Sun sign synastry in marriage
by
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Do the Sun signs of married couples show anything special? Not according to Carl Jung, whose classic marriage synastry experiment published back in 1952 using just 180 marriage pairs, claimed to discern synastry links that were primarily lunar rather than solar.[1]

But, that claim has been made by Gunther Sachs in 1997[2], and then again in 1999 by Didier Castille.[3] Both claimed to have found an excess of the same Sun-signs. Sachs used a sample of three hundred thousand Swiss couples while Castille used six million French couples! More recently the *Skeptical Enquirer* published in 2008 an alleged null-result by UK professor of population studies David Voas using ten million UK couples.[4] The studies were all based upon sun-signs, however Castille did subsequently refine his study by using decans, i.e ten-degree intervals of zodiac longitude. They all used untimed dates of birth.

The present author has provided a group of twenty thousand French couples having dated birthtimes[5] to be posted on the CURA website, extracted from the Gauquelin heredity data, and it is hoped that this may stimulate a new interest in this controversial topic.

A Sun sign proof?
Gunther Sachs *The Astrology File* of 1998, subtitled 'Scientific proof of the link between star signs and human behaviour,' looked at marriage synastry using data from the Swiss Federal Office of Statistics. Sachs obtained from it a total of 358,763 dates of birth of married couples who were married between 1987 and 1994. The professional statisticians H W Schwenk and Dr Rita Kuenstler checked through his data, and defended his integrity in the ensuing debates.

The data was converted to sun-signs and arranged in a 12x12 matrix, for each sign of husband and wife, then totals per box were compared with expected frequencies based on demographic yearly birth-patterns, and a chi-square test made per box. The diagonal line across his matrix stood out as having most of the high significance scores, these being the same-sign partnerships.

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[1] Jung, *An Astrological Experiment* in 'Synchronicity,' 1952. For comments by the author, see www.astrozero.co.uk/astroscience/documents/Nick_Kollerstrom_Investigating_Aspects.pdf 'Investigating Aspects' in *Astrological research Methods,* Ed. Pottenger, Mark, 1995, pp. 287-302.

[2] Gunther Sachs *Die Akte Astrologie,* Goldman, Verlag 1997; *The Astrology File, Scientific Proof of the Link Between the Star Signs and Human Behaviour,*1998.

[3] Didier Castille, *Marriages au Soleil, RAMS* (Research in *Astrology,* Methods of Science) journal, **Jan 1999.**

[4] David Voas, 'Ten Million Marriages: An Astrological Detective-Story', *The Skeptical Enquirer* 32, March 2008.

[5] http://cura.free.fr/gauq/17archg.html#MCD 'Married-Couple Data.' For discussion, see http://cura.free.fr/gauq/1506_GAUQUELIN_MARRIED.pdf

He also noted significant excesses[6] in same-element pairings that were in a trine linkage, eg Cancer and Pisces being together, an *elementary* result. Twelve of his thirteen 'highly-significant' boxes were thus of the same sign. Of the 12 negatively-significant boxes, six were in a square relationship and *not one* was same-sign. Sachs did not give any graph or chart to summarise his result: nobody did that until 2014, when Kyosti Tarvainen - arguing against the incorrect comment made about Sachs in *Astrology Under Scrutiny* (2013): 'Overall there was no hint that sun signs were valid',[7] - produced a bar-chart, here reproduced, and commented:

> "We see that Sachs data supports astrology...We see that there is a positive excess when the aspect between the spouse's' Sun signs is 0, 60 or 120 degrees. These aspects are generally regarded as good in popular Sun sign synastry books.[8] "

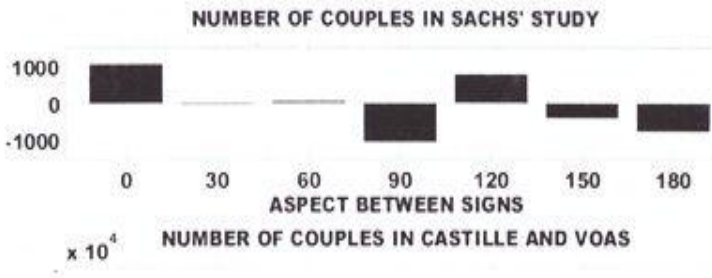He could have added, ditto for the deficits at 90° and 180°.

