natal factor from one transiting planet approximates $(2 \times 3) \times (2 \times 4)/360 = 0.133$ and from three transiting planets is $1 - (1 - 0.133)^3 = 0.349$, which for 12 natal factors means that (as a first approximation) $12 \times 0.349 = 4.2$ transits are likely at any time. (Delboy's own example calculation is rather challenging. For 53 events he gives the number of transits to one natal factor from one, two or three transiting planets as:

$P_1 = 15.92$, $P_2 = 2.45$, $P_3 = 0.38$, and follows this by $P_1 + P_2 + P_3 = 21.9$ (it should be 18.75) which is bad enough, yet the next line repeats 21.9 as 12.9 (pp.303-304),

so its value to the reader cannot be great.) But with an average choice of 4.2 transits per event, getting any desired result should not be difficult. **End of comment.**

Delboy then repeats the exercise on his 118 politicians and 138 actors. Here are his results:



For nearly every natal factor the total number of transits is higher for his new angles compared with the traditional angles. The difference is significant ($p = 0.013$ for politicians and 0.002 for actors), and the differences for politicians and for actors correlate $r = 0.8$ across the twelve factors. Delboy comments "I do not see where there could be any bias explaining the very large excess of transits in the [new angles] group" (p.298).

Comment Ironically it is no more than expected when you select (as Delboy does) the most significant results for his four new angles in the first place. **End of comment**

As a check, Delboy applies the same analysis to 524 magistrates (2958 promotion dates) and to major painters (350 sales of paintings, number of painters is not stated). The magistrates had an excess of transits in the new angles group (20,737 vs 19,316 in the traditional group), but the painters always gave negative results (number of transits is not stated).

Despite these conflicting outcomes, Delboy concludes on a positive note:

I consider that it has been shown that transits are not a mere illusion. ... Yes, it seems that the Sun and Moon are important points; yes, it seems that the angles are privileged positions; yes, a chart even without the time of birth seems able to give interesting results, at least with the Sun. ... Yes, there seems to be angular separations other than

those recommended by tradition, of which 86° is close to a square and 48° is close to a semi-square. ... The only thing I will ask of the scientists is a review of my work that shows me where I am wrong (p.301).

Comment The problem is not just reconciling the above conclusion with the absence of support for transits as shown by his first plots, it is also: **(1)** The lack of technical details. For example despite briefly naming statistical tests (chi-squared, Mann-Whitney, Kruskal-Wallis, and Wald-Wolowitz, p.306), Delboy quotes p values with few indications of how they were obtained and never quotes effect sizes. So it is hard to know what is happening, and whether the results have any practical significance. **(2)** Having identified Uranus's slow motion as a problem, the potential problem of Saturn's slow motion is ignored. **(3)** As is the effect of his calculating transit probabilities via uniform planetary motion (p.303), which may or may not be good enough. **(4)** Also ignored are Gauquelin's negative findings for transits at death, see 6.3.1 and 6.3.3, even though his positive findings for planetary effects are quoted (pp. 290, 292). **(5)** There are various numerical discrepancies in Delboy's text, for example a list of date numbers totalling 862 is reported as 852 (p.291), and a total of 2951 (p.293) is also reported as 2958 (p.294). **(6)** Tedious and scattered narrative is preferred to tables that would have described the results (and revealed the problems) more clearly. As a result the 75 pages of text that follow his first plots are of little scientific value. They needn't have been like that.

That said, Ken Irving (*Correlation* 28(2), 51-59, 2012) has reviewed (inconclusive) research since 1997 by Spottiswoode and others that appears to show a link between human behaviour and the Earth's orientation to the galactic centre, which is thus a diurnal effect that varies according to local sidereal time rather than solar time. Here the behaviour is not your regular behaviour like going shopping or having heart attacks but success in ESP tests and spotting UFOs, which, given the traditional role of diurnal position in astrology, is a combination that:

might seem to present a perfect storm of wretchedness, but ... when an apparent diurnal effect involving individuals is reported outside of astrology, it should be explored, not ignored (p.52).

Irving concludes that, regardless of whether or not the Spottiswoode effect is confirmed by later research, it suggests that more astrological research should be directed towards transit events. And of course it is here that Delboy has provided a most useful starting point.

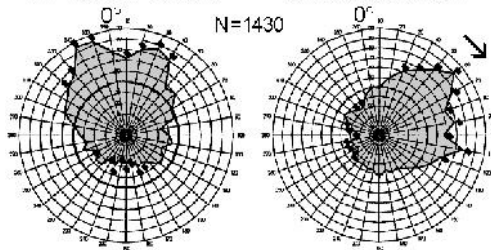
7.4.2000.1 A new way of testing directions at 1430 deaths

Hervé Delboy, Directions primaires et décès, *Les Cahiers du RAMS* 8, 29-52, 2000.

Most great writers, says the author, agree that directions between (1) Sun and Moon on the one hand, and (2) Mars and Saturn on the other, coincide with negative events. So his focus will be death, with primary directions (calculated by Regiomontanus or Placidus) involving 0-90-180-270 aspects for SO-MA, SO-SA, MO-MA, and MO-SA, using symbolic directions [their type is not stated] as a control. His test sample consists of 1430 individuals (mainly doctors, scientists, painters and politicians) from various sources such as Gauquelin and Barbault. Then comes a twist – the author does not specify orbs or count hits and misses. Instead he gives his results as circular 360° plots, which blurs the need for precise birth times (which are rare in the Gauquelin data, among others). In other words a direction that is otherwise untestable

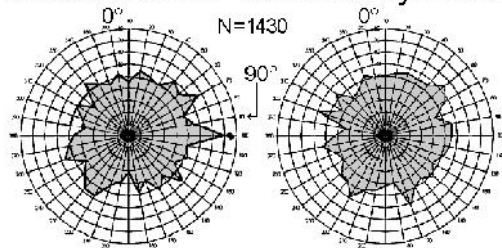
due to an imprecise birth time or uncertain orbs should still show up as part of a trend.

Sun-Mars angular separations in natal chart directed Sun



For example, the distribution of Sun-Mars angular separations at birth peaked at the conjunction, as expected on astronomical grounds. The distribution of Sun directed to Mars at death is much the same but is rotated in the direction of diurnal motion by an amount corresponding to the age at death. Again nothing special. (Black dots mark scores for which $p < 0.01$ by a chi-squared test.)

Sun-Saturn angular separations directed Saturn same but symbolic



Again as expected, the distribution of Sun-Saturn angular separations at birth showed no special peaks, but the distribution of Saturn directed to Sun at death showed a single clear peak, whereas the distribution of Saturn symbolically directed to Sun at birth did not show a similar peak. The author saw this as positive evidence for the validity of primary directions.

Comment The Sun-Saturn Peak is at 100°, not 90° as required by the hypothesis, and there was

no sign of unusual peaks at 0-180-270°. But look at the distributions. No working astrologer would see any reason here for choosing primary directions over symbolic directions (or vice versa), even supposing there was a traditional reason for choosing 90° rather than 0-180-270°.

More problems. The author gives eight examples to show how directions work. Three are of famous people who (he says) died under appropriate directions. But he gives no orbs, and as shown below some of their birth data differ from that given by reliable sources:

Name	Delboy	Reliable source
Frederic Chopin	01 Mar 1810 16h36	22 Feb 1810 6 pm (birth certificate)
John Coltrane	23 Sep 1926 22h30	17h (AstroDataBank AA rating)
James Dean	09 Feb 1931 03h09	08 Feb 09h (AstroDataBank AA rating)

The times for Chopin and James Dean are very precise, which suggests they are rectified. The date for James Dean even has the *day* wrong, so the supposed directions at death (directed Mars square natal Moon, directed Saturn conjunct natal Sun) cannot possibly be correct. So we might remember what Sepharial said in 1921 in his book *Directional Astrology*:

All the directions formed by the diurnal rotation of the Earth on its axis are formed within a few hours of birth [so an accurate birth time is essential] ... I am quite satisfied in my own mind that what we call primary directions seldom or never operate exactly to time ... [Nevertheless] unless there was a close agreement throughout a life between the arcs of direction and the events portrayed, there would be no use in making the calculations (pp. 54, 76, 91).

In other words orbs are a necessary part of directions. But like Delboy, Sepharial does not give orbs, although his examples show a maximum orb of 0.8° (pp. 58-61). Dutch research gave negative results with an orb of 1°, see 7.4.1987.1. Furthermore Delboy does not divide his 1430 deaths to see if the findings replicate, nor does he apply his approach to control charts generated at random. So it is impossible to know if his results mean anything. And even if we did know, their relevance for the working astrologer would remain unclear.

7.4.2001.1 War, prosperity, and the outer planetary cycle

Rudy Bes, *Correlation* 20(1), 4-27, 2001 and 22(1), 38-51, 2004.

The author assembles all possible planetary cycles including harmonics of the five outer planets Jupiter through Pluto, and uses the best combination to predict future trends:

The results of this forecasting method indicate that the 21st century will likely be a reverse of the 20th century, beginning with two successive periods of economic recession, recovery, and prosperity in the first two decades, followed by three periods of recession, depression, and global warfare in the last eight decades of the century (p.22).

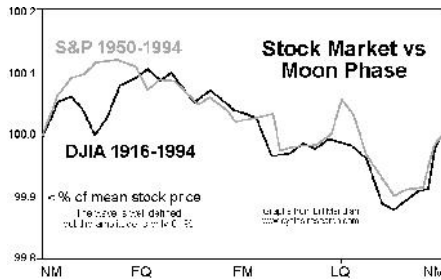
In his 2004 article the author introduces a sine conversion (described in 7.4.1993.3 comment) and predicts that a significant correlation will be found between his planetary wave and indices of war and economic growth. **Comment** which of course was confirmed because the cycle had been selected for giving a significant correlation in the first place.

7.4.2002.1 Moon phase vs stock market prices

Manfred Zimmer. Luck on the stock exchange? From his website in 2002

For this purpose, there is an excellent research paper published at the University of Michigan Business School entitled "Are Investors Moonstruck? Lunar Phases and Stock Market Returns" (<http://web.user.bus.umich.edu/>). The conclusion on page 25 is:

This paper examines the relationship between lunar phases and stock returns for a selection of 48 countries. We found clear evidence that equities are lower in the days around Full Moon than around the New Moon. With a lunar strategy you can achieve a performance gain of about 4.2% per year. Since lunar phases are probably related to investor sentiment and not to economic activity, our findings are not consistent with the traditional pricing theory developed by fully rational investors.



