

# The Good Science of Astrology: Separating Effects from Artifacts

Ken McRitchie

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**Abstract**—Assumptions of causal mechanism, influence, and credulity are examined with regard to the astrological premise. The Hermetic maxim, which is widely accepted in astrology, suggests that symmetrical processes mathematically associate microcosmic and macrocosmic features and take precedence over causal mechanisms. The astrological literature suggests that influences should be interpreted as interactions within these cosmological symmetries between individuals rather than between planets and individuals. The literature further suggests that effects should be evaluated by inclination or “eminence,” which means that correlations should be ranked or rated by magnitude to objectively separate effects from artifacts. This method has proved to be successful in astrological research and should be universally adopted. In this light, classroom Forer-type tests, which are presumed to support credulity arguments against astrology, are scrutinized. It is questioned how these tests, which are typically composed of selectively assembled non-astrological artifacts found in horoscope columns, or for that matter, any of the leading empirical studies that have claimed to repudiate astrology, can rationally stand up against more objective studies that have tested for eminence effects.

Keywords: astrology, science, belief, theory, research, effects, artifacts, mechanism, influence, credulity, subjective validation, Forer, unfair.

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For much of its long history, astrology has developed as a technology, through empirical observation, adoption of useful techniques, and the discourse of ideas. Like other technologies, it is a discipline designed to meet specific needs. Practicing astrologers today are more concerned with offering quality services to the people they help than they are with the search for universal truths, which has been the thrust of modern science. Although many astrologers believe there is undiscovered science in what they do, most are satisfied to develop the technology without scientific explanation (Nanninga, 1996). For them, astrology works

well within the limits of its applications. As long as the astrological discourse continues, they believe astrology continues to improve. However, many scientists today are unwilling to accept astrology as a technology. Some of the most vocal critics have demanded unambiguous demonstrations that would explain astrology as a universal science. Otherwise, they insist that astrology, regardless of its practical functions, must simply be wrong.

Normally, researchers would try to reverse-engineer an unfamiliar technology to simple essentials in order to discover how it is supposed to work and how it can be tested. Yet there has been no concerted effort to do this with astrology.<sup>1</sup> There are difficulties in measuring the long-term cycles and complex issues that astrology handles. For example, a Saturn cycle lasts 29 years and a Neptune cycle is 165 years. Events that are measured in such long-term cycles seem distinctly at odds with scientific measurements, which are typically in cycles per second. Yet despite these long-term cycles, astrology depends on accurate timing and has a preference for unusual events, both of which have made it hard to test. These extreme requirements bring with them the question of theory, which is whether scientific methods have the capacity to encompass astrological precepts without entering into areas of uncertainty where established scientific beliefs would be questioned. As can be seen by the strange inconsistencies in quantum mechanics for example, the re-examination of existing scientific beliefs can be deeply perplexing. Yet this is the very stuff of inquiry upon which science itself depends.

If we are going to be serious about a scientific inquiry into astrology, then we should learn best if we did not try to view astrology only from the perspective of current scientific conventions. We should instead just relax and allow ourselves to go wherever the astrological premise takes us. If this journey takes a counter-intuitive turn, it does not negate our capacity for rationality and our ability to find the best tools of evaluation. While on this journey, we will need to suspend our disbelief long enough to objectively evaluate effects from artifacts. We should then be willing to rid ourselves of false assumptions that had presented obstacles to our previously unexamined beliefs. To begin with, let us critically examine three assumptions

regarding the astrological premise. These are the assumptions of causal mechanisms, celestial influences, and credulity effects.

### **Causal mechanisms**

An often repeated argument is that science should reject astrology because it does not present a clear mechanism, preferably in terms of classical gravity or electromagnetism, which would provide a cause-and-effect relationship between the celestial environment and the individual. The problem with this argument is that causal models are not necessary to scientifically evaluate consistent patterns of behavior. Astrology does use a model but it not causal. It is based on types of natural symmetries. Firstly, there are the symmetries of the solstices, equinoxes, horizon, meridian, and the phase positions between the planets. These are natural symmetries that define infinite mathematical planes, which divide space. These planes form the familiar astrological frames of reference that are used in Western astrology known as the signs, houses, and planetary aspects. In addition to these symmetries, there is another type of symmetry that is also considered in astrology to be natural.<sup>2</sup>

In standard physics today, the universe is regarded to have no center because the hypothetical Big Bang, which occurred when there was no space or time, had to have started everywhere all at once, and space itself is expanding. Thus there is no concept of a symmetry based on a universal center. This is the current convention, but it is not the only possible way to regard the universe. One consequence of this convention is that it contributes to a limited view of nature whereby effects are understood to be only the result of causal mechanisms.