Figure 1: Tarvainen's 2014 summary of Sachs' marriage-synastry results

 As Geoffrey Dean has attempted to dismiss such a breakdown of Sachs' finding by Sun-Sun synastry aspect,[9] it is worth scrutinising the figures that emerge from Gunther Sachs study. Selecting just four aspects and adding up their zodiac-sign boxes gives:

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[6] Sachs took chi-square value of 2-4 as weak, 5-7 as significant and 8-9 as highly significant
[7] *Astrology Under Scrutiny*, 2013, edited by Wout Heukelom, compiled by Geoffrey Dean and produced by Rudolf Smit, p.206.
[8] K. Tarvainen, in *Correlation,* 2014, 29(2) p.43, 'Positive Results in the book Astrology Under Scrutiny', p.43.
[9] See Dean's online 'Love signs fail world's largest test', subsection 'A Recent Swiss Study' www.astrology-and-science.com/S-love2.htm: This page begins: "Three recent studies (Sachs 1998, Castille 2004, Voas 2007) with a combined sample size of 27 million couples have failed to find the slightest evidence for sun sign effects." Is that intentional mendacity, or if not what is it? On the aspect-patterns seen in Sachs' data his comment was merely: "Once again the ups and downs are all over the place."

Table 1: Aspects between married couples in Gunther Sachs survey,
showing deviation from chance. This table scores the frequencies of pairs of sun
signs that are linked by certain angles, e.g., it scores the number of couples having
sun signs in opposition to each other, or square to each other

Aspect		% Xs	No.	χ^2	Observed	Expect	Diff.
Conj.	0°	3.5%	12	29	31,061	30,024	+1,037
Square	90°	-1.7%	24	18	58,725	59,767	-1,042
Trine	120°	1.2%	24	9	60,436	59,676	+760
Oppn	180°	-1.3%	12	5	29,417	29,800	-383

 The main prediction from Sachs survey has to be an excess of conjunctions and a deficit of squares or oppositions. From the above Table, the differential here amounted to just over five percent (3.5% + 1.7%) between the conjunction and square frequencies. The fourth column gives the number of boxes summed in Sachs' 12x12 zodiac matrix, e.g. 24 for the trine-synastry couples (as each sign is in trine with two others).

 Same-sign marriages showed by far the strongest effect. As Sachs observed, astrology books don't recommend this as a marriage combination, so it's not evident that any auto-suggestion effect could have caused it.
 A t-test could here be used to compare two groups, as to how significant their difference is. To compare the twelve groups of sun-conjunct-sun marriages with the twenty-four groups of sun-square sun, we compute for each the percent excess above chance, then group them together:

> *Husband-wife synastry excess, comparing zodiac-sign conjunctions and squares*
> Sun cnj. Sun 103.5 ±2.1% (n=12),
> Sun Squ. Sun 98.3 ±1.8% (n=24), t = 7

 This 5.2% differential is significant at t = 7, a very high value for significance: meaning that if anyone had predicted an excess of same Sun-sign marriages and a deficit of Sun-Sun squares - which they didn't – then this result would have surely demonstrated that synastry-astrology had here been proved and vindicated.

Didier Castille

An even larger survey was carried out by Didier Castille, of sixteen million pairs of dates of birth, from all French couples married between 1977 and 1990 who had children.[10] He examined both marriage-synastry and parent-child synastry. Initially he was concerned to replicate the test of Gunther Sachs on six million couples:

> The technique used by Gunter Sachs is a classic one in statistics. It has been used several times in this study. It consists

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[10] He used the resources of INSEE (The French National Institute of Statistics and Economic Studies) from a population census of 1990.

in building a 144 cells table (12 signs for the husband x 12 signs for the wife) in which the whole sample is distributed. Then, a theoretical table is calculated. For each of the 144 cells, the total number of the column to which the cell belongs is multiplied by the total number of the row to which the cell belongs and is divided by the total number of the table.[11] This procedure erases the natality disparities which exist between signs. For each cell, the deviation of the cell frequency from the theoretical value is calculated, squared and divided by the theoretical value.'

After finding the chi-squared values for each cell, he noted as Sachs had earlier, a diagonal line of significant excesses, Sun-conjunct-sun.

His method may have involved an over-use of the chi-squared test, as was pointed out by Dr Suzel Fuzeau-Braesch[12], however this should not detract from the overall significance of his work, or from any future research building upon it.
If we follow the same procedure as for the Sachs 12x12 matrix of sun-signs, computing the percent excess / deficit for each of the twelve sun-conjunct-sun boxes and for the 24 sun-square-sun boxes, then comparing the two means with a t-test:

> *Synastry of Sun-sign conjunctions & squares for Castille's (1999) 6.6 m French married couples*
> Sun cnj.Sun 102.3 ±0.4% (n=12),
> Sun square Sun 99.4 ±0.5% (n=24), t=17

This 2.9% differential is a mere half the size of what Sachs found, yet it attains an extremely high level of significance – so high that I doubt if anyone could calculate it[13] - owing to the large numbers used. The two means differed by *six times* the mean standard deviation of the groups.

Same-Day Marriages, an Artefact?
He found that too many marriage forms had recorded couples with the same birthdays, and did that indicate some error in completing them? He assumed that it did, and adjusted for it by a 'weighting' that decreased the same-day values. Re-plotting his 12x12 matrix he ascertained that the main diagonal line (excess of same-sign marriages) was still present.

Castille then abandoned zodiac signs and instead plotted his data in decans, i.e. 10^0 intervals of the solar longitude [husband's natal sun – wife's natal sun], with the zero position at the

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[11] He here computes expected frequency. Maximum births were for Sun in Aries and minimum in Scorpio, the yearly swing being 13%.
[12] Dr Suzel Fuzeau-Braesch 2005, *Correlation* 23 (1) p. 67; commenting upon Castille's 'Birth Day Effect on Natality Rhythms', *Correlation* 2004, 22(2), p.20-25.

[13] The 'degrees of freedom' here, for use of the student's t-test, are 12+24-1= 35.

centre (See Figure). The marriage-synastry effect here peaks at the conjunction, the zero point of the graph, but unlike the Sachs data showed no trine (120^) excess. Sachs data may have looked more astrological, because it peaked in trines as well as conjunctions, but nothing resembling that appeared in Castille's data. The effect he found was smaller than that of Sachs, his sectors varying between -0.9% and +2.4% in excess frequencies.
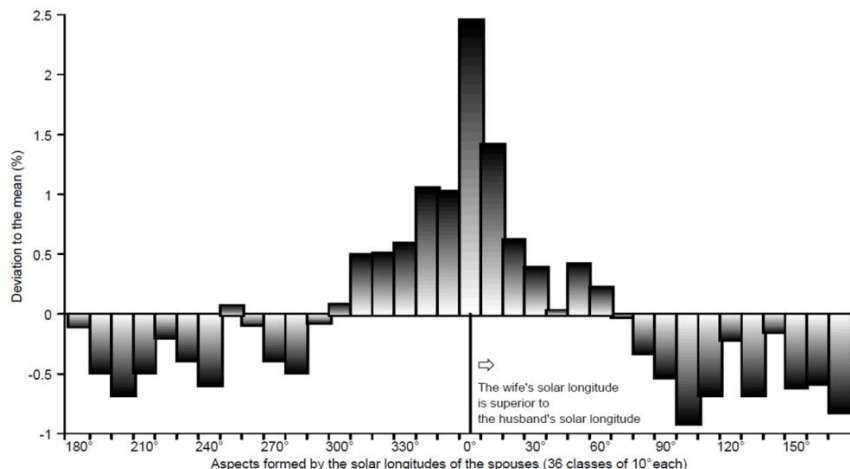

Figure 2: *Castille's 6.6 m French marriages plotted by 36 decans of Sun-Sun angles (1999). This graph is taken from The Value of Astrology by Andre Barbault, publ. 2014 by the Astrological Association*

He later published a larger study with an extra ten million French couples in 2004,[14] this time as frequencies per day of the year (ie days apart of birthcharts of married couples), counting the number of days between the two birthdays in the year. One would greatly prefer to have had the data expressed just as solar longitude differences between partners. But, with sixteen million data-points we should be glad that he managed to do it at all! We would have appreciated more detail on how he got the data, what he did, how he did it, and who if anyone checked through it.

The excess which Castille found within same-birthday marriages amounted to 28% more than expected by chance, and that seemed unduly high in the context of the rest of his data, suggesting an artefact – eg, birth registry forms completed incorrectly. If we therefore

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[14] Castille (2004) ref. 12, see Table 4 and Figure 3.

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exclude the questionable day 'zero' (same-birthday couples), then (Table 2), French couples having birthdays within thirty days of each other appear as in excess by one percent.
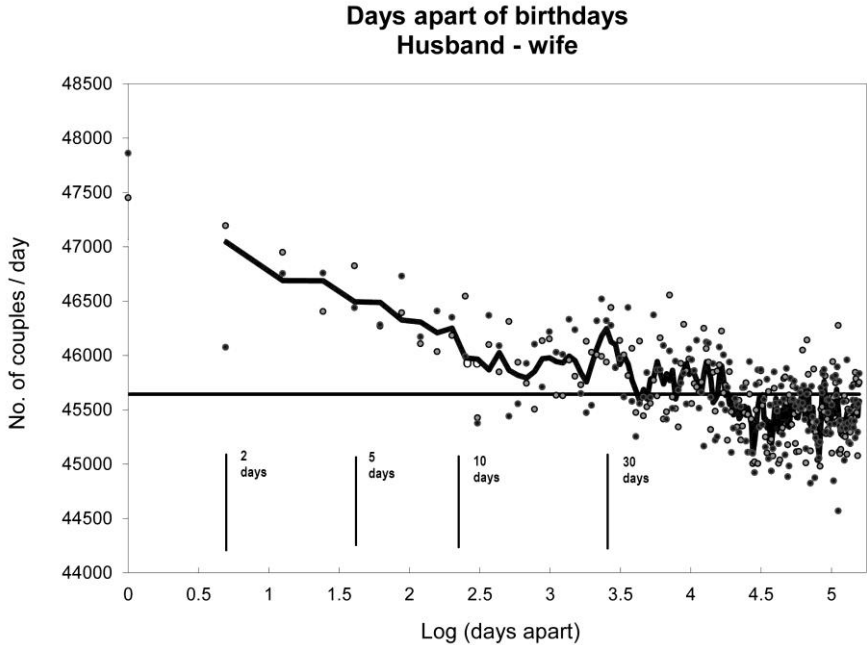
Days apart of birthdays
Husband - wife

Figure 3 shows the data comparable to that of Figure 1, but with the extra ten million couples that were added between his 1999 and 2004 reports![15] It is here plotted on a logarithmic scale of days which may help make sense of it: the day-count he used ranged from 1 to 182, the latter being the furthest apart of the two birthdays in the course of a year, and the logarithms therefore range from 0 to 5.2. The first few days are stretched-out by the log scale.[16] Each score of days has two points on this graph, eg day three has one value for the wife's birthday being three days earlier, plus another one for three days later. A three-day moving average has been put through the data. The horizontal line gives the overall mean of couples per day of separation. Days-apart used in Table 1 are here depicted as vertical lines. This graph simply shows how the excess increases, the closer the birthdays are together; thereby refuting Dean's claim[17] that Castille's result is due to a same-day artefact.

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[15] Numbers taken from Castille 2004, Table 4; these added up over the year came to 16, 614,486, marginally less than Castille's figure of 16, 671, 510.
[16] One would have preferred to be given expected frequencies per day of separation, as Castille gave in his earlier 2000 paper. Seasonal differences in births could to a small extent affect the solar proximity between charts.
[17] See Dean ref. http://www.astrology-and-science.com/S-love2.htm

Could timed data here be used, it would clarify the shape of that graph over the one day, (or one degree) Sun-Sun range.

Castille concluded: "Marriages between people having the same solar longitude (more or less 30°) are more numerous than one would expect."[18] A 30° sign is roughly equivalent to ± 15 days, which had a mean excess of +1.6%, about half what Sachs found. If the zero value were to be here included, i.e. same-day marriages, that figure would rise to a mean excess of + 2.2% for the span of 30°. Assuming the excess of same-day birthdates of married couples is a mere artefact, and if a similar effect had been present in Sachs data (using Swiss marriages), then the excess of conjunctions which Sachs found would need to be lowered by something like half of one percent, to correct for that.

Dean's derisory online comment, of Castille's Sun-conjunct-Sun 30° sector excess was: "thus the corresponding effect size is a tiny 0.0039,"[19] whereas it was in fact around two percent, or 0.02.

Table 2:
Castille's data (2004) of 16,671,510 French married couples, selected by days apart of birthdays (excluding year-differences), showing excess over chance-expected 'couples per day'. Note problematic high value for same-day marriages.

Orb	Daily Mean	% Excess	Sig.(Chi-squared)
± 30 days	46156	1.1%	$X^2 = 6$
± 10 days	46581	2.1%	$X^2 = 19$
± 5 days	46870	2.7%	$X^2 = 33$
± 2 days	47145	3.3%	$X^2 = 49$
Net av.:	*45,644*		
0 days	57817	27%	

Couples born within ten days were in excess by 2% and those within five days of each other showed a 3% excess. The significance level increased as the number of days is reduced, indicating that the best prediction for testing Castille's finding, would involve only a small number of days between couples' birthdays – maybe excluding the same-day birthdays.

Timing of Birth
Castille's work has unfolded through three concordant steps: he first showed that husbands and wives have their Suns closer in zodiacal longitude than would be expected, confirming in some degree the work of Gunther Sachs; then he showed a similar effect for birth charts compared with death charts, and then ditto for the charts of parents and children.[20] If one could believe he had achieved even one of these three things, it would have far-reaching implications.

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[18] Castille, *Sunny Day* op. cit.
[19] Dean, http://www.astrology-and-science.com/S-love2.htm
[20] Castille, RAMS 9, March 2001 *A Link Between Birth and Death*

His birth-data synastry, comparing days apart of father and child, for the same sixteen million figure, gave a somewhat comparable effect, but not quite so large. Of this he remarked (in a context of defending his work): 'We saw 472,000 births occurring around the father's birthday, more or less 5 days, and this is 15,000 births above the frequency we were expecting. Can we say the effect we are facing just does not exist?'[21]

Father-child pairs having the same recorded birthday scored 10% above expected, and this time Castille was adamant that it had *not* been caused by an artefact, because: 'the births that occurred in France during the period dates are certified and registered by hospital staff.'[22] But, plotting the data as before logarithmically I found that the zero-day value still scored unduly high. If French investigators wished to check up on this enormously important work by Castille, they could maybe take a small subset of the same-birthday group, say one or two hundred, and ascertain whether their dates were all correct, or if some proportion were spurious; also they could ask hospital doctors why recorded birthdates on the same day of the year as the father's birth should be scoring ten percent above the chance-expected level? The synastry with the father was stronger than that for the mother, which as Castille pointed out argues against hospital error as the cause: if it isn't astrology, then what is it?

Comparing ten million death-dates with birthdates ('A Link Between Birth and Death' http://cura.free.fr/xx/18cas3en.html , registered in France between 1979 and 1997) he concluded that 'People who die around their birthday, more or less thirty days, are more numerous than in theory.' The result here was comparable to his earlier survey, a sharp peak on days near to the birthday. Castille left open various explanations, such as a birthday causing stress or depression; while tending to favour the 'astrological' notion of cycles of Time.

An investigation by two Swiss psychoanalysts[23] found a larger excess of same-day births and deaths, but did not suggest that this had been due to errors in the writing of death-certificates:

> Swiss Study 1997 1,275,033 Swiss deaths, 4,075 dying on their
> birthday = +17%
> Castille 2001   9,867,750 French deaths, 30,432 dying on their
> birthday = +13%

This anniversary effect was stronger for people who died young, Castille found, which did not sound very compatible with the idea of birthday stress as a cause of death. He found an excess of deaths around and close to the birthday, which could hardly have been due to error in the death-certificates, or to birthday stress. While Castille has not here given his data, as he did for the earlier studies, I suggest it would be of interest to examine the excess of deaths on days around and close to parental birthdays, maybe excluding the 'day zero' if

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[21] Castille, 'Response to Dr S Fuzeau-Braesch's comment on Birth day effect on natality rhythms', *Correlation* 2006 23(2) p.62
[22] Castille, C*orrelation* 2004, ,'Birth Day Effect on Natality Rhythms', 22(2), p.29.
[23] J. Bovet, J&C. Spagnoli, 'Mortality and Birthday', *Sozial und Praventivmedizin*, 1997,42,3, Basel (alluded to in Castille, 'De Sphaeris blog' Aniversaires Funestes')

this presently remains questionable. One would here plot frequency of deaths in terms of degrees of solar longitude between the death date and parental birthday.

The Sceptics Respond

In 2007 an unpublished UK survey appeared on the web by David Voas, of the University of Manchester census department: 'Ten million marriages: A test of astrological 'love signs.''[24] A summary was publishaed next year in the *Skeptical Enquirer* touted as 'The largest test of astrology ever undertaken.' Using UK data it concluded not surprisingly that sun-signs had no perceptible effect upon marriage synastry. It gave no references, made no allusion to anyone else's work, and neglected to explain how the sun-signs had been ascertained (he found them by using dates[25], which will vary over years by a day or two, i.e. the blur in his data was probably as large as any effect he was looking for). The correct procedure is by noon solar longitudes, grouping them by thirty degree sectors, which Voas did not use. None of this prevented Dean from alluding to the Voas report as 'definitive'[26].

In 2013 the allegedly science-based *Astrology Under Scrutiny* had a section '12.4 What about Sachs positive results?' which made no allusion to Castille – whose name did not feature in the book's Index – and brazenly averred, 'Overall there was no hint that sun signs are valid.' We here note that the Latin word *Scientia* means knowledge and not ignorance, and that it cannot properly mean materialistic scepticism as it appears the authors of this tome clearly believe. It is indeed true that Castille concluded that Sun-signs were not *as such* working, but rather solar celestial longitude angular differences between the couples natal charts, where the effect can show up in terms of Sun-sign frequencies.

We may pause to reflect upon how rare it is, that a large-scale test of astrology is tested or replicated using an even larger group, with both achieving positive results – indeed, such a thing has never happened before. We might also reflect upon how absurd it is, that a weighty tome claiming to scrutinise the veracity of astrology – and doing so in a radically sceptical manner - should omit any mention of the most significant and largest-scale test of it in the 21st century.

Discussion

Few have been the comments upon the potentially far-reaching significance of Castille's work: perhaps because his data is not available for anyone else to check, there may be no-one who helped him in the investigation who can testify as to its reliability, and the French science journal in which his results were published did not feature discussion of his results and folded up soon after. It may be therefore of interest to see how his work developed out of earlier population-surveys. He has mainly published in the short-lived Paris annual magazine, *Les Cahiers de RAMS* (Researches in Astrology Methods of Science):

> RAMS 1997 'Birthrates and lunar cycles'
> RAMs 1999: 'The people of France and the rhythm of the
> zodiac'. http://www.aureas.org/rams/castille01us.pdf

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[24] Voas, 2008 (ref. 4).
[25] Personal communication (his method had not been explained in the text)
[26] http://www.astrology-and-science.com/S-love2.htm

RAMS 1999: The zodiac and babies in various countries. DC and Suzel Fuzeau-Braesch
RAMS 1999 Supplementary papers: A study of international distribution of birth data DC & Suzel Fuzeau-Braesch
RAMS 2000 *Marriages au Soleil* in the now-defunct French *RAMS* journal, Jan 1999 (English, 'Sunny Day for a Wedding'): 6.5 million marriages 1976-1997
RAMS 9, March 2001 *A Link Between Birth and Death* (on CURA website) 10.0 million French deaths, 1979-1997[27]
RAMS 2002: 'Astrology, Statistics, and C.G.Jung'
L'Astrologue 2003 Barbault, A.& Castille, D., Numéro spéciale hérédité Astrale, No. 141
Correlation 2004 *,'Birth Day Effect on Natality Rhythms',* 22(2), p.20-25: 16.6 million births 1977 -2000[28]

 Titles in italics have been here alluded to. Since 2004, Castille has published nothing more on the subject except that in 2006 he replied to an irate letter by his former colleague the late Dr Suzel Fuzeau-Braesch. In September 2005 he lectured on 'Using Demographic Data As Astrological Research Tools' to the UK's Astrological Association, then in 2008 spoke on 'New Results on Demography and Astrology Research' to the US United Astrology Conference[29] and then again in 2014 to the AA on 'The Scientific Value of Astrology According to André Barbault;' but recordings of these talks lack data.

 A book by the renowned French astrologer André Barbault, *L'Astrologie Certifiée* in 2006 published in English as *The Value of Astrology* (2014) has averred that: 'We have reached the milestone of the year 2000, which may well be viewed later as a decisive historical turning-point in the unveiling of astrology thanks to the arrival of a new contributor,' and praised Castille's work (p.108):

> "Indeed it is the demographic in its entirety which is being surveyed collectively. In other words this will be the hub for the fate of astrology, the point where there has to be a clear yes or no. and we have to get to that point."

 His somewhat premature conclusion was: 'From now on, with results like these, the best efforts of the anti-astrology lobby will be in vain and they will either have to be silent or engage in dishonesty.' (p.114) Science, however, is concerned with public knowledge. To quote the Editor of *Correlation*: 'If Didier Castille's findings are sound, we have, if not

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[27] Castille developed this on an undated, *De Sphaeris* 'Aniversaires Funestes' ('Fatal Birthdays')
[28] Compare his 'Anniversaires en Famille', 2008 ('Family Birthdays') *De Sphæris*, arguing that French families had birthdays closer together than they should by chance.
[29] "Human societies are regulated by seasonal birth rhythms which vary according to birth place and time periods. Describing populations based on these considerations is a valuable way for any researcher to explore astrology in a global way. This lecture reports on a promising research program on astrological heredity which has brought to light temporal correlations within families. New experiments have been carried out by using population census data and world vital records." – for his talk.

proof of the research-shy Sun sign, then a demonstration of something similar, and possibly heredity at that.'[30]

 Family synastry predictions of this kind have been made down through the centuries, maybe starting with Kepler.[31] Thus in 1939 Karl Ernst Kraft wrote,

> "The first problem we had to tackle was that of the coincidence
> of the dates of birth so often found for members of the same
> family. These coincidences which relate to the month as well as
> the day, are found far too frequently to be attributed to chance.'
> (Intro to *Astrobiology*, cited in Barbault, p115)"

 That core astrological belief has not been generally expressed in so simple a form, of sun-sign conjunctions.

 Could these finding lead to constructive discussions between sociologists, astronomers and astrologers? That is unlikely to happen as long as the matter is phrased in terms of zodiac sun-sign compatibility. Social workers would probably claim that the effect is a result of reading sun-sign columns, while astrologers would retort that they have not recommended same-sign marriages.

 Some fundamental questions are now almost answerable: 'Do the heavens affect couples coming together, in terms of their birth-dates?' and, 'Do the heavens affect the date of a child's birth, in relation to that of the parents?' The answer to both of these would seem to be, 'Yes.' To a third question, as to whether the heavens affect the timing of death, in relation to that of birth, the answer is 'probably' although as Castille noted there remain issues to be resolved.

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[30] *Corr.* 2012, 28(2), p.5, Editorial by Pat Harris.
[31] Paul Choisnard, 'Kepler et L'Hérédité Astrale' http://desphaeris.com/1-Articles/ChoisnardP001.htm

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