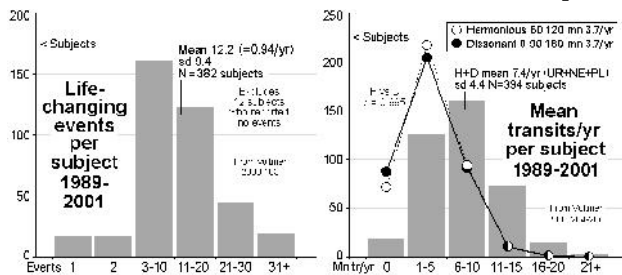
These charts by Bill Meridian <http://www.cyclesresearch.com/> for the Dow Jones over 80 years and for the S&P 500 over 35 years demonstrate this relationship: The wave is well defined. On average, the stock indices are lowest 2-3 days before New Moon and highest 3-5 days after. The time near New Moon is rather bullish (rising), the time near Full Moon rather bearish (falling).

The effects are undoubtedly real and consistent but their amplitude is very small (0.1%) and usually too weak to be relevant to practical trading. They are more clearly linked to sentiment (ie emotional market phases) than rational economics, as also shown in 7.4.2006.2.

7.4.2003.1 Life-changing events vs UR,NE,PL transits N=372

Ulrike Voltmer. *Lebenslauf und astrologische Konstellationen: Eine empirische Studie zur Prüfung behaupteter Zusammenhänge* [Life events and astrological transits: An empirical study for testing alleged connections]. PhD diploma thesis in psychology, University of Saarland 2003, 240 pp. A study guided by Eysenck's "requirements for astrological research" in *Astrological Journal* 24(2), 76-84, 1982, ie testability, replication, statistics, controls, relevant artifact-free methods, unbiased samples, exploration of unexpected effects and non-astrological explanations. Voltmer is a lecturer in music psychology and a former chairperson of the DAV (Association of German Astrologers). An article with Bernd Kessler in *Zeitschrift für Anomalistic* 2, 218-244, 2002 concluded that transits offered the best way of testing astrology,, which she follows up in this thesis. Do years with life-changing events have more natal transits from UR,NE,PL (all traditionally connected with change whereas JU,SA are not) than years without such events, and vice versa. The focus on years avoided the need for orbs, exact birth times and remembering exact dates, which offsets the loss of precise timing.

Voltmer circulated questionnaires via schools, organisations, acquaintances, and a free local calendar of events. Recipients had to provide personal information including birth data and indicate which of the 13 years 1989-2001 had been marked by a life-changing event in areas such as occupation (eg new job), money (eg pay rise), love life (eg breakup), home (eg relocating), and health/death. There were 400 responses (5% of the circulation), of which up to 28 depending on criterion were incomplete. Mean age was 57 years, range 16-88, and 73% were female. Interest from DAV members led to a surprising 57% being informed about astrology.



During each year of 1989-2001 each subject experienced an average of 0.94 life-changing events and 7.4 transits from UR,NE,PL to natal planets (SO,ME-PL,NN excluding MO and the angles), each with large individual variations.

Because harmonious transits ($60^\circ, 120^\circ$) and dissonant transits ($0^\circ, 90^\circ, 180^\circ$) both involved a total of four angular contacts, their frequencies were much the same. Correlation $r = 0.995$.

Here are the 2 x 2 results for years with *events* vs years with *transits* (effect size phi's added):

Subject is >>	Informed about astrology				Ignorant about astrology			
Total = Subjects x yrs	Total = 2808 (216 x 13)				Total = 2018 (156 x 13)			
Year has transits? >>	No	Yes 1+	No	Yes 2+	No	Yes 1+	No	Yes 2+
Year has (No	56	1209	83	1182	68	1067	102	1033
an event? (Yes	57	1486	97	1446	44	849	67	826
phi effect size, <i>p</i>	0.019 0.38		0.006 0.83		0.023 0.35		0.027 0.26	

The correlation r 's between events per year and transits per year for N cases were:

Subject is >>	--- Informed ---	--- Ignorant ---	--- Combined ---
N = subjects x yrs	N=2834 (218 x 13)	N=2132 (164 x 13)	N=4966 (382 x 13)
Ev/yr vs all tr/yr	<i>r</i> 0.052 <i>p</i> 0.006	<i>r</i> 0.034 <i>p</i> 0.125	<i>r</i> 0.052 <i>p</i> 0.0003
Ev/yr vs UR tr/yr	<i>r</i> 0.051 <i>p</i> 0.007	<i>r</i> 0.036 <i>p</i> 0.104	<i>r</i> 0.050 <i>p</i> 0.0004
Harmonic tr tended to be less significant than dissonant tr (<i>r</i> 's were not reported)			

[Voltmer generally ignores effect size phi's and r 's. Some are significant due to large N 's but are very small and within the noise levels explored in 7.7.2016.3. They offer no clear support for transits.] After discussion of her results with critical colleagues, Voltmer concludes:

The results of this study indicate that transits occur significantly more frequently when certain life events occur [but] it can be assumed that several [non-astrological] causes are responsible (pp.185,192). [For example the significantly higher r 's for informed subjects is consistent with a selective recall of events that happen to agree with astrology]

Comment Voltmer minutely dissects her data to give over 600 test results but looks only at their p values without correction for the number of tests. She gives effect sizes only for her six correlation analyses, but even here their negligible magnitude is ignored in favour of p values. Despite her attention to Eysenck's research requirements and her pursuit of possible artifacts (such as the effect of astrological knowledge; and UR-NE-PL's limited travel in 13 years; but still overlooking the artifact due to the difference in event vs transit frequencies that might explain her results as effectively as it did John Nelson's, see 7.4.1978.2) there is no review of previous tests of transits, none of which are convincingly positive, see this chapter. The same neglect of existing studies is also apparent in the anthology *Astrology und Wissenschaft* jointly edited by Voltmer, see 7.2.2011.3, a neglect that the present work should help to correct.

7.4.2005.1 Can astrology help attempts to conceive?

Pat Harris, *Applications of Astrology to Health Psychology*. PhD thesis University of Southampton 2005. Harris is a professional astrologer and, since 1999, editor of *Correlation*. Her website www.astrologyfashion.com claims that "Everything that can be experienced in a person's life is contained within the astrological birth chart", and offers an *Astro Fashion Profile* that "can help guide you to the right style...colours...shape...fabric...texture, and...your secret fantasy image!" (17-18 pages for £30). Earlier, during twenty years of professional practice, she noticed that nine mothers had given birth when factors traditionally related to birth (Venus and Jupiter) were present, and factors traditionally related to barrenness (Saturn) were absent. One client had conceived via IVF (In Vitro Fertilisation) under these factors, which had been absent during seven failed attempts. Which suggested that astrology could improve the IVF success rate – an idea she explores in this thesis. She was funded by the AA, FAS, and RGCSA.

A pilot sample of 27 women with a total of 114 IVF treatments (successful for 15 women and 16 babies, unsuccessful for 12 women) was gathered via ads, interviews, websites. Location was UK 16, USA 9, Australia 1, not stated 1. Ages were 25-43, mean about 30 (age is important because fertility declines sharply after age 34). Each woman had data on 36 variables such as type of treatment, state and trait anxiety scores, depression score, belief in astrology, and of course birth data. These variables plus astrological factors were regressed against outcome to determine the most effective predictors. The astrological factors were:

- (1) Secondary progressions of SO, MO, VE, JU, and 5th ruler if in 5th house.
- (2) Transits of JU. All progressions and transits were to (3).
- (3) Natal SO, MO, VE, JU, Asc, and MC.

Asc and MC were included only if the birth times were accurate (Harris does not say what "accurate" means but her text implies "reported to better than 5 minutes"). Otherwise "it is acceptable to consider planetary contacts for birth charts of which the time is known accurately to within half an hour" (p.98). Aspects were 0, 30, 60, and 120° for both progressions and transits. Orbs at treatment for all aspects were: Progressed SO, VE, and 5th ruler if in 5th house, ± 6 months, MO ± 2 weeks, JU ± 3 months. Transiting JU had to be exact during the 14 days before treatment including the day of treatment (p.97). Harris's choice of factors was based on the traditional idea that JU, VE and MO are *givers of children*. Not considered were other planets or other techniques for predicting events such as directions. Nor was the confound due to age, which is the most important predictor of fertility.

After discarding nonsignificant variables, only depression, fertility problems, location, and some astrological factors were left. The regression equations (p.115) were typically like:

$$\log_e (P/(1-P)) = -3.5 - 4 \text{ ClinLoc} - 2.5 X + 3 \text{ Astrology}$$

where P is not explained but seems to be the probability of success, and $P/(1-P)$ seems to be the odds, defined as (probability of success)/(probability of failure). *ClinLoc* = location of clinic (not explained but maybe UK = 1, USA/Aus = 2, reflecting national success rates of 1 in 5 and 1 in 3 respectively). X = either *was once diagnosed as depressive* (yes/no) or *has fertility problems* (yes/no). Models that included both kinds of X were unstable. The first gave slightly better results. *Astrology* = astrology factors present yes/no (p.112).

The astrological factors that were retained were progressions of VE and JU, plus transits of JU, both to natal SO, MO, VE, JU, and (for accurate birth times only) Asc and MC. When applied to the pilot sample, the results (p.102) were:

Outcome of 114 IVF treatments (27 women, 16 babies)				
Factors & prediction	Baby	No B	Total	
Present = Baby	12	22	34	) Significators exclude Asc+MC
Absent = No B	4	76	80	) Success rate=(12+76)/114=77%

Same but accurate birth times only

Present = Baby	13	31	44	) Significators include Asc+MC
Absent = No B	3	62	65	) Success rate=(13+62)/109=69%

The above results assume that the observations are independent, which is not strictly true because some women had more than one treatment (the maximum was 11 treatments). But tests that took this point into account found it had no appreciable effect (p.119). The selected model was then applied to an independent sample of 43 IVF treatments for a total of 28 women and 4 babies, but with *ClinLoc* held constant because all treatments were in the UK from two National Health Service clinics and one private clinic. As before, the results (pp.149 and 151) were slightly better for $X = depressive$ and were:

Outcome of 55 IVF treatments (28 women, 4 babies)				
Factors & Prediction	Baby	No B	Total	
Present = Baby	0	6	6	Significators exclude Asc+MC
Absent = No B	4	45	49	Success rate=45/55=82%, $p=0.14$

Same but accurate birth times only

Present = Baby	1	5	6	Significators include Asc+MC
Absent = No B	3	46	49	Success rate=47/55=85%, $p=0.058$

The results are not significant ($p = 0.14$ and 0.058 respectively, p.153) so Harris concludes:

the model [as developed] did not produce evidence to reject the null hypothesis that astrological factors have no bearing on fertility treatment outcome at the 5% level. (p.154)

Nevertheless she feels that the results justify further research despite inadequate sample sizes (p.159). Consistent with the lack of significance was the finding that an absence of Saturn (the planet traditionally linked with barrenness) was not associated with success (p.61), nor were contacts of natal SA to natal SO, MO, and VE (contacts traditionally linked with gloom and doom) significantly related to self-reported anxiety and depression (p.102):

Self-reported:		Anxiety N=49		Depression N=48	
		Yes	No	Yes	No
Saturn	Yes	4	22	7	19
contacts?	No	5	18	10	12
Phi		0.08	$p\ 0.57$	0.19	$p\ 0.18$
Success rate		22/49 = 45%		19/48 = 40%	

Only women who provided self-reports could be included, hence the sample sizes are less than the pooled sample size of $27 + 28 = 55$. In theory Saturn contacts should create hit rates of $>50\%$ among the anxious and depressed, but they do not and are in the wrong direction.

Comment In *Correlation* 25(1), 4, 2007, despite these negative results, Harris claimed they supported astrology's "potential to be of value to society in many different ways". Later in the *US Journal of Sexuality, Reproduction & Menopause* 6(3), 43-44, August 2008 she claimed they showed that "attempts to conceive during [astrologically] optimal times have an increased likelihood of success", which required an editorial note advising that "the research results presented in the following article are not statistically significant". The May 2009 issue contained a letter from Professor of Health Psychology Jacky Boivin (four of whose IVF studies appear in the references to Harris's thesis) and five associates from the School of Psychology at Cardiff University, who pointed out that (among other things) reliable results would require a sample size of nearly 400 women, not 27 & 28 with 16 & 4 babies. So Harris's results "are entirely spurious" and her conclusion "is completely unwarranted".

In fact anyone could conclude the same because there were no proper controls or expectancies or tests of orbs, without which the results are of course largely meaningless. Similarly if we use Harris's method of calculating success rates and predict *No Baby* for each treatment, the results are immediately superior to astrology (see previous table) for both N=144 and N=55:

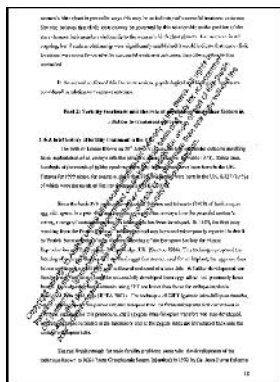
-----Outcome-----				
Prediction	Baby	No B	Total	
Baby	0	0	0	Prediction is always No Baby
No baby N=144	16	128	144	Success rate = $(0+128)/144 = 89\%$
No baby N=55	4	51	55	Success rate = $(0+51)/55 = 93\%$

Here the success rate is inflated in the same way that predicting *No Rain* inflates the success rate for weather forecasts in arid areas. What we want to know but Harris doesn't tell us is the success rate expected by chance. However, because the astrological factors were chosen by inspection for N=144 treatments, we expect the proportion of *astrology is present* to be higher here than for N=55 (factors not chosen by inspection), in the same way that peeking at cards in advance allows us to pick the best hand. And they are indeed more than two times higher:

Sample	Asc+MC are	Excluded	Included
N=144 Astrology is present/treatments	34/144=0.24	44/144=0.31	
N=55 Astrology is present/treatments	6/55 =0.11	6/55 =0.11	
N=144/N=55 (predicted to be >1) are 0.24/0.11 = 2.2, 0.31/0.11 = 2.8			

So when Harris notes that the "associations were very strong" (p.174) for N=144, this is merely the outcome to be expected anyway, and has nothing to do with astrology. In other words, although *astrology is present* is good at predicting *No Babies*, its failure to predict *Babies* is unsurprising. Her claim that her results "pose an intriguing challenge to future researchers" (p.174) is to overstate the case – no study of this type based on such small samples can be a challenge to anyone. Nor can statistics based (as here) on *treatments* be a challenge when the underlying distribution is determined by *participants*, which means that her statistics are necessarily misleading. Especially as she deals only in *p* values as a measure of effect as if this was unproblematic. Thus in her 263 pages "effect size" receives not a single mention, not even in the literature review, leaving readers with no idea of scale, ie the classic smokescreen.

In principle we could calculate the success rates expected by chance if we converted Harris's orbs in time to orbs in degrees, but in practice such conversion is frustrated by retrograde periods (Venus's last about 42 days every 1.6 years and Jupiter's last about 120 days every 1.1 years), which might tell an informed researcher that progressions (1 day in the ephemeris = 1 year in life) are not a good choice, especially when treatments are not widely separated. Unfortunately Harris gives no birth data or treatment dates so it is impossible to check her work or to know exactly what is happening.



So as noted by Professor Boivan and associates, the claim of a link between astrology and IVF success rates is completely unwarranted. It might of course genuinely exist, but Harris's results do not allow this conclusion. Furthermore, although her thesis is dated December 2005, it was under an embargo until May 2010 that prevented its release. When the thesis on CD eventually became available, it was made difficult to read by this large copyright notice overprinted on every page. An embargo for a thesis is unusual, although it can be granted if the contents are commercially sensitive. According to Harris (in a letter to Professor Chris French), the embargo had been imposed by the university at her request because she had an

agreement with an international publisher to bring out a book that would contain all the methodology and results of the thesis. But over 15 years later such a book has yet to appear.

Conflict of interest All this might make sense if the contents were sufficient to launch an ethical business in astrological IVF advice but obviously they are not. Yet on her website

With thanks to Professor Boivin for helpful comments.

Westran wanted to correct the lack of information in most books on synastry about the role of progressed aspects. His study was prompted by the idea that trines might be good and squares bad for relationships, and that transits show external events whereas progressions show how you change inside, all helped by the trine between his and his wife's progressed Venuses when they first met. Initially he analysed by hand the charts of people involved in a total of 1300 relationships with birth data from public records including AstroDataBank. Later in *Correlation* 33(2) he reports a computerised re-analysis and the results for a further 1300 cases.

Certain relationships involving the Sun and Venus are consistently prolific and as such are attention grabbing. When we follow these aspects through time we often are able to map the beginning, middle and end of relationships, this is because they appear to play a role in the foundation of relationships (causing intense attraction), they then change over time. And as they change, the relationship dynamics appear to change (author's webpage expanding an *Astrology News Service* review).

When the experiment was repeated in 2019 [N=1300 public-record relationships], the same pattern of significance was observed for SO-VE trines, conjunctions and oppositions inside $2^{\circ} 1'$ as was observed in 2005 [N also 1300] (2021:19):

[illegible]

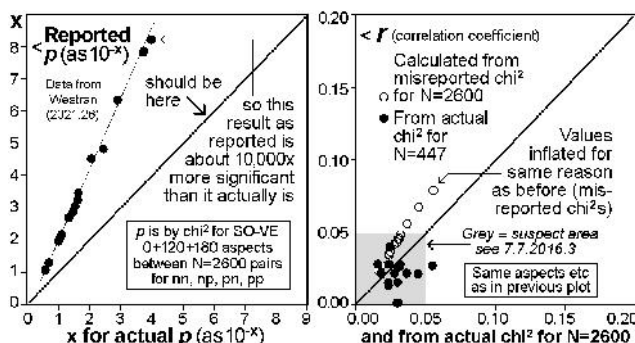
this attempted debunk confirms that Westran has come up with a compelling result. ... We spent months reviewing this paper ... Many drafts were exchanged between [our UK and US referees and Westran] ... Overall, we are impressed by Westran's diligence, transparency and authenticity. I am proud to include it in this edition of *Correlation* (p.8).

Comment p values are calculated from "Chi2 tests using 2x2 contingency tables" (2021:28), which compare 2 independent groups to see if they differ significantly in their proportion of X:

Case contains X? (here a given aspect):	Yes	No	Total	
Group 1 here the experimental sample	a	b	a+b	) Here a+b = c+d
Group 2 here the control sample	c	d	c+d	) so sample size N
	Total a+c	b+d	n	) so n = 2N

For such a table $\chi^2 = n(ad-bc)^2 / (a+b)(c+d)(a+c)(b+d)$, and degrees of freedom $df = (rows-1)(columns-1) = 1$, for which p can be looked up in books or calculated by statistical software. Neither group should contain more than one independent variable (cats are OK but not cats+dogs), else $a+b$ could exceed sample size, which is not possible.

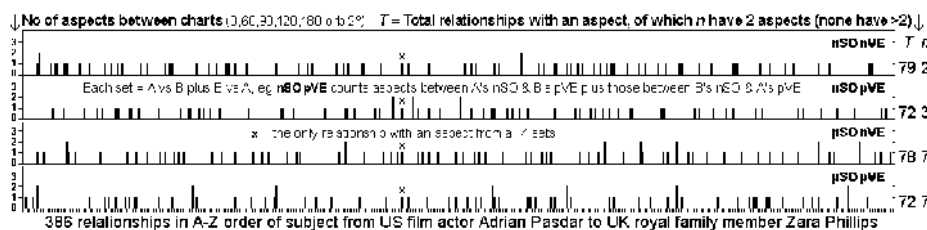
But Westran uses $\chi^2 = (a-c)^2/c$, thus ignoring b and d , and combines independent variables such as A's aspects and B's aspects, which invalidates the test. It also increases df , but he sticks to $df=1$. Each mistake inflates p , which (since the study relies on p values) inevitably reduces Westran's heroic labour to heroic inutility, yet *Correlation's* editor and referees could find nothing wrong. Westran's Table 9 (p.26) helpfully shows a , c , and his calculated χ^2 and p for each kind of X for $N = 2600$; this does not correct the combining of independent variables but it does allow an idea of the error arising from incorrectly calculating p via $\chi^2 = (a-c)^2/c$:



Left: Although "actual" calculations have to use the same invalidly-combined variables (ie A's aspects + B's aspects), p 's based on $\chi^2 = (a-c)^2/c$ are too significant by orders of magnitude.

Right: Effect size r between X and reality is given by $\sqrt{\chi^2/N}$ for $df=1$. It tells us whether X is of any practical use. Here the answer is no – r 's are uselessly tiny and are generally within the suspect artifact level see 7.7.2016.2. Unlike p , r is not inflated by large N , and r for $N=477$ vs r for $N=2600$ (black dots) shows no systematic bias, disconfirming the claim that $N=447$ is unscientific and betrays trust.

Do relationships favour one type of contact (nn, np, pn, pp) over the others? To find out, we can plot the aspect counts for each relationship, which for our $N=447$ minus those with more than one partner to avoid potential artifacts (this reduces N to 386) looks like this:



The answer is clearly no. The T values are all much the same, showing that no set is notably more successful than another.