In astrology, there is a different convention in which the individual is considered to be a point at the center of the universe. An individual may be a person or animal, a physical thing such as a building or ship, or even a non-physical thing such as an event, idea, or condition. There are as many universes as there are individuals. This relativistic view is the basis for creating a natal chart. It may seem counter-intuitive, but it is not unscientific and it has its own consequences. Astrological effects are understood to be symmetrical processes centered on these individual infinite universes.

To understand these symmetrical processes, we need to consider the ancient Hermetic maxim, which is accepted as a main tenet of astrology. This maxim states: "As above, so below; as below, so above." In effect, the inner world of the life of an individual is symmetrically related to the outer world of the celestial environment. The two worlds that are defined by this symmetry, the inner and the outer, are unified by their shared relationships to the astrological frames of reference. These reference frames, plus this inner-outer symmetry, comprise a spacetime worldview that allows for

the evaluation of empirical observations and the postulation of falsifiable hypotheses, the same as for causal mechanisms. These mathematical structures are what provide consistency to astrological observations and they make research possible.

The concept of an inner-outer symmetry should not be too strange to today's thinking because it is not unique to astrology. A familiar example of this symmetry can be seen in a holographic image that has been broken into smaller fragments. The fringe pattern that appears on each small fragment contains an image of the complete whole. Another example is the so-called "self-similarity" found in fractal geometries, in which the same shapes, such as Mandelbrot or Julia sets, are repeated at different scales within the fractal environment. Similarly, in quantum mechanics the conundrum of nonlocal, seemingly non-causal behavior of quantum entanglement could be interpreted as a type of inner-outer symmetry. The macroscopic observer effect in the outer world associates with simultaneous effects within the microscopic inner world of quantum behavior. In each of these examples, features observed in one place are symmetrical with features in other places but are not their causes.

A category of behaviors that could unify these familiar examples has not emerged into the paradigm of normal science, even though in light of the Hermetic maxim they conceptually suggest a type of symmetry that might somehow arise from the natural expansion of space. Given the reliance upon statistical reality and the erosion of conventional cause and effect within the quantum worldview, these unusual behaviors seem to suggest a necessary category of associated natural processes that might be described as *cosmological symmetry*. Simply stated, the behaviors of microcosms accompany the behaviors of their macrocosms and vice versa, albeit in different although complementary ways.

The experience of cosmic symmetry, as interpreted by the Hermetic maxim, does not need to be as obvious as it is in holographic and simple fractal images, nor would it always be easy to find the boundaries that separate the inner from the outer. Also, the great diversity of astrological expressions suggests that the effects of this symmetry could be compounded or negated in different complex combinations. Yet in principle, within a cosmic environment, changes at one boundary should symmetrically and synchronistically complement changes at another boundary. Implicit in this view is that the operational effects of a relationship between the micro and macro worlds would be understood through observation, evaluation, and inference, the same as in any empirical science. Although the implicated complementarity of cosmic symmetry in action might be far less conspicuous than the classical symmetries that we are already familiar with, it could be just as prevalent in nature.

## Celestial influences

Astrology has traditionally been discussed in terms of celestial *influences*. If we take the term influence literally, it suggests that some sort of physical agency reaches across space from the celestial bodies and directly affects the identities and developments of persons and events. To impose the doctrines of classical physics on astrology, we would need to assume that these influences would affect even the non-physical nivities to which astrology traditionally applies, for example charts may be read for transactions and ideas. This line of reasoning immediately requires a demonstration of how physical influence can directly impinge upon non-physical concepts, which leads back to the causal argument.

Yet, if we regard how astrology is developed and used in practice, we do not find any that agency of influence is physically measured at all. The concern is entirely with a large fund of literature that describes what might be most evident at the times when the celestial bodies are in different parts of the sky. This fund of identifications and states has been discussed and updated over centuries of observation and practice. It is knowledge that has been inferred through empirical observations by using the technological practices of astrology.

Some of these inferred identifications are traditionally known as *rulerships*. This is another term that is misleading if interpreted literally. In astrology, the celestial bodies are not considered to exercise willful power or control, as might be implied by the term rulership. A more appropriate modern term for these associated identities and states would be something like *properties*. It is only by their application that these identified properties can become personalized as psychologically willful archetypes. By themselves, properties can denote the powers and characteristics of both matter and physical states, but without humanlike personality and intent, which pertain to archetypes.

This materialistic identification of properties was one of the distinguishing interpretations of nature, developed by early modern science, which did not spread to astrology. Yet, if this materialistic interpretation were to be applied to astrology, we might then say that the individual has the power to recognize and use the astrological properties, which have been identified in relation to the celestial bodies. If we were to simplify these properties to a fundamental level, as is done in science, then the astrological properties might be interpreted as instruments or tools that the individual may psychologically use to adapt to the contingencies of life. For example, the Sun might be interpreted as an instrumental spout, the Moon a cup, Venus a hook, Mars a wedge, and so forth (McRitchie, 2004, 2006). Such an instrumental interpretation is in keeping with the urgings of many of today's astrologers to put the circumstances of life to good use.

Where do astrological properties come from? How do the planetary archetypes "get inside the person"? Those are good

questions and there might not be satisfying answers, but first we must ask how the astrological meanings could have been derived, which takes us away from causality to questions of observation. We have postulated that astrological identifications are based on empirical observations, which are developed through the practice of astrology. This is a reasonable premise in view of the black boxing of technology from workable practices. If a practice is successful, then it can be black boxed and serve as a sort of template without deeper speculations as to what makes it work and what it all means philosophically. In the case of astrological identifications however, we would like to find a way to reverse engineer the black box and quantify whatever might be generally understood about the deeper characteristics of astrology related to some known or immanent natural processes.

If astrology is based on a system of informally developed associations, traditionally referred to as *correspondences*, then there could very well be a system of formal *correlations* for the same information that science could statistically infer. Correlation is a mathematical method available to science to evaluate behaviors where there are no causal mechanistic or instrumentally detectable behaviors available to evaluate by other mathematical means. From a scientific perspective, the archaic astrological references to celestial influences, rulerships, and correspondences do not preclude hypotheses to test astrological theories that use these traditional terms, or other terms such as symmetries, properties, or correlations, which in some respects could, and probably should, begin to replace them. If we look for correlations, then these differences become largely semantic and we can set aside the assumptions we might have attached to the archaic terms. From a scientific perspective, it is not so important to know how celestial bodies come to have astrological properties or how symmetries exist. These are simply things that are empirically observed, like any other properties or behaviors in nature.

Standing back from these understandings for a moment, we can appreciate that in astrology there are many universes to observe. Each individual is a universe. A conscious individual is a point of consciousness at the center of its universe. This is simply what a natal chart represents. Whereas astrology is not essentially concerned with finding physical influences, it is concerned with influences of a more psychological sort, which would be how the universes of different individuals influence one another. How does anyone influence and affect anyone else? This is an epistemological question that is the astrological and psychological equivalent of asking how any material thing can physically influence any other material thing.

To study these influences among different individuals, we need to objectively compare the individuals against something

that they conveniently have in common as a yardstick for correlations. If individuals are universes, then we need to locate the boundaries of an environment that is shared in common by the individual universes as a sort of collective multiverse of super-positioned states. Our sought-after common environment cannot be the microcosmic physical boundary of the individual. Although two individuals can become physically close, they cannot get into each other's skin. This boundary cannot be completely shared by the two individuals, not to mention all individuals of interest. However, the boundary described by the planets that surround individuals is a suitable macrocosm because it is a shared environment.

In ordinary thought, we do not intuitively take the view that each individual stands at an inertial frame of reference and has their own set of planets (including their planetary Sun and Moon) circulating around them. For some people this might be a disorienting thought. Nevertheless, this is a perfectly rational view and it is a key part of the astrological precept. Every individual (whether it is a person, event, etc.) is born or begins with its own configuration of natal planets whereas the transiting planets, which harmonically align with the natal positions during the courses of their orbits, are shared by everyone.

In theory, there could be other cosmological boundaries within an inner-outer continuum that may be studied for correlative effects, for example at the genetic level. However, astrology as a discipline takes advantage of the cosmological boundary comprised of the planets, which is relatively simple, stable, mathematically predictable, and shared. Thus the macrocosm of the planets and the symmetrically related microcosms of individuals can be considered to provide astrology with a sort of Occam's razor, which is to say, the simplest set of structures and references that can be used to provide objective explanations.

Astrology studies what happens, or could happen, when one individual, referred to as the native, identifies and interacts with another individual. Astrologers have characterized this interaction in various ways, which I'll suggest can be modeled through the visualization of a projective psychological process. In this model, the native projects subjective urