

Planetary Influences on Human Behavior ("Gauquelin Effect"): Too Absurd for a Scientific Explanation?

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Abstract—Starting points are the investigations of the Gauquelins into planetary influences on human beings and the attempt at a scientific explanation by Michel Gauquelin. Aside from the fact that so far no physical link connecting planets and human behavior has been discovered, there are six other facts that resist integration into Gauquelin's explanatory model. In the model put up for discussion here, which includes not only physical and hereditary, but also cultural-historical, psychological, and evolutionary aspects, these critical points are reconciled with reality and at the same time the physical problems are simplified.

Empirical Findings

Astrology is an ancient lore, rich in tradition. Its roots go back to the country between the Euphrates and Tigris from where it emerged from the dawn of history four thousand years ago (Boll, Bezold & Gundel, 1966; Shulman, 1978; Thierens, 1975; van der Waerden, 1966). In the course of the centuries astrology became a universal theory of mankind that claimed to be able to make correct predictions about the structure of the character and the destiny of human beings. However, for a long time there was no scientific basis to this claim. One reason for this was that the fundamentals of astrology were considered to be incompatible with the principles of exact sciences, and thus, an empirical verification seemed unnecessary. On the other hand, adequate statistical methods were not developed or made use of until this century.

The first to deal extensively with this subject and to apply scientific methods was Michel Gauquelin. For the past 40 years he has—at times, together with his collaborator, Françoise Gauquelin—attempted to shed light on the connections between cosmos and man. The results of this research are contained in numerous publications (Gauquelin, 1955, 1960, 1973, 1983, 1988c). In the following I will try to give a short summary of the major findings.

Of the many elements in the astrological system, statistically significant results were only found for the Moon, the planets, Mars, Jupiter, Saturn, and

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to some extent, Venus. They are confined to two positions in the cycle that the celestial bodies appear to describe by the diurnal axial rotation of the Earth: the rising point (R) and the culmination point (C) with a 2-hour zone immediately ensuing and a shorter 40-minute zone prior to it in each case.

The sectors, defined accordingly, account for $2/9 = 22.2\%$ of the whole circle and are called plus zones or key sectors. No statistically relevant results were found for the other astrological elements investigated (zodiac, houses, aspects, and transits).

The main results won from many thousands of cases from different countries are the following:

- Members of certain professional classes show a tendency to have been born when an "effective" celestial body is in a plus zone; with sports champions, military officers, and physicians it is Mars; with actors and politicians, Jupiter; with scientists, Saturn; and with writers it is the Moon. With artists, it is conspicuous that Mars and Saturn have low frequencies in the plus zones (Professional differences hypothesis). The statistical correlation becomes all the more distinct the more famous the investigated persons are (Eminence hypothesis, analysed in detail by Ertel, 1988).
- The decisive factor is not the formal inclusion in a particular professional group, but the existence of traits typical for the different professions. (Character trait hypothesis, questioned by Ertel, 1987.)
- Celestial bodies in the plus zones of the parents can be found more often than can be explained by chance in those of the children, and vice versa (Heredity hypothesis). After this hypothesis had been confirmed by two extensive studies, a third investigation yielded no statistically significant results. The summary of the three studies confirms the hypothesis, but further studies would be desirable.

Additional, and in some cases controversial, results that are of less importance for the problems dealt with here can be found in the literature mentioned above.

Gauquelin's Explanatory Model and the Questions it Leaves Open

Although, as yet, no scientific explanations are available and the network of proven results is not very dense and differentiated, it is, nevertheless, important and meaningful at this stage to attempt an explanation. Even if such attempts are of a speculative nature for the time being, they can stimulate the realization of empirical studies. The lack of conclusive and sufficient explanatory models bars natural scientists from dealing seriously with the results. The astronomer, George Abell, clearly admitted this in an introduction in one of Gauquelin's (1979) books:

To be honest, I am highly skeptical of the Gauquelins' findings and of their hypothesis. The main reason is that I cannot imagine a mechanism whereby the effect can be produced.

M. Gauquelin had already thought about an explanation for his results at an early stage of his work. With regard to this, a short summary must suffice. For details, the reader is referred to the literature. Gauquelin does not hold the opinion—as do some astrologers—that the newborn child is influenced, "imprinted," by the celestial bodies only at the moment of birth.

In his opinion the "planetary temperament" is part of the inheritance in accordance with his heredity hypothesis. He assumes that birth occurs at the very moment when the planet corresponding to the character is in a plus zone. In principle, this is possible, as according to new medical results birth is controlled by hormones produced by the fetus. In this context, however, the logical question is: How does the fetus know, where "his/her" planet is situated at the moment?

Such a position-finding would only be possible if the planets produced physical effects strong enough to reach the unborn child and to stand out against interference factors. None of the forces, waves, or rays known so far meets these requirements; not even light, as it neither penetrates brick walls nor the abdominal wall of the mother. Though it is not known at present when and if such a physical factor will ever be discovered, its existence is conceivable. Therefore, we will let this question rest for the time being. Gauquelin (1973) speculates that there is a causal connection between an interaction of planetary forces and the solar wind.

Aside from this crucial point, a number of other problems arise, to which an explanatory model must also provide satisfactory solutions. Most of these have already been dealt with by Gauquelin (1983, 1988a).

1. Planetary influences on a physical basis ought to increase steadily up to the culmination point of the planet and then decrease in the same way. But this is not in accordance with the spectrum of the empirically determined plus zones.
2. Paradoxically, no effect was found for the Sun, though solar influences on the Earth are otherwise numerous and widespread, while on the other hand the planets are said to have an effect, though so far it has not been possible to detect any forces emitted by them which have an adequate effect.
3. An influence on delivery should start at the beginning of labor; the birth itself is only the termination. The validity of the heredity hypothesis could not be proven for the beginning of labor. In any case, it is less valid than for the time of birth (Gauquelin, 1988b).
4. The different planets "impart" different temperaments. How can the connection between qualitative differences in temperament and quantitatively graded physical forces be imagined? Even if we proceed from the

assumption that the planet only "triggers" the delivery of a new human being whose hereditary disposition has already been defined, a link between psychic structure and physical agents must nevertheless have been built up at some stage in the evolution of mankind. Why then does Jupiter, which is physically similar to Saturn, have a planetary temperament, which is opposed to that of Saturn, while being linked to the different Mars by a similar temperament?

5. With regard to evolution, we might ask why planetary heredity should actually have developed at all. Physical or psychological traits only develop if they promote the life and survival of individuals and their species. An example for this is the tendency of births in humans (and other mammals) to occur naturally at dawn, provided that medical interference is ruled out. Nowadays, a delivery in the daytime during the normal working-hours of a clinic is more simple (birth by appointment). For wild mammals, and the same applies to mankind in the early stages of development, however, the time before sunrise is the most favorable for securing survival. As it is still dark, mother and child are better protected against enemies from whom they can hardly escape during parturition. On the other hand, daybreak will soon drive away the chill of the night. Thus, a preference for a certain time of day can be seen to have its advantages.

But why should man have developed the faculty to detect very faint cosmic signals, waves, or radiation and to react accordingly without this having a demonstrable advantage for him? (These forces have to be very faint, otherwise they would have been discovered earlier.) But even if we assume that whether they are useful or not, they have to be perceived, we are then faced with the next profound question, namely what advantages are supposed to have derived from a planet that is in a plus zone at the time of birth?

This question does not relate to findings that imply that a person equipped with a Mars temperament might be more fit for life. The question is, rather, what biological advantage the Gauquelin effect brings (i.e., the fact that a person with Mars temperament was born just when Mars had risen or culminated). Why should he be superior to another person with the same temperament who, however, has Mars in an un-conspicuous position in the celestial vault?

6. The planetary temperaments, as established by empirical methods by the Gauquelins, agree widely with old astrological fundamentals, a fact that was recognized early on (Gauquelin, 1973, 1988a). Mars, the classical God of War, can indeed be found more often in prominent position with military leaders and sports champions; the serious, meditative Saturn with scientists; the radiant and dominant Jupiter with actors and prominent personages; and the dream-tempting Moon with the poets. The correlation between empirical results and the writings of the astrologers had been proved by statistical means (F. Gauquelin, 1982; M.

Gauquelin, 1982), and a positive result was even found with the nearly 2,000 year-old textbook of Ptolemy. The fundamental meanings attached to planetary gods can be followed back even further to Babylon, where Marduk-Jupiter was the reigning god and the red and fiery Mars, as Nergal, the god of war, went about his bloody business.

This aspect of the Gauquelins results was only welcome by the astrologers, who regarded it as a first step towards general acceptance of their lore. But in the eyes of astronomers and other critics of astrology such a result seemed suspicious and lent force to their doubts. In any case, an explanation was not made easier. How did Chaldaic priests set about finding planetary interpretations that were confirmed 2,500 years later by means of scientific methods? Three different hypotheses are mentioned (Gauquelin 1980; Gauquelin 1988a):

The Hypothesis of Supernatural Influences

According to this theory, the ancients received their knowledge by divine revelation, clairvoyance, or visitors from other planets. If one satisfies oneself with such answers, this only subsequently gives rise to many more questions, which appear to lend themselves even less easily to scientific explanations.

The Hypothesis of Experience

According to this theory the priests arrived at the correct explanations gradually by means of continuous observations and chronicles. There are also considerable objections to be made about this argumentation. Individual horoscopes have only been known since 400 B.C.; up until then, the interpretations were limited to general topics such as the weather, harvest, and wars; at most, statements concerning kings were made (van der Waerden, 1966, pp. 95, 242). The symbolism of the planets had already been established when natal astrology first began.

An empirical verification of the stated hypotheses makes it necessary to record or at least to remember the hour of birth in order to allow a comparison with the character and destiny of the person in question to be made. Taking into consideration the fact that even in the Middle Ages the recordings of such details as the year of birth were unreliable, one has to doubt the efficiency of an empirical approach.

Furthermore, a review of the astrological literature of the last few centuries does not show an increasing approach to the results of the Gauquelins (M. Gauquelin, 1982). And yet, learning from experience then ought to have been more easily possible than in Babylonian times. Intuition, experience, and intelligence of the post-Babylonian astrologers apparently created more mistakes rather than helping to find the truth. No aspect of natal astrology developed in Hellenic times, including the zodiacs, has stood closer examination.

The Hypothesis of Appearances

The most ancient and widespread theory holds that the meaning attached to the planets matches their outward appearance. The reddish Mars is fiery and bellicose in the eyes of the naive beholder and thus predestined to become a god of war. Mars' aggressive nature is underlined by the fact that the planet is capable of considerably increasing its brightness when it moves into opposition to the Sun. By contrast, the characteristics attached to Saturn, with its pale yellow shine and its slow course through the zodiac, are those of old age; the dominant qualities being coldness and dryness. Jupiter holds a place in between; with its bright and radiant light it reigns over the midnight skies. Jupiter's dominant position among the gods was presumably strengthened by the fact that its course deviates least of all from the ecliptic, something that was already known to the Babylonians. The flexibility and the capriciousness attributed to the Moon-temperament can be attributed directly to the changing lunar phases. Finally, with Venus, the facts are not clear. The results concerning Venus are the least verified in the Gauquelins' research. With the Greeks and Romans, this brightest shining star is associated with the goddess of love, but with the Babylonians it fulfills two functions in the guise of the goddess Ishtar: As the evening star, Venus is responsible for fertility and as the morning star, for combat.

Gauquelin (1983, p. 120), of course, realized these connections. "It would seem that the code for each planet; or its symbolism, was based quite simply on its appearance." On the other hand, he understandably regards the deduction of planetary temperaments from appearances with a certain degree of skepticism. "It is difficult, in spite of everything, to believe that the 'martial' nature conferred by this planet could be directly linked to its red colour, like blood." "The theory of 'appearances' suffers from too many exceptions and shows too much inconsistency to be the right one. . . ." (Gauquelin, 1988a, p. 187). Startup (1981) also believes that data concerning outward appearances were no more than impulses for some kind of scientific research program applied by the Chaldaic priests and their successors.

Only those astrologers who defend symbolic analogy regard the theory of appearances positively. For a person with a scientifically oriented mind it is, on the other hand, inconceivable that physical forces emitted from a planet should have psychical effects correlating with the appearance of the planet.

Could it be, then, that the connection between planet-exterior and effect is ultimately purely accidental? A historical contemplation argues against this, though. One of the greatest authorities on ancient astrology, Boll (1916), has proven "that the ancient, above all the Babylonian observance of the sky, which was prompted by astrological interests, paid particular attention to the colors" and "that the starting point of the ancient astronomers for the comparison of fixed stars and planets had been the color." The star catalogues found in old Babylonian and Greek texts justify such a conclusion. It is remarkable that the former ratings of the color are in agreement with the observations of modern astronomers. The class of color was not only a su-

perfidious characteristic, but followed the principle "same color, same nature."

For the historians concerned with ancient astrology, there is no doubt that the characteristic traits of the planetary gods were primarily taken from the outward appearance of the planets (Boll, Bezold & Gundel, 1966). From where else? This is the obvious question when one considers the possibilities of prehistoric man. There would be no cause for consternation if 3,000 years later this deduction had not been found to be correct. The dilemma one finds oneself in with the fruitless search for alternatives is mirrored in the following remark by Gauquelin (1983, p. 159)

I don't know whether I will live long enough myself to see the mystery of astral influence dispelled. The explanation is doubtless much simpler and much stranger than we can imagine, and perhaps I am making a mistake in trying to rid the planetary effect of all absurdity.

An Extended Explanatory Model

Three main points mark Gauquelin's model for explanation as unsatisfactory and in need of extension:

- The missing proof of physical forces of the planets that can produce effects on humans.
The lack of evidence of a biological advantage of the planetary effect.
- The fact that it does not explain how the ancient astrologers hit upon the "true" meaning and effectiveness of the planets or rather, why this corresponds to the outward appearance of the planets.

The first point could be devastating if the possibility of finding corresponding physical means of transmission in the future were not granted. The attempt to support astrology on a physical basis has already been made by Seymour (1988). The practicing astronomer proceeds from the idea that the geomagnetic field is influenced by gravitational forces not only of the moon, but also of the planets, and that the nervous system reacts to these very small fluctuations. For the time being, we have to consider this as a speculation and not as a matured theory and "convincing scientific basis" for astrology as Seymour himself asserts.