Also of the 386 relationships about 43% have 1 aspect, 16% have 2-4, the rest have none. which together with the uniform T values suggests that the underlying symbolism is less relevant than chance (unless of course all relationships are much the same, which seems unlikely). Correlation between sets averages -0.02 , $p=0.65$, which confirms their independence. The n values show that, as expected, few aspects in each set are shared by both A:B and B:A. r effect sizes (see 8.2.1) are all around 0.03 ± 0.01 , arguably too close to zero to inspire confidence that only astrology is at work. As expected the exact outcomes depend on N and which partners are avoided, but the above plots seem typical.



Westran is not the only researcher focussed on SO-VE. In his 176-page 1983 book *Dynamic Astrology in the Light of Science* Danish researcher Sven Svendsen tells how he applied German astrologer Edmund Troinski's minor progressions (1 day in the ephemeris = 27.32 days = 1 Moon period in life) and tertiary directions (27.32 days in the ephemeris = 1 year in life) to his own wedding. He found to his "pleasant surprise" a tertiary SO-0-VE of orb 0.4° (p.37). For his brother's wedding to his "great surprise" the orb was 1.6° . For Danish King Frederik IX's wedding it was 0.15° (now he was "really impressed!"), but not for an anonymous fourth wedding (p.38). This set him to scientifically prove astrology using three sets of marriages (total $N = 584$) and SO-VE conjunctions in the tertiary chart. His

original orb of 5.5° (not a misprint) was later enlarged to 7° to "obtain a somewhat broader range of material for observation" (p.139). Their presence was confirmed for *applying* aspects in *inferior* conjunctions in *one* of the sets (10 hits vs 4.33 expected, $p = 0.007$) but not for the rest, which were either non-significant or in the wrong direction (p.140). There were no control groups and no correction for multiple tests. Nevertheless Svensson concludes "the claim must be considered proven" (p.146). Read that again. Would you agree?

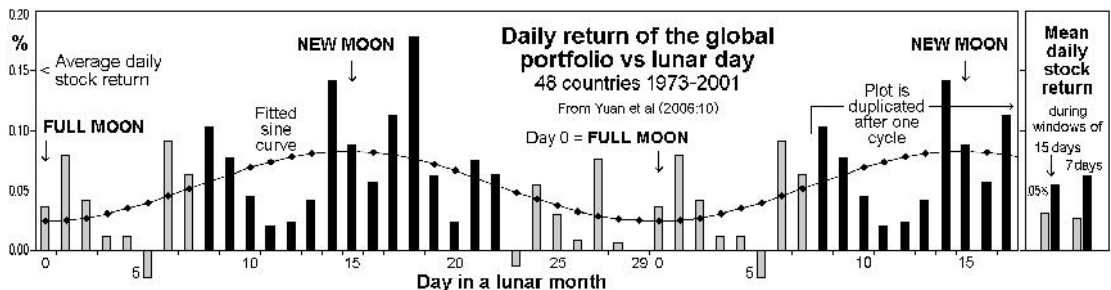
Comment Because 90 years of life are described in the ephemeris by 90 hours (primary directions), 90 days (ordinary directions and secondary progressions), 1203 days (minor progressions), and 2459 days (tertiary directions), Troinski (1910-1982), to whom Svensson's book is dedicated, had in effect (like Westran) greatly increased the chance of observing hits.

7.4.2006.2 Do lunar phases influence stock returns?

K Yuan, L Zheng, Q Zhu. Are investors moonstruck? Lunar phases and stock returns. *Journal of Empirical Finance* 13, 1-23, 2006. The belief that lunar phases affect human mood and behavior is pervasive in all countries and dates back to ancient times. Today the belief is "perpetuated by the media and is notably widespread among health professionals" (Voracek et al, *Wiener klinische Wochenschrift* 120(11-12), 342-349, 2008:343). But despite the latter it does not affect the frequency of post-operative bleeding or of emergency admissions to hospital, see 8.5.4, indicating that the effect is psychological rather than physical. In other words the effect is not due to the moon and but to moon *beliefs*.

Is it possible that lunar phases could affect the securities market? If investors make strictly rational decisions, then the answer is no. However, investors are subject to loss-aversion, over-confidence, and mood fluctuation. Here the last is the interesting one. Moods are affected by beliefs so in principle lunar beliefs could affect stock *returns* (ie profits on investments as distinct from stock *prices*) in the same way as they affect food intake. Thus 694 adults paid to keep a 7-day eating diary showed a significant 8% increase in meal size and a 26% decrease in alcohol intake at full moon compared with new moon (de Castro and Pearcey, *Physiology and Behaviour* 57, 439-444, 1995). In moon lore a full moon signals a depressing "decrease in light", compared with the optimistic "increase in light" signalled by a new moon.

On this basis stock trading should be less attractive during the depressing full moon phase and more attractive during the optimistic new moon phase. To find out, we examined the equal-weighted returns of a global portfolio of stock for 48 countries during 1973-2001. Here are the results for each day of the lunar cycle averaged over 1973-2001, a total of 415 cycles:



As expected the daily totals are erratic because the lunar signal is very small compared with the noisy background of general trading, but the fitted sine curve shows a clear wave with a peak at FM and a trough at NM. **Extreme right:** the mean daily stock return during the 15-day window around FM is about 0.025% lower than the same around NM. If the window is reduced from 15 days to 7 days, the difference is slightly increased to about 0.035%, consistent with the closer to exactness the larger the effect. Owing to the large number of observations averaging 4482 per country (range 1750 for the Czech Republic to 7445 for Italy, sd 208 for $N=48$), the above differences, although very small (equivalent to an effect size of around $r = 0.01$), are statistically significant, typically $p = 0.01$.

The difference was not explained by changes in stock market volatility or trading volumes, or by macroeconomic announcements (eg the consumer price index) or by major global shocks (eg devaluation of a country's currency). It was independent of other mood-related effects such as higher returns on sunny days, on days before a national holiday, in the first half of a month, in January, and lower returns on a Monday. It was also independent of lunar holiays. Interestingly, emerging markets typically have more individual investors than do established

markets where investors tend to be institutions, and their differences are typically twice the size, supporting the idea that the effect operates via individual mood.

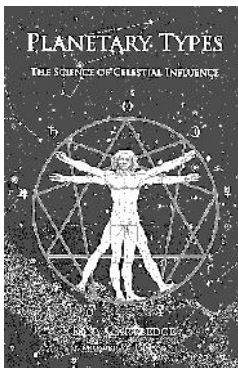
Comment The authors include many checks for artifacts, and their findings have been confirmed by Floros and Tan, *Journal of Emerging Market Finance* 12(1), 107-127, 2013. Their findings are valuable because here people are acting according to their lunar beliefs, whereas they have no such option when, say, bleeding after surgery or giving birth. People do not choose to bleed or give birth just because the moon says so, but they can choose to trade.

Nevertheless the belief that bleeding and births are more frequent during a full moon is widespread among nurses, midwives, and other health professionals (for example see 8.5.4 and Schaffir, *American Journal of Obstetrics and Gynecology* 195, 878, 2006), even though such beliefs are contradicted by the evidence. For example no relationship with lunar phase has been found in studies involving many thousands of cases of bleeding, see 8.5.4, and many thousands of births including 167,956 births in Phoenix 1995-2000 (Morton-Pradhan et al, *ibid* 192, 1970-1973, 2005), and 564,039 births in North Carolina 1997-2001 (Arliss et al, *ibid* 192, 1462-1464, 2005). That health professionals (who should know better) can hold totally false lunar beliefs shows just how tenacious such beliefs can be. So it would be surprising if such beliefs were not held just as tenaciously by people who trade stocks.

Given the tenacity of lunar beliefs and the lack of independent support for direct lunar effects on people, the present results clearly show how beliefs alone can achieve otherwise impossible effects. In other words knowledge of lunar phase affects mood, which then affects investment behaviour – a sequence that could hardly be more relevant to astrological claims generally.

7.4.2009.1 Book review: *Planetary types*

Tony Cartledge. *Planetary Types: The science of celestial influence* 2009. With a Foreword by US astrologer AT Mann.



This is one of the few astrology books that attempts to be properly scientific. AT Mann's Foreword (pp.7-9) gives a taste of what lies ahead:

This book is a brave undertaking because the author presents the hypothesis that a system of planetary types is valid both scientifically and symbolically. ... [His book presents] the issues of astrology from a critical and analytical viewpoint ... and introduces ... the work of George Gurdjieff, Peter Ouspensky and Rodney Collin ... [plus] psychological archetypes ... Gurdjieffian typology ... the research work of Michel Gauquelin ... harmonics and wave forms ... resonance ... a wide range of historical and current people to demonstrate his thesis and create what he considers to be the foundation of a new science of astrology.

Cartledge's thesis is that it may be possible to classify humans into types that correspond with the classical planetary symbolism of Sun through Saturn as recorded in ancient writings. For example:

- The luminaries were the lords of life – the Sun of light and wisdom, the Moon of the dark unconscious.
- Mercury was a messenger – swift, changeable, because of his rapid and erratic movement.
- Venus was a femme fatale because she courted the Sun god.
- Mars was the ruler of war because he glowed red.
- Jupiter, in the middle of the hierarchy of motion, was moderate and judicious.
- Saturn was a phlegmatic old man because he moved the slowest (p.14).

Cartledge faces up to the challenges right from the start:

It seems that anyone who attempts to write seriously about astrology find themselves in a curious no man's land between the hard sciences and popular metaphysics. ... Perhaps the main reason for the divide ... is that astrology has had no clearly defined premise, no plausible mechanism to explain its effects, and no experimental model with which to make predictions. [Nevertheless] many people feel that there is still "something in it". In these pages, you will see the results of an attempt to root out what that "something" is, and subject it to statistical tests (pp.13-14).

He sees the divide as being between the humanists, who believe astrology's value is primarily therapeutic and diagnostic, and the mechanists, who expect real and verifiable effects:

I come down firmly on the side of the mechanists, and the purpose of this book is to try to separate the wheat from the chaff and reveal what I believe lies at the heart of astrology – a system of types based on planetary influence

which has appeared independently several times in history. ... In view of the failure of astrology to perform under scientific scrutiny the question that serious thinking people ask themselves about astrology is, "If most of its claims don't stand up to scientific tests, how is it able to flourish so successfully?" As in most things, I believe it is a question of a kernel of truth surrounded by a thick crust of fabrication. This kernel is the system of types (pp.16-17).

He notes that the esoteric speculations of Gurdjieff, Ouspensky and Collin led to the idea of types, but empirical support had to await their linking with the endocrine glands by Dr Louis Berman (1893-1946) in his 1921 book *The Glands Regulating Personality: A study of the glands of internal secretion in relation to the types of human nature*, and their famous linking with the planets by Michel Gauquelin (1928-1991). It is here that Cartledge's detailed descriptions face problems because his reference sources are out of date. Looking at each in turn:

Berman saw human beings as various types according to their endocrinology. Thus people could be thyroid gland-centred, pituitary gland-centred, adrenal gland-centred and so on. Berman claimed that injections of glandular extracts and synthetic hormones would strengthen vitality, energy, intelligence, and social attributes, allowing humanity to become an architect of its own fate. But he offered no experimental support for his claims, a fault not rectified in his second edition published in 1928, which contained no bibliography. Neither edition is cited in a 1933 review (AT Cameron, *Recent Advances in Endocrinology*) that has 831 references. Later authors referred to Berman's "grandiose visions" and significant lack of "sound balance". Indeed, hormone therapy proved to have unexpected and typically undesirable side effects, sometimes more serious than the symptoms it was supposed to alleviate. Today every one of Berman's claims can be discounted. Nor does his name appear in histories of psychology (most of this is from C Nordlund, *British Journal for the History of Science* 40, 83-104, 2007, with 96 references).

Similarly it is no longer plausible to claim that "Gauquelin has established quite convincingly that the planets exert an influence on character" (p.19), that the significance of planets "has been firmly established" (p.34), and that there is "ample support" for planetary archetypes (p.186). The planet-profession links observed by Gauquelin are certainly real, but have not been demonstrated when social artifacts are known to be absent, and the links with character (on which Cartledge's thesis depends) have not survived controlled tests, see 6.6.9. In any case none of the effect sizes observed by Gauquelin are large enough to form a useful typology.

Finally Cartledge does not explain why empirical tests have generally failed to show that human personality divides naturally into seven groups (which it should do if his typology is valid), for which he says the associated planets and endocrine glands are (pp.134-154):

Endocrine gland	Appearance and temperament according to Cartledge
SA Anterior Pituitary	Tall, high forehead, reserved, careful, self-controlled.
MA Adrenal	Small, muscular, robust, aggressive, fiercely independent.
JU Posterior Pituitary	Large frame, flamboyant, organising, sensual, generous.
MO Pancreas	Small, weak musculature, pale, loyal, dislikes change.
VE Parathyroid	Graceful, charming, rounded, caring, sensitive, nurturing.
ME Thyroid	Short, quick, inventive, pushy, insecure, self-promoting.
SO Thymus	Small, thin, fragile, nervous, over-sensitive, naive.

Nor does he explain why the hypothalamus, pineal and gonads are excluded. He says that each planet can act either alone or in combination with the next planet in rotating sequence, except that SO can act in combination with any of the others. Thus SA or ME can act alone or as SA+MA or ME+SA, but not in combination with any others except SO. A planet is deemed active if it makes a 0, 60, 90, 120, or 180 aspect with the Ascendant or MC using an orb of 8° (6° for the 60 aspect). An aspect to both the Ascendant and MC is counted as one aspect.

To test this idea he takes a sample of well-known people and their photographs, mostly from internet sources, and counts the number of planets active in the 353 cases where he was able to determine the planetary type from the subject's appearance and behaviour. He then counted the number of cases where the active planet agreed with the planetary type. To determine the agreement expected by chance he counted the number of active planets in 289 cases where he was unable to determine the planetary type (which suggested that the probability of a chart having an active planet was about 16%).

But this differs too much from even the simplistic probability of an aspect to the Ascendant (sum of orbs°/360° = 120°/360° = 0.33) to be credible. Computer calculation of the above

aspects between MO-SA and Asc and MC at half-hour intervals during each day for each year 1900-1980, a total of just over 1.4 million charts, and counting an aspect to both Ascendant and MC as one aspect, gave an expectancy between 0.53 and 0.68 depending on geographic latitude (40° to 50° N), and on orb as specified plus up to 2° (because it is easy to accept an aspect that is so appropriate that being slightly beyond orb is ignored, yet even slight differences can be crucial). The distribution of birth hours made almost no difference.

Fortunately Cartledge gives detailed counts of the aspects in his 353 cases. Comparing their distribution with the computer distribution to give the best match for latitude and orb suggests that the probability of his test cases having an active planet is just over 0.63, which allows his counts of matching cases to be tested. But they are not even marginally significant (p.177):

Cases with planets matching type

	Obs	N		Obs	N	
SA	18	24	SA+MA	12	38	)
MA	33	61	MA+JU	7	21	)
JU	16	25	JU+MO	19	26	)
MO	10	15	MO+VE	9	19	)
VE	18	24	VE+ME	7	26	)
ME	26	36	ME+SA	12	38	)

Total	121	185		66	168	
Exp	117*	$p = 0.28$		67**	$p = 0.60$	(binomial) vs expectancy in each case
*Expectancy = $N \times 0.63$						
**Expectancy = $N \times (0.63^2 = 0.40)$						

In a nicely controlled replication, two NCGR members sent him photographs without charts of 44 subjects, for 42 of which he was able to determine the planetary type. The NCGR members then looked at the charts and advised that correct matches had been obtained in 29 cases ($p = 0.26$ if expectancy = 0.63), consistent with the previous result.

Earlier (pp.75-109) Cartledge explored celestial harmonies, harmonics, octaves, music of the spheres, geomagnetic resonance, and planetary frequencies, but achieved only speculations of limited practical value. To his credit, Cartledge concludes that his empirical results are:

an insufficient foundation on which to build a new science. ... there are simply too many unknowns in my methods to take the results seriously. For instance, there is no way of knowing whether the birth times are accurate since their sources are not officially-recorded birth times but anecdotal recollections. There is also no way of knowing how much unconscious bias went into the selection of positive results. ... The first thing we need to do is get as realistic a picture as possible of the actual planetary neighbourhood in which the influences ... are meant to be operating (pp.181-182).

So place a football on the ground to represent the Sun. Then take 10 paces to meet a pinhead (ME), another 9 paces to meet a matchhead (VE), the same after another 7 paces (Earth) and another 14 paces (MA), then chestnuts after another 95 paces (JU) and after another 112 paces (SA). You are now 250 metres from the football, with another 600 metres to go before you meet another pinhead (PL), plus two peanuts along the way (UR, NE). Most astrologers are shocked to discover the actual sizes and distances involved. If the solar system were scaled down to the size of a birth chart, it would take twenty Jupiters to fit the width of a human hair. In effect those chunky glyphs that astrologers play with could not be more misleading.

Cartledge ends by listing objections to his thesis:

Planets seem too distant for them to have an effect on people.

Planetary periods are roughly 32 octaves below human frequencies.

Why only our tiny glands, and why only certain aspects? (pp.184-185).

And the problems he had in getting started:

I had great difficulty recruiting any help to carry out the tests outlined earlier, despite canvassing most of the professional astrology groups – even those engaged in research – both online and through other channels (p.186).

Nevertheless he hopes research like his can lead the way:

With the help of many interested parties, we can design and refine a foolproof test protocol. If after all this critical

review and scrutiny, some positive statistical result emerges, it will be all the more healthier and likelier to survive its infancy. The experiment may well turn out to yield no fruit, but won't it be interesting if it does? (p.188).

Comment As Tad Mann says at the start, it was a brave undertaking. But it was also a sad reminder of how relying on dated homework can lead to wasted effort.

7.4.2009.2 Planetary transits at 6,466,063 deaths

Slawomir Stachniewicz, unpublished paper January 2009 and personal communication 2017. Dr Stachniewicz is an astrophysicist in Kraków, southern Poland. In this paper he explores the connection between transits and death with technology and procedures routine in astrophysics but not in astrology. His negative results help to explain why so few astronomers and astrophysicists are motivated to test astrology, a field from which he has now retired.

The US Social Security Death Benefit Records 1937-1993 (CD by Broderbund Software) contains 52 million records including name, date of birth, date of death, state of birth, and state of last known residence. For most records only the month of death was available, but I was able to extract almost 8 million records with full *dates* of birth and death, albeit without *place* and *hour* of birth. To simplify analysis I used the extracted deaths between mid 1988 and mid 1993, a total of 6,466,063 cases spread over five years.

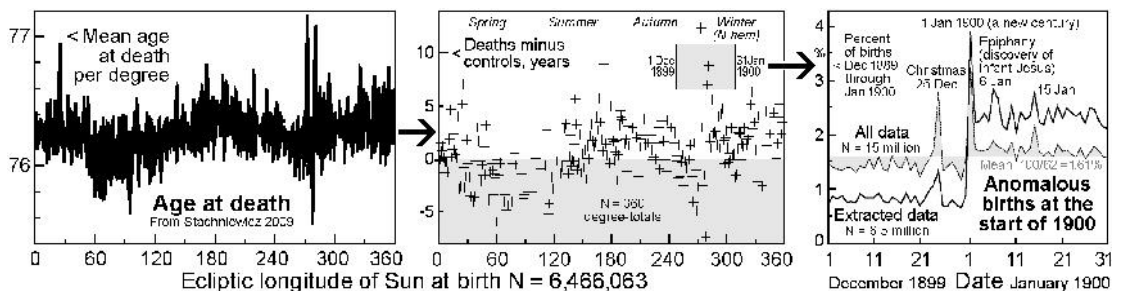
Because no birth or death times were available for each extracted record, I used a random birth and death time that included the appropriate seasonal variations. This was preferable to taking a fixed hour such as noon since this could bias the results for the Moon. For controls I generated the same number of random births using the same age distribution at death, same seasonal death rate, and same seasonal birth rate as in the actual records.

My first step was a simple one. For each death and control I calculated and saved the ecliptic longitudes of ten planets and the Moon's node for each date of birth, each date of death, and each date of the last birthday before death, a total of nearly 200 million longitudes. Planetary positions were calculated to a precision of 1 arcminute, or 20 arcseconds for the Moon.

My second step was more complicated. The greatest source of error lay in replacing unknown hours of birth and death with random ones. Over one day the change in longitude is up to 15° for the Moon, 2.2° for Mercury, 1.26° for Venus, 1.02° for the Sun, and less than 1° for the other planets. So I counted angular separations for all possible values up to 360° in 1° steps. The mean count per degree was $6,466,063 / 360 = 17961$, high enough to allow analysis of counts per degree instead of the usual method of counts per aspect.

I made these counts for all possible transits and all possible birth and death chart-factors, and plotted the results as graphs. This gave a total of nearly 1000 plots ready for inspection.

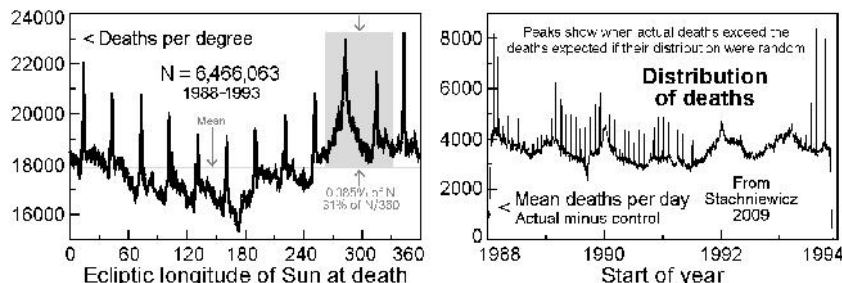
My first inspection looked at how the mean age at death varied with the Sun's position at birth. Some books claim that certain degree areas (often connected with certain fixed stars) incline to an early death. If this was true my results should confirm it. But they do not:



Left: If there were any degree-area influences relevant to length of life, either by extending it or shortening it, they would show up as large upward or downward spikes well outside the range of the severely truncated vertical scale. **Middle:** But the only spikes are small ones and are due to differences between actual deaths and control deaths. The apparent waveform reflects the varying time spent in each sign between winter and summer. **Right:** These differences are explained by misreported birth data. Thus some people misreport days of special significance (Christmas, Epiphany, 1 January), while the records office imputes unknown birth dates to the 1st or 15th spread

evenly throughout the year. Interestingly, for every two days where an even-numbered day coincides with a trough, three coincide with a peak, which if confirmed for other periods may reflect the very old superstition of preferring even numbers to odd numbers. **Conclusion:** Nothing here needs astrology to explain it.

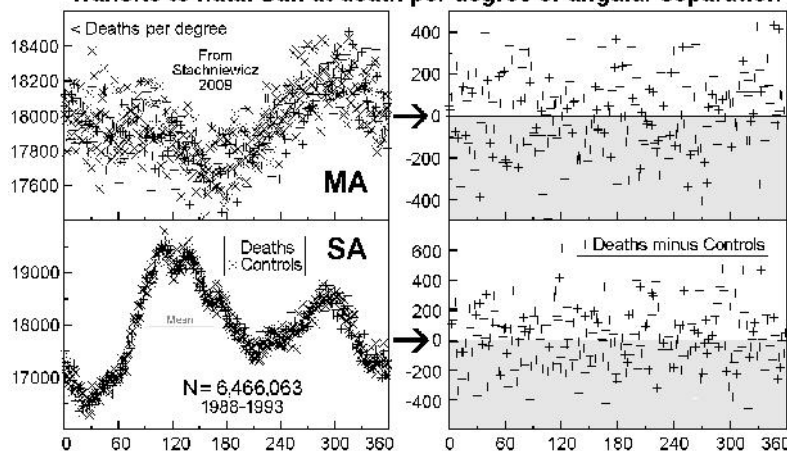
Variations in the Sun position at death showed further evidence of these effects:



Left: Deaths were more numerous at the start of each month, **Right:** With some variation depending on year. The effect is well known and is probably due to changes in the records office procedure for imputing unknown death dates to the 1st or 15th of each month.

On the left, the spikes are actually very small but are here magnified by truncation of the vertical axis. Because all spikes are determined by calendar date rather than by astrology, their effect on my analysis of transits should be minimal. Some tests of transits are next:

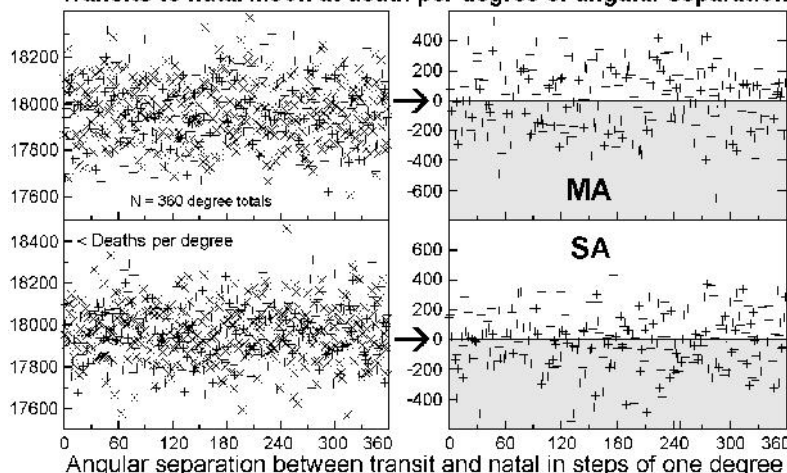
Transits to natal Sun at death per degree of angular separation



According to astrological tradition, transits of Mars and Saturn to the Sun and Moon at death should show strong effects because the Sun and Moon have the greatest involvement in health matters, and Mars and Saturn are both malefics (ie adverse). So the deaths should show clear peaks above the controls at adverse angular separations, and clear troughs below at beneficial separations.

Right: But in each case the differences between death and control counts are generally spread evenly on either side of zero. They are uniformly small compared with the original huge totals. There is no evidence of differences at the separations predicted by astrology to be relevant such as 90°, 180° and 270°.

Transits to natal Moon at death per degree of angular separation

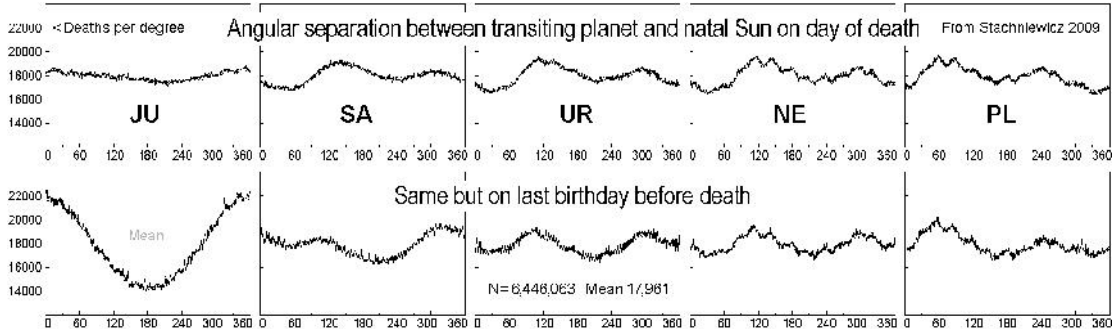


Left: Transits to the Sun show the expected variations due to differences in orbital geometry. Transits to the Moon show the expected lack of variations, although any variations on a scale of less than 15° will not show up due to uncertainty in the Moon longitudes.

These plots suggest that any links with death by transits predicted by astrology to be strong are likely to be negligible.

To check the above findings I looked at transits by the planets beyond Saturn to the natal Sun. Here there is general agreement among astrologers that their effect should be adverse rather than beneficial, whereas their transits to other planets such as Mercury and Venus are said to be inconsistent depending on the other planet, their house position, and what they happen to

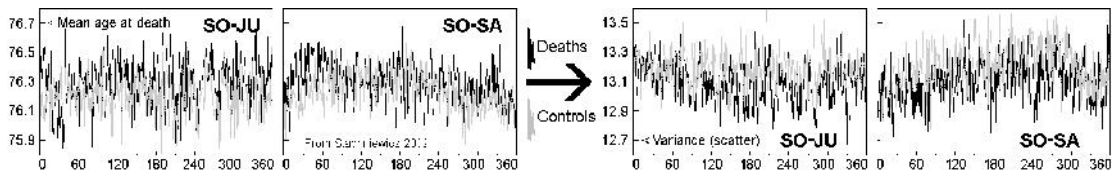
rule. So in the plots below I compared UR NE PL transits with transits by the benefic Jupiter at death (upper plots), then for the same transits on the last birthday before death (lower plots). I also included SA to allow comparison with the SA plots on the previous page. The time difference between the upper and lower plots below is therefore up to one year but no more:



As in the previous plots, the wave-like variations are those expected from differences in orbital geometry. Thus the lower Jupiter plot is as predicted to occur during the one year maximum difference between death and the last birthday before death (a constraint that does not apply to the upper Jupiter plot), during which time Sun-Jupiter angular separations spend more time near conjunctions than near oppositions. In the upper plots the subjects are dead, but in the lower plots they are alive – surely the biggest possible difference for any human life. If these transits are related to death they should show up as clear differences between plots, for example by spikes at those places where the angular separation is adverse, and which arguably should be opposite in direction to matching spikes from the traditionally benefic Jupiter. Each plot shows both deaths and controls (as in the upper Saturn plot in the previous figure). But no consistent differences between deaths and controls are visible to justify using a larger scale, even at angular separations predicted by astrology to be effective such as 90° , 180° and 270° .

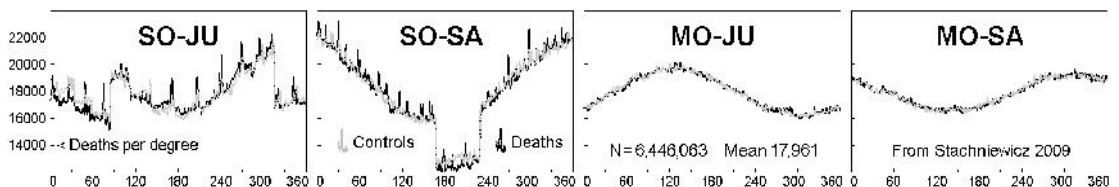
Isolated differences between the death degree-totals and controls were sometimes discernible, but they were very small and were probably due to evolving variations in the birth rate. I tried correcting the angular separations for celestial latitude but it made no difference.

Nor could I find any hint that the length of life is reflected in the birth chart itself. For example there was no difference in aspects to natal Sun between natal Jupiter and natal Saturn :



Left: Mean age at death per degree of angular separation in the natal chart between the Sun and Jupiter (traditionally the best good guy) and the Sun and Saturn (traditionally the worst bad guy). There is no clear difference between them, or between say squares and trines, or between deaths and controls, which is not what astrology would predict. **Right:** A better measure might be the scatter in individual ages at each degree, where we might expect significant aspect effects to be less scattered than purely random effects. I measured scatter as the variance, ie [standard deviation of each c18000 deaths per degree]². There is a consistent tendency for controls to show slightly more scatter than deaths, which is probably due to errors in the derived age distribution and derived seasonal rates for births and deaths, but the difference is very small compared with the mean. Overall this scatter test is just as negative.

Finally I wanted to see whether aspects on the day of death increase or decrease the mortality rate, even though the five-year time span of deaths is too short to cover every possible aspect:



Angular separation between planets on the day of death in steps of one degree. The wave-like variations are due to retrogradation and are the same for both deaths and controls. **Left:** The sharp peaks for Sun-Jupiter and Sun-Saturn

coincide with differences between actual deaths and control deaths due to misreporting and imputing (see the first plot in this summary). **Right:** There are no sharp peaks for Moon-Jupiter and Moon-Saturn because their high frequency has smoothed out the effects of misreporting and imputing, but again there are no clear differences between deaths and controls. There is nothing in these four plots that needs astrology to explain it.

The above 31 plots are typical of the nearly 1000 plots generated for my sample of over six million deaths. The plots not shown are mostly for factors not traditionally related to death such as Mercury or Venus transiting natal planets. But regardless of factor, none showed significant support for the idea that planetary natal positions or transits are related to death or length of life. Unfortunately I could not test for effects involving the Ascendant, MC or house positions, but given the negligible results for other factors, the prospects do not seem good. And this despite the huge sensitivity created by my sample size of over six million births.

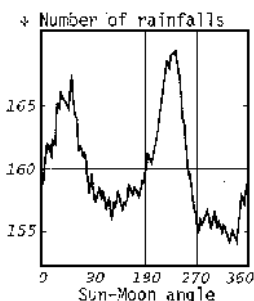
Comment But how negligible is negligible? Look again at those last plots. Suppose that a certain angular separation is effective with an orb of 2° , and that it gives an observed count of 1000 above an expected count of 18,000 for each of those four degrees. (Such a difference is of course non-existent in the plots, but we are trying to be optimistic.) Over four degrees such an obs-exp difference will stand out like a sore thumb, but the effect size r due to the sore thumb using $r = \sqrt{(\text{chi}^2/N)}$ is about 0.003 or absurdly tiny by any standard. Yet the p value is amazing (about 10^{-13}), showing yet again how p values are no guide to utility.

If we now use this amazingly significant r to predict death for our many paying clients, we would on average perform better than tossing a coin only once in every $2/r = 680$ cases, see 8.2.4. So 679 out of 680 clients would be paying for astrology when they could toss a coin for free. Even though the effect is invented and implausibly optimistic. So why should anyone believe that transits work for events generally?

7.4.2010.1 Does Saturn influence the weather?

Bruce Scofield, *A History and Test of Planetary Weather Forecasting*, PhD thesis, Department of Geosciences, University of Massachusetts. The author has been a practising astrologer and conference speaker since 1975 and is the author of articles and books including *Timing of Events: Electional Astrology* and *Native American Astrology from Ancient Mexico*. Much of his thesis consists of a well-documented account of the history of astrology and astrometeorology, the latter being a popular feature of 17th century astrology, see 4.3. What follows is a summary of relevant parts.

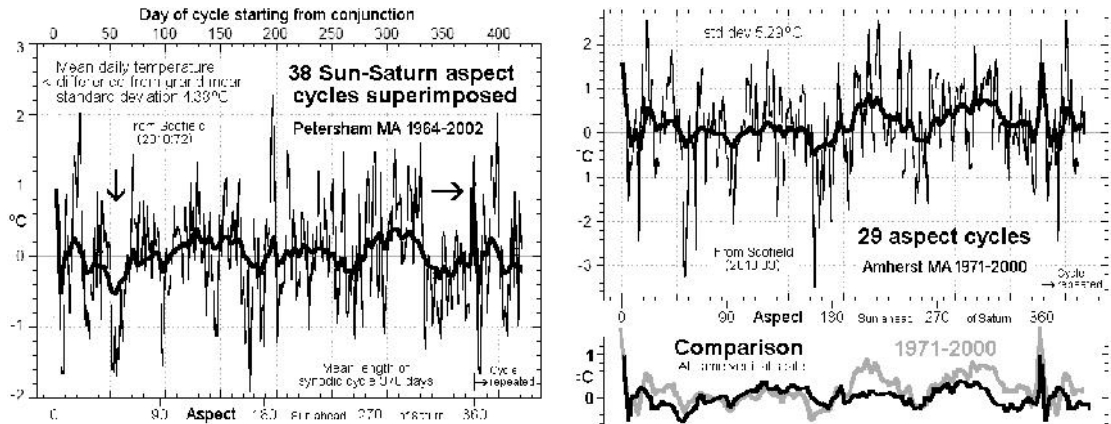
In 1686 British astrologer John Goad (1616-1687) published *Astro-Meteorologica*, a work of over 500 pages, in which he compares weather observations with SO-MO aspects over seven years, and then with others up to JU-SA aspects over twenty years. He thought planetary effects were due to heat from the Sun and planets acting on moisture from the Earth according to the prevailing planetary aspects. His weather observations were mainly his own made in London, supplemented by Kepler's in Germany 1621-1629, and were entirely subjective such as *hot day* or *frosty day* or *moderate rain* or *wind change* (relevant measuring instruments were either not yet invented or not in common use). He treated each planetary pair separately, and progressively narrowed the orb in the hope of finding a pure effect. But usually several planetary pairs were in aspect at the same time, so he had to admit defeat, especially as some effects seemed to occur well beyond orb. He was confident he was not pursuing a lost cause. [But all possible weather conditions exist somewhere on Earth all the time, so the idea that planetary aspects could be usefully specific is unlikely to be fruitful.]



Nevertheless Goad found that the wettest days tended to occur about five days after a New Moon or Full Moon, which was very similar to modern observations of the heaviest 24-hour US rainfalls:

The heaviest 24-hour rainfalls at 1544 US weather stations during 1900-1949 (total rainfalls 16,056) show a clear wave vs Sun-Moon angle (Bradley, Woodbury and Brier, *Science* 137, 748-749, 1962). Rainfall in New Zealand shows a similar effect that is roughly in phase with the US data (Adderley and Bowen, *ibid* 749-750). So the effect is independent of season and air circulation patterns, and consistent with tidal effects. Graph is from *Recent Advances* 1977:58. Truncation has greatly exaggerated the effect.

Scofield notes that various mechanisms have been proposed for lunar tidal effects, including seeding by meteoric dust, distortion of Earth's magnetic tail by thunderstorms (more intense at Full Moon), and atmospheric tides. Some early astrologers claimed that Sun-Saturn aspects caused a cooling effect. Was this merely symbolic or could modern methods detect it despite the tidal effect of Saturn averaging about 2000 times weaker than that of the Moon? Tests seemed to suggest that they might be detecting it:



Left: The mean daily temperature difference from the grand mean for 38 Sun-Saturn aspect cycles for 39 years of daily temperatures at the Petersham MA weather station 1964-2002. They show a huge scatter even though each point on the thin line is the mean of 38 daily records. The author concludes that the aspects generally "do not show a high correspondence with cold or falling temperatures" (p.78). However, when the data were smoothed (thick line, method not stated) the lowest dip (vertical arrow) coincided with Kepler's septile. **Right:** The corresponding plot for 29 Sun-Saturn aspect cycles for 30 years of daily temperatures at the Amherst MA weather station 1971-2000. The two weather stations are about 40 km apart at much the same elevation (330 m), so it is not surprising that the two plots show many similarities including the septile dip, although this time it is not the lowest dip.

The author also analysed daily temperature data during 1971-2000 for other areas including ten stations in NE USA (sd of mean 3.87), central England (sd 2.63), Prague (sd 3.69), and central Argentina (sd 3.19), but only for 21-day periods centred on the date of exact SO-SA aspects. No plots for the full aspect cycle are reported other than the two shown above.

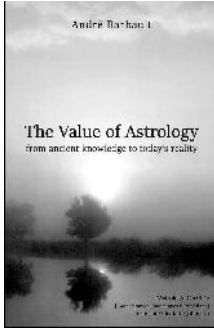
Various controls were generated by substituting random dates for the dates of exact aspects and filling the gaps with sequential data from the dataset. In effect this juggled three-week sequences of data. Visually the control results "do not appear to be significantly different" from the experimental results (p.75). One control set analysed oppositions of Sun-Jupiter instead of Sun-Saturn and showed a warming trend. Eventually the author concluded that the effect of Sun-Saturn aspects on temperature "appears to be supported" (p.104).

Comment The notably high peak at the conjunction (horizontal arrow) escaped comment, possibly because the indicated warming was contrary to tradition. In general the huge noise levels, lack of correlation analyses between replications, and lack of plots over the full aspect cycle make the author's conclusion less than convincing. Also, because the SO-SA aspect cycle is only $378 - 365 = 13$ days longer than the calendar year, its analysis will be made even less certain by seasonal effects; for example part of the cycle may occur in summer rather than winter, or in a wet season rather than a dry season.

However, if the predicted cooling effect is genuine and is genuinely tidal, then tests of Sun-Jupiter aspects should confirm it because Jupiter's tide raising influence on Earth is 11x that of Saturn. Unfortunately the author's limited test of Sun-Jupiter oppositions has left this decisive area mostly unexamined. Equally unfortunate is his uncritical acceptance (p.52) of John Nelson's findings as support for astrometeorological ideas despite their disconfirmation nearly thirty years earlier, see 7.4.1978.2.

7.4.2014.1 The value of astrology is ... ?

André Barbault, *The Value of Astrology from ancient knowledge to today's reality* 2014. An English translation of his 2006 book *L'astrologie certifiée: connaissances, statistiques et prévisions* [Verified astrology: knowledge, statistics and predictions] in which he brings together the fruits of his nearly 80 years in astrology and the prediction of events.



Barbault points out that life in ancient times was dominated by astrological *knowledge* (his word for *beliefs*), a sort of celestial religion that was later joined by the doctrine of correspondences, only to suffer (he says) dishonest attacks without any supporting evidence. He quotes the early French researcher Paul Choignard (whose work is described in 4.9) as someone who saw the past in its proper perspective:

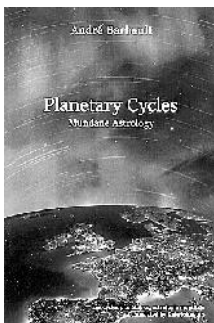
If the study of ancient astrology, into the truth of it, boils down to very little, at least we should be in a position to prove it. In any case it would still be very useful to dampen the misplaced ardour of both the neologists [true believers] and the deniers (Choignard, *Langage Astral* 1921).

Barbault supports his own view that "Astrology is knocking on the door again" (p.50) by looking at (1) *statistiques* and (2) *prévisions* [predictions]. For the first he focuses on the Lasson / Gauquelin planetary effect results, and on Castille's marriage results, dismissing everything else as "small-scale investigations which were insufficiently focused and too scattered" (p.87). Only positive findings are cited, and only in terms of *p* values. For (2) he devotes more than forty pages to "Astrological Forecasting: the Facts", listing 50 years of Sun-Jupiter conjunctions and 200 years of Saturn-Neptune aspects, each with matching events, but without controls to show the matches are genuine and not the result of *cherchez la correspondance*.

Comment By suppressing the actual situation (tiny effect sizes) in (1), and by adopting procedures that are uncontrolled in (2), his view remains internally secure if externally inconsequential. Despite the book's provocative title Barbault does not actually describe the value of astrology, probably because the original French title contains no reference to "value", which therefore appears to have been created by the British publisher (the Astrological Association). Nor does "value" appear in the index – except there is no index.

7.4.2016.1 Do planetary cycles match world events?

André Barbault, *Planetary Cycles Mundane Astrology* 2016, an English translation of his original 2014 work *Les cycles planétaires, astrologie mondiale* which brings together the results of more than 70 years of his research relating outer planet cycles to historic events. It is published by the Astrological Association. Barbault (1921-) is recognised as the leading expert in mundane (ie world event) astrology. In 1967 he began publishing the quarterly *L'Astrologue* and was responsible for programming Astroflash, the world's first computerised horoscope service (not just calculating charts).



Almost none of his work is available in English, so this major translation is a landmark event and a scoop for the AA. Indeed, it is even more than this, for its editor and AA chairman Roy Gillett says it presents:

both a challenge to astrology's critics as well as a benchmark of the standard to which mundane astrology should be practised (p.2 of editor's preface).

Barbault's approach is simple. He takes the historical records of economic and political changes and compares them with aspects between the outer planets to show how they link with a total of typically ten aspects (0, 45, 60, 90, 120, 180, 215, 240, 300, 315), ie usually excluding 30, 150.

A chapter is devoted to each planetary pair with a list of events that correspond with each aspect. To show how it works, here are (abridged) examples for Jupiter-Saturn from p.33:

Sextile (Nov 1943 - Sep 1944). Continuing Nazi defeats. Greater part of Europe is liberated.

Square (Dec 1945 - Nov 1946). Civil war in Greece, war starts in Indo China, rift between E and W Europe.

Trine (Jan - Dec 1948). Treaty of Brussels, Congress of Europe, creation of Council of Europe.

Opposition (Apr 1951 - Feb 1952). Return of Germany to Europe, Treaty of Paris, start of European Union.

Orbs (the term does not appear in the index) are not systematically described; and about half the time are given in terms of duration as above, never in degrees, of which the middle half of the range has the following typical duration for pairs where the fastest planet is:

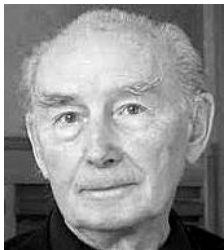
Jupiter 9-10 months. Saturn 11-12 months. Uranus 3-4 years. Neptune 50 years.

Comment Similarly the periods of each outer planet pair are not systematically described, nor are the average number of aspects made in a given time, which are as shown below:

A*	Rounded period in years					No of aspects in 20** years					
	B =	JU	SA	UR	NE	PL	JU	SA	UR	NE	PL
Jupiter		12	17	21	22	23	..	12	10	9	9
Saturn		..	29	44	50	53	..	..	5	4	4
Uranus		..	..	84	111	125	..	..	..	1.8	1.6
Neptune		..	..	..	165	198	..	..	..	..	1.0
Pluto		..	..	..	..	248	Total 56 (= 2.8 a year)				

*If A=B, entry is the period of the planet. **Arbitrary to obtain average/year.

In other words every year there are around three outer planet aspects lasting a total of several years that are available for linking to an often bewildering diversity of events, so it would seem difficult not to register a match. Especially as the events can be anything that occurs in human society such as a war, or in nature such as a tsunami. Barbault (pictured) comments:



In this case [the 2011 Japanese Fukushima disaster] geophysics took the place of public affairs, and we are reminded that our configurations can't distinguish between a peculiarity of society or nature, and don't give us the means of excluding one or the other (p.131)

But one might ask why astrology is suddenly unable to distinguish such things given its strong tradition of claims to the contrary, see 4.1.3. In effect Barbault does what Tarnas does in *Cosmos and Psyche*, which raises the same concerns about the claimed links being simply due to chance, see 7.2.2006.2. Essentially both choose the aspect then scour world events for anything that fits. But without controls to eliminate subjectivity or chance, the results (as in any chart interpretation) are impossible to evaluate. So, contrary to what Roy Gillett suggests, no critic is going to see this kind of work as a challenge.

Indeed the challenge is with astrologers rather than critics to show that the claimed links cannot be explained by chance. As shown above, and in 7.2.2006.2, the odds in favour of success do not seem good. Sometimes Barbault quotes his predictions to show that they came true, but never when they did not, see 8.8.3. When discussing Gouchon's *cyclical index* (again see 8.8.3) he notes that it plunges in 2020-2021, indicating "a time of widespread discord" with Europe "at the epicentre" (p.151), and that another plunge in 2080-2081 is:

a kind of intensification of 1914 and 1942. This is undoubtedly a critical juncture with an extreme planetary threat. Useless to try and probe the mystery of this disturbing configuration that is so far off when we don't know if the threat is human or natural or both (p.152).

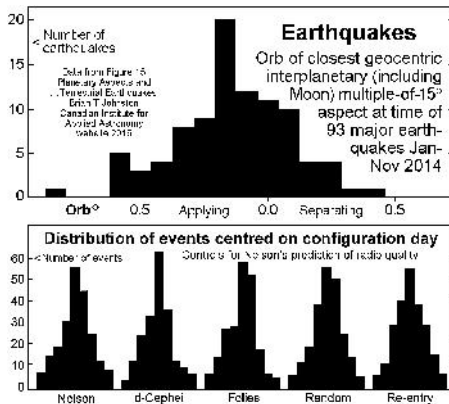
Comment 2 The AA's website describes Barbault's book in the most glowing terms, implying that here at last is the evidence needed to support mundane claims. But the evidence actually needed is not provided by Barbault, namely: (1) An independent list of world events such as those in Bernard Grun's 1991 book *The Timetables of History: A horizontal linkage of people and events 4500 BC to present*, which lists notable events for each year in seven categories from politics to daily life, so at a glance the reader can see what is happening and when. (2) An independent list of relevant aspects over the same time period. (3) Lists of random dates to act as controls. (4) A proper statistical comparison. As a project it would take almost no time at all compared with the seventy years of Barbault's research.

7.4.2016.2 Solid proof that astrology is due to physical forces?

In September 2016 Canadian researcher Brian T Johnston's website www.astrologyservicescanada.com described him as "one of the most renowned astrological researchers in the world". His work spans 20 years, which is not unusual among researchers, but for some reason he rarely cites the work of others, which is fatal. This summary is of his major works taken from his research website thecanadianinstituteforappliedastronomy.yolasite.com.

Mainline scientists have been taught that astrology has been disproved. Nothing could be farther from the truth. I have been involved with astronomy for almost fifty years and I can assure you that astronomers have not disproved astrology. My work shows that the basis of astrology is physical, and that it is caused by electrical, magnetic and gravitational forces.

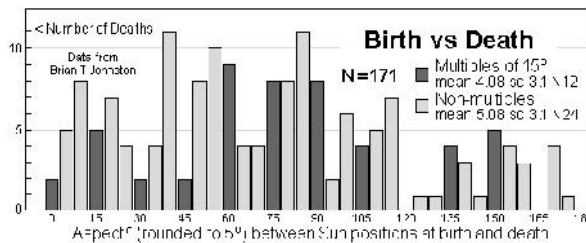
As solid proof, I found correlations between geocentric interplanetary multiple-of- 15° aspects and the frequency and timing of earthquakes. Not all aspects are able to be correlated with earthquakes as there are tens of aspects for every earthquake greater than 6 on the Richter scale, but when sufficient pressure has built up in the fault lines then the earthquake is more likely to happen at the time of an aspect. For example the 93 greatest earthquakes during January-November 2014 show a piling up around the time of the closest aspect (top diagram)



thus proving one of the basic laws of astrology – the harmonic interactions of planets – as confirmed by the work of radio engineer John Nelson.

Comment 1 But when the aspects occur more frequently than the events, as here and in Nelson's work, the former will tend to occur close to the latter even if there is no actual correlation, thus piling up in the middle, as shown (bottom) by the Nelson controls repeated from 7.4.1978.2. The apparent link with earthquakes is merely an artifact of his approach. An apparent unfamiliarity with existing work (see index and 8.8.7 earthquakes) has proved to be fatal.

Johnston goes on to claim that his results are confirmed by an emphasis on the same multiple-of- 15° aspects in the distribution of angles (below) between the Sun's position at birth and the Sun's position at death for 171 people.



The Sun's position at death for 171 people.

Comment 2 If such an effect existed then on average the darker columns should be taller than the others. But the difference in means (4.08 for multiples and 5.08 for non-multiples) is close to chance ($p=0.37$) and in wrong direction.

An earlier study of 1453 earthquakes found 61% had occurred during (unspecified) applying aspects, and 57% during a later study of 1975 earthquakes. But Vail found the opposite for all earthquakes of magnitude ≥ 7.5 during 1930-1980, see 7.4.1985.3. Unfortunately Johnston's text is too littered with misspellings, incorrect grammar, wrongly numbered figures and references, and jumbled-up studies, for any of it to be taken seriously.

7.4.2017.1 Did JP Morgan get rich through astrology?

Editor John Stepek and market newsletter reviewer Mark Hulbert. *Money Week* 25 August 2017:10.

"Millionaires don't use astrologers. Billionaires do" is widely attributed to JP Morgan, who is said to have regularly consulted US astrologer Evangeline Adams. Today several market newsletters including *Merriman Market Analyst*, *Crawford Perspectives*, and *Rosecast Market Timing* claim they can forecast stock movement by astrological cycles, no doubt because any approach based on astrology is likely to generate occasional hits because markets are also cyclical, ie both sidea have peaks that can coincide by chance. [And no doubt because knowledge of astrology can affect mood, which then affects investment behaviour as explained in 7.4.2006.2.] But Morgan didn't get rich through astrology, given that one of Adams's best-known forecasts a few weeks before the 1929 crash was "stocks might climb to heaven", which compares with respected economist Irving Fisher's forecast that "stock prices have reached what looks like a permanently high plateau". Here astrology makes even economic forecasting look respectable.