I consider the two other objections to be more problematic because here conflicts with general scientific principles or laws of cogitation arise. Above all, it is hard to imagine how a "theory of appearances" should be integrated into a scientifically oriented model for explanation. Yet, precisely here one can find a starting point for a solution to the problem. We have to take seriously the observation that man linked the respective characteristics to each planet according to its appearance. Have we then not arrived again at the old scientific standpoint, that astrology is a typology of living beings projected on to the celestial vault, not bound to the real outer world? What becomes then of the Gauquelin effect, whose claim to reality can no longer

be denied? How this contradiction can be solved, how subjective projection can be made compatible with objective effect, I shall try to demonstrate with the following explanatory model. I shall begin by presenting a series of six hypotheses without further commentary:

H1

Prehistoric human beings who stand out from their group in their religious development, worship a planetary god who personifies their own image of ideal man. If pugnacity and courage are esteemed highly they worship Mars, or the god that was then linked to the reddish planet.

H2

The planet is worshipped mainly following its rise (R) and culmination (C), the most striking points in its daily course.

H3

Oscillations, rays, or other effects (not yet discovered) of the planet are sensed by the pregnant woman and the fetus, especially the beginning of the effect after the rise (R) and its climax during culmination (C).

H4

Children born at the moment of R or C, that is, in the "presence" of the god, are consecrated and especially revered. They have a higher social rank and ultimately more offspring. One could speak of "Gotteskindschaft" (divine sonship) as a hypothesis.

H5

The production of hormones that stimulate labor is directed in such a way by the planetary perception that a time of birth at the moment of R or C is favored. This disposition is taken up by the genes and henceforth transmitted to the offspring.

Human beings who are carriers of corresponding genes not only show a tendency to be born at the instant of R or C; according to H4 they will also have more descendants. This holds at least as long as the cultic-religious tradition favoring the new genetically embodied characteristic has its effect.

H6

Ultimately, a selection of human beings in the sense of the forming of an klite evolved. This klite represented the image corresponding to the planetary

god, as well as showing the tendency to be born at the instant R or C, and has continued to transmit these characteristics through the ages, even if today the biological advantage is not directly recognizable. All the other reflections lead to this sixth hypothesis, therefore, I would like to define it as the thesis of the "planetary élite," even if this definition does not deal with all aspects of the complexity of the process.

Discussion of the new hypotheses

The new explanatory model, subdivided into the six hypotheses, will be exemplified and explained in the following. In the case of prehistoric events which have left only few traces, one is, to some extent, dependent on speculative considerations.

H1: Planetary Gods as Ideals for a Group

The hunter and gatherer communities of the Stone Age consisted of five to six families (Leaky & Lewin, 1978). They belonged to a large, widely spread tribe to whom they were linked by language and culture, and with whom they probably shared religious ideas. The development of a differentiated lore such as Babylonian and, to an even greater extent, Hellenistic astrology requires a long time. In the beginning the celestial bodies were probably contemplated and worshipped with awe. Later on, certain rituals were perhaps performed led by elected members of the group. Some details from classical mythology argue in favour of an elective affinity with certain planetary gods (von Ranke-Graves, 1984). Priamos, King of Troy, was considered to be descended from Zeus-Jupiter; Penthesilea, the martial Queen of the Amazons, who could only be conquered in the battle for Troy by Achilles, was a daughter of the god of war, Ares-Mars. Romulus and Remus, who founded Rome, were also sons of Ares. King Latinus, one of the ancestors of ancient Rome, was himself considered to be an offspring of Kronos-Saturn. And one Gaius Julius Ceasar traced his dynasty of the Julians back to the goddess Venus (Gundel & Gundel, 1966, p. 127). However we might choose to interpret the reports on godly descent, they, nevertheless, reveal a congeniality between the offspring and the god.

H2: Rise and Culmination as Major Points

It is immediately conceivable that there are, above all, two instants suitable for worship of the celestial body: the eagerly anticipated rise on the eastern horizon and the culminating point of its course. In the interpretations by the ancient Sumerians and Babylonians, the risings of the planets are mentioned again and again: "If a child is born while Venus is rising, his life will be quiet, rich, wherever he goes he will be loved, he will live long . . ." (Gundel, 1933). "If a child is born at the instant of Jupiter rising and Mars setting, he will be lucky and will see the fall of his enemy" (Shulman,

1978). The historians of astrology unanimously point out that rise, and increasingly with the Greeks also culmination, were considered to be the most important positions in the planets' diurnal motion (Boll, Bezold, Gundel, 1966, p. 154; Henseling, 1924, p. 76; van der Waerden, 1966, p. 75). According to Plato, who believed the celestial bodies to be the visible gods, the gods were filled with a special joy at the instant of the planets' rise, at culmination point in midheaven, as well as upon meeting a planet with whom they were "on friendly terms" (Gundel, 1966).

The importance of culmination can also be concluded from reports on the Sabian sect, which developed in the third century from the late-Babylonian astral-religion in the cultural realm of Islam (Bousset, 1973) and continued to exist for centuries. An Islamic scholar, Dimeschqui (1265–1327), reports the following (cited according to Chwolsohn, 1856):

On a Tuesday, when Mars is in culmination, they come to the temple of Mars, dressed in red, soaked in blood and with case-knives and drawn swords in their hands. They carry a man redheaded, reddish brown and red-cheeked whose head glows with redness and they put him into a container filled with oil and drugs, wherein the flesh and skin quickly begin to putrefy . . . This completed, they grab the head . . . and sever it from his body. . . They come in front of the iron idol with the head and say a prayer along the following lines: "O, wicked, fickle, sharp and fiery master. You love riots, murder, destruction, fire and the shedding of blood. We make a sacrifice to you which is similar to you; kindly take it and avert your evils and those of your demons from us." They believe that this head will for seven days predict the good and evil of the year to come.

This example again shows the enormous psychological significance of the color red in connection with the planet Mars.

H3: Planetary Sensitivity

With respect to the existence of a perceptible physical medium, nothing conclusive can yet be said; the same applies to Gauquelin's explanatory model. Independently of this, the question is raised as to why an ability to perceive such faint forces should have developed at all. (Faint, because otherwise they would already have been discovered.) Two reasons can be given for this. Shortly before the rise, a strong mood of eager expectation can be assumed, which upon continuous repetition, can train the sensitivity; furthermore, there is perhaps the need for localization if the sky is overcast or during the daytime when visual contact is impossible. In nature the faintest stimuli suffice to activate strong vital urges. One extreme example for this is the male butterfly, which responds to a single molecule of the odorous substance of the female, in addition to the platypus and certain kinds of fish, which trace out their prey by sensing their bioelectric fields, which in some cases have a voltage of only 0.02 mV.

H4: Preferential Status of the Children Born at the Instants of R and C

In the first century B.C., Properz reported (according to Gundel & Gundel, 1966, p. 129) on attempts to prolong delivery until an auspicious constellation was reached. It is conceivable that those born in the "presence" of the god (i.e., at the rise or culmination of the corresponding star) were considered to be particularly distinguished by the god. The godly descent of major figures of antiquity referred to in the mythology might be linked to this.

If they are elected chieftains or kings, which seems likely, then their chances for numerous offspring are higher. The previously mentioned King Priamos, a "great-grandson" of Zeus, had fifty sons, nineteen of them with his wife Hekabe. Indeed, the births are not documented; but since contrary to former assumptions the existence of Troy was also proved, the correctness of these accounts is not unlikely. On the whole, there is some reason to believe that a "godly" birth constellation leads to preferential treatment in the group. This holds true even more if (in accordance with H1) there was a positive selection among group members from the very start who had a more intense relation to the planetary gods.

The star of Bethlehem, which some historians and astronomers interpret as a great conjunction between Jupiter and Saturn, possibly has a similar symbolism.

H5: Linkage Between "Planetary Perception" and Hormonal Control of Delivery as a Hereditary Factor

It is conceivable that a birth at the instant of R or C might already have been favored due to a strong inner expectancy. In the days prior to delivery, the time of birth might additionally have been influenced by ritual acts performed by the pregnant woman in the daily rhythm of the course of the planets. A conditioning is possible in which planetary perception, and hormonal control of delivery are temporally linked. One can assume that basically this linkage can be taken up by the genes and that from this time onward the exact time of birth no longer depends on the position of the sun and the internal conditions of the mother-child-organism alone. The advantage of birth before sunrise loses in significance as human beings combine to form social communities, families, and hordes to protect each other. Now the planetary effect can make itself felt more easily, as the effective planet can rise or culminate at any time of the day or night.

A hereditary fixation of the planetary control of birth might be explained in view of the prevailing Neo-Darwinistic theory of evolution. By means of mutation, the prerequisites are provided in the genetic code, so that upon perception of a planetary signal, the production of birth hormones can begin. Obviously, this process cannot be confined to the actual time of birth, as delivery takes several hours from the beginning of labor. It is more likely that as the time of delivery approaches, which among other things manifests itself

by a rearrangement in the hormones, the inner processes adjust gradually to the planetary instant aimed at.

In addition to mutation, the second requirement that has to be met for the propagation of the new property is the survival-advantage, which according to H4 (higher rank, more offspring for those born at the "right" time), is also present. The question remains, whether the historical epochs in question are long enough for a selection process. How far back into the past can the beginnings of an astral cult such as the one underlying our hypotheses be followed?

The systematic astral observations, calculations, and interpretations of the Sumerians and Babylonians that are documented by records from the third millennium B.C., imply a long preparation period in the form of a naive and natural astral cult on which no chronicles exist. The immense significance of astrology in antiquity, which at times took over man's thinking and acting, is inconceivable without a long initial period. One can assume that man's occupation with the stars began as soon as the mental requirements were met. Man had to be able to separate his perception and actions from his immediate urges. This process seems to have started as much as 60,000 years ago. A burial-place that dates back to this time was found near Shanedar (Iraq). An arrangement of flowers was discovered inside (Calder, 1984; Leaky & Lewin, 1978). The beginnings of a system of time-measurement, in which the days and the phases of the Moon were carved into bones, can be traced back 35,000 years, according to discoveries made in France. The most ancient piece of clothing, adorned with beads, that has been discovered so far, is estimated to be 25,000 years old. Cave-paintings are up to 17,000 years old. Approximately the same age is assumed for the Venus of Laussel (Southern France), a semiplastic sculpture of the female body with a horn in the right hand that could also be taken for the crescent moon, and which exhibits fourteen notches. This could be seen as an allusion to the fourteen days of half of the lunar phase, and the left hand pointing to the womb could be interpreted in connection with menstruation. There is a clay sculpture from Asia Minor from the year 6,000 B.C. that realistically displays the act of birth (Giedion, 1964).

From this information, we might deduce that the beginnings of worship of celestial bodies go back 30,000 years. Thus, with a generational period of 25 years, 1,200 generations would be available for the required selection process. Perhaps, such a long period of time is not even necessary. We can draw a comparison with events that began approx. in the year 6,000 B.C. in Western Asia (Calder, 1984; McCracken, 1971). At that time man began to keep cattle and goats, although in those days the lactose of the milk could only effectively be digested by infants. Presumably, the enzyme lactase was only present in adults after a mutation of the corresponding gene. In the course of the millennia the new hereditary factor was spread. In some areas (e.g., in Eastern Asia) the people still lack this enzyme even today. Within the Caucasian race, the new gene has been largely adopted.

On the understanding that this hypothesis is true, it makes sense to fix a similar period for the development of planetary temperaments. Whoever finds the evolutionary step outlined here too improbable, should remember how many almost unbelievable examples of complicated instinctive behavior can be found in nature that must have developed in the course of the process of evolution. To an increasing extent, this fact also fosters the doubts surrounding the comprehensive validity of the Neo-Darwinistic theory. According to the model of cybernetic evolution (Schmidt, 1988), mutations, by chance, play only a minor role. Above all, with regard to the cultural development, a cybernetically controlled resynthesis of genes is said to have priority. One of the hypotheses of the cybernetic theory of evolution states that intense experiences engraved upon the memory are able to induce the storage of RNA- and DNA-sequences in the brain. These sequences can then be transferred into the genes of the gamete, presumably during a sensitive stage in the development of the embryo.

This is not the place to discuss a new theory, which certainly does not yet have satisfactory answers to a number of questions (the same can be said with regard to Neo-Darwinism). But we must not omit to point to a concept which could help to solve numerous problems concerning culturally determined evolutionary processes. This would also apply to the particular questions posed here, although they do not necessarily depend on it.

H6: The Forming of an Élite With Hereditary Characteristics

The "cattle-and plow-revolution" (Calder, 1984), 6,000 years ago, supported the development of planetary temperaments in yet another way. While human societies had previously consisted of hunters and gatherers with only minor social distinctions, now more stable communities formed with social classifications between rich and poor, master and servant. Organization and administration became important. Tribal feuds sprang up and ended in wars; prominent warriors became kings. The cultural prerequisites for the forming of an élite whose members were distinguished by particular social insignia of rank were given.

According to our first hypothesis, those born when one of the worshipped planets was rising or in culmination, were particularly favorably disposed for inclusion in this elite. One has not only to consider that their ancestors had already been distinguished members of their group, but also that their positive characteristics might additionally have been reinforced by the subsequent process of selection. Of those that were elected as chieftains, the strong ones asserted themselves, and the weaker ones remained without impact. Figure 1 attempts to demonstrate the transitions from the ancient planetary gods to the professional groups of our time.

In astrology, Saturn has always been linked with agriculture. The link between farmer and natural scientist becomes clear if one takes into consideration that in the early days of agriculture, the selection, breeding, and culti-

vation of animals and plants, in other words, scientific experiments were very important.

Of course one cannot assume that from the beginning all members of the ruling class had links between planet and personality, not every ruler had to have been born under Jupiter. This depended—on condition that the hypotheses are true—on the propagation of an effective belief in astral myths.

The Open Questions Seen From a New Angle

As has been mentioned above, a number of questions concerning Gauquelin's model of explanation remain unsolved. Is the new model more conclusive in this respect? The crucial difference is that man no longer submits to the planetary influence as a passive object but actively seeks the dialogue between himself and the celestial body. The psychic characteristics are attributed to the planetary gods according to their outward appearance and have a retroactive effect upon man. Thus, all problems concerning the incompatibility of physical and psychological facts are solved. The irritating concurrence between outward appearance, ancient interpretations and new research findings now follows inevitably from the theoretical approach.

A whole series of other details can thus satisfactorily be explained. It now becomes self-evident, that only the visible planets should have an effect. It is of no decisive importance how far away a planet is, if the fact of its "appearing" is of primary concern. Though considerable variations in the distance can occur, especially with Mars and Venus, it now follows logically that no differences in the effect were found (Ertel, 1989; Gauquelin, 1988b).

The question why the Sun causes no effect cannot be answered as easily. But even here arguments can be found. The fundamental importance of the life-giving Sun is undisputed; its influence on terrestrial life is so much in evidence that particular reverence by certain groups was not very probable. Otherwise, there would be no explanation for the fact that not the Sun, but Marduk-Zeus-Jupiter was considered to be the ruler in the realm of the gods, and that the sun-gods, Helios and Apollo, had no sovereign power corresponding to their mighty star. Finally, it is likely to be of central significance that another sector has already been reserved for the Sun as plus zone: it has already been mentioned that the number of births increases in the early morning hours before sunrise, due to increased chances for survival.

The question remains why no results were found for Mercury, although it is visible and in ancient times was counted among the planetary gods. This can be attributed to its close proximity to the Sun with a maximum elongation of 28° , which restricts the conditions of visibility and impedes any autonomous effect independent of the Sun. Finally, it is also possible that the (hypothetical) "planetary sensitivity" is not strong enough for nonvisual perception because the "signals" are too weak.

On the other hand, it seems logical that the most distinct results were found with Mars. No other planetary god has been so clearly characterized

from the very earliest beginnings as this reddish celestial body. The sports champion is not just by chance the showpiece of the Gauquelin research and for years the discussion has revolved primarily around the "Mars effect."

The limitation of the planetary effect to the plus-zones, which did not appear very convincing beforehand, explains itself automatically through hypotheses 2 and 4; it is a necessary part of the explanatory model.

Gauquelin's result, namely that it is not the beginning of labor, but the time of birth that is the relevant instant, is also consistent with the new model. The period of time that elapses between the beginning of labor and delivery varies; in most cases it is much longer with the first delivery. Gauquelin (1988b) did not, however, find any differences in the heredity effect between women bearing a child for the first time and other women. This fact is irreconcilable with the assumption that the mother-child-organism simply reacts to a physical stimulus. It is different if the hormonal processes are programmed from the onset of labor in such a way as to make birth occur at the "correct" instant. But this is only conceivable if a greater biological advantage can be assumed for this instant, as is the case in the new model.

A comparison of the two models also seems appropriate in view of the eminence hypothesis put forward by Gauquelin and Ertel. As according to my hypotheses, favorable conditions for the forming of an élite must be created, the eminence hypothesis follows with logical consistency. Not only is a particular planetary temperament transmitted, but also élitist characteristics such as leadership-properties and creativity or other traits likely to increase the social standing. A planetary effect will, therefore, only rarely occur in a normal population, even if the corresponding temperamental features and characteristic traits are strongly marked. It is only logical, that—in spite of the extremely pronounced nature of distinctive features—no positive results were found with criminals or mentally ill people (Gauquelin, 1981b).

Another striking result reached by the Gauquelins is that prominent painters and musicians show no preference for particular planets, indeed they even demonstrate a significant negative deviation with Mars and Saturn. Ertel (1987) found this trend to be the more distinct, the more prominent the artists were, that is, the more often they were mentioned in diverse dictionaries relevant to the subject.

A parallel can be drawn to our model of Figure 1, in which artists are also missing. They do not fit into the row of prototypes of prehistoric social groups which all show male-dominant features. Even if they did finally succeed in standing out from the masses by means of skill and fame, this was not connected with an external authoritative power. As bards and servants to the ruling class, they always depended on the mercy and generosity of the powerful. Even until recently, great artists often had to live in poverty. The statistical results thus also fit in well with our concept here. Gifted people with a dominating planet obviously tend to use their knowledge and ability to exert power, rather than submit to a world of beauty and fantasy. The only excep-

tion, according to the investigations of the Gauquelins, is in the case of poets, with whom an accumulation of the Moon in the plus zones was found. Perhaps our nightly satellite is, together with Venus, a "female" pendant to the three "male" planets Mars, Jupiter, and Saturn. This remains to be determined by further investigations, the more so as Ertel (1987) found inconsistencies here.

The only question that cannot be answered even by the new explanatory model concerns the physical forces that create the link between planet and man (fetus). An essential simplification was reached, nevertheless. In Gauquelin's model the development of different planetary temperaments had to be explained by differing physical factors (e.g., by differences in the frequency of waves). According to the new model, the physical medium has the sole function of rendering possible the identification of the planet when it is in a plus zone. No specific effects are transmitted, but merely information concerning the planet's presence. In effect it is sufficient for this purpose to sense the moment of the planet's rise. The instant of culmination can be estimated if the instant of rise is taken into consideration, perhaps in the sense of a subconscious calculation process of the brain.

Nevertheless, it goes without saying that the waves or the radiation that transmit signals have to be discovered first of all. The difficulties associated with this task could lead one to wonder whether there might not be a simpler solution to this problem. Perhaps the rhythm of the planetary movements could become engraved upon one's memory by means of simple visual observation, and in this way eventually become a hereditary trait. But, unfortunately this solution leads nowhere. There is no big difference in the rhythmical sequence from one day to the next, but, in the course of the years, retrogradations, eccentricities of the orbits, and so forth, would cause major irregularities, thus rendering the formation of a learnable rhythm impossible. The planet would have to function as a timer again and again; however, its visible light would not suffice for this purpose, at least not in our time, where only few people continuously observe the stars.

Further Proceedings and Outlook

It is highly unlikely that the prehistoric modes of behavior of man can one day be brought to light sufficiently to permit a reliable assessment of the correctness of the explanatory model presented here. Thus, only the investigation of connections and effects will gradually shed light on the subject. The model would be defeated if it were proven that the planetary effect can also be found with animals. The investigation of an Eastern-Asian sample would also be of interest, preferably of sports champions from China, Japan, and Korea. If no Mars effect were evident here, this could be attributed to a separate development of the western and the far-eastern cultural complexes. This separation would have to have occurred before the time when the planetary gods in Mesopotamia and in the Eastern Mediterranean increased their

influence. If we again take the ability to digest lactose as a characteristic feature for comparison, which Eastern Asian peoples are deficient in, one would expect a negative result with the sports champions here.

Other interesting groups that have not yet been investigated are members of the nobility and aristocracy (dynasties) from the Middle East and Europe. Only very few of them are talented enough to rank among famous politicians or other professional celebrities. But due to their descent, they stand out and are counted among the *élite*. What results are to be expected with such a sample?

Heredity experiments are still of supreme importance for the establishment of a theory. In view of this, an investigation should concentrate on a sample of prominent people whose parents' and childrens' dates of births can be determined. It ought then to be possible to prove the heredity effect with a relatively small number of cases. The large samples, which are necessary if the cases are chosen from the normal population, severely hamper practical work.

We can follow from the Gauquelins' results that the surplus for prominent people is generally up to 5% (i.e., 27% instead of 22.2% is attained for the plus zones). This value can even be as high as 32% for the highest rank of eminence (Mars with sports champions, Ertel, 1988). The corresponding values for the normal population are calculated with reference to the information gained from the three heredity experiments as 0.5%, meaning that if the expected value of the investigated planets in the plus zones is 22.2% (the value can vary slightly due to astrological and demographical reasons), this results in 22.7%.

Under these conditions, a statistically significant result at the 5% level is only attained for an individual planet if the sample contains at least 70,000 cases (= pairings, parent/child). For all five planets together 18,000 cases are necessary on the basis of the results obtained; whereas with prominent people, a sample with 400 cases could possibly suffice. This is probably also the reason why investigations with ordinary people have not had any significant results so far (Dean, 1986; Gauquelin, 1981a). The samples were too small—not taking into consideration the fact that the questionnaires used did not always represent a suitable criterion for selection.

What does it mean, then, if an ordinary mortal has an effective planet in a plus zone? He might then be among those 0.5% of cases that represent a true planetary effect; in all likelihood, however, he belongs to the 22.2% with whom the planet is positioned there, according to statistical laws of chance and does not indicate a corresponding temperament. Even among prominent people, one will occasionally come across cases that appear to flatly contradict the "neo-astrological" interpretations (e.g., the prototype of a Jupiter-temperament, the French novelist, Balzac, does not have Jupiter in a plus zone, whereas the reserved and meditative German composer, Brahms was born with Jupiter rising).

The constitutional factors in human life generally gain greater or lesser importance depending on the inhibiting or promoting influences of the

surrounding conditions. With the planetary effect as it has been demonstrated in the new explanatory model, the effect can completely fail to appear in spite of an apparently existing factor of influence (planet in plus zone). This is the case if the required heredity link is missing or if—figuratively speaking—there is no planetary god among the ancestors. Mars rising or culminating, would be no more than a dummy in such a case. With respect to traditional astrology, this implies that the opportunities for a practical application would be even fewer than is already the case in the opinion of "Neo-Astrology" (Gauquelin, 1979, 1983). The planetary effect would then virtually be only of theoretical research interest.

In the final analysis, how are the chances for scientific explanations to be estimated? Is there still too much absurdity, even after the hypotheses presented here? The previously quoted astronomer George Abell saw severe difficulties: "The effect, to be real, would require new physics beyond anything that science can at present understand" (Abell, Kurtz & Zelen, 1983, p. 82).

The discriminating reader is asked to decide for himself whether this negative attitude is still appropriate or if on the basis of our present scientific view of the world, solutions are not beginning to emerge after all. It is likely that the principle of linking together, as I have tried to do, different functional areas or levels of explanation, that is, physical, cultural-historical, biological, and psychological, will turn out to be fruitful. Another phenomenon, which had for a long time appeared enigmatic, has thus been solved, at least with regard to its manifest conditions, if not yet, however, completely in view of its origin. I am referring to our birds migrating and the astounding efficiency with which they find their way south and back, year after year. We know nowadays that the distances of the routes flown, the flight-direction including major changes in direction, are fixed in their genetic code, but that this program is not static but adaptable to changes in environmental conditions. The migrant birds find their way with the help of mountain ranges, coast lines, riverbeds, and of the position of the sun; during the night they avail themselves of a number of stars close to the pole. With homing pigeons, it has been shown that the sense of smell also plays a role. A particularly important and reliable source of information for the birds is the geomagnetic field of the Earth, which they are able to perceive. By orienting themselves towards the angle of inclination of the field lines to the surface of the Earth they become immune to the pole changings of the magnetic field, which are known to occur regularly. Such complicated problems can only be solved through the joint efforts of many scientists. Let us hope then, that one day we will also succeed in meaningfully integrating the erratic block rolled on the road of science by Michel Gauquelin.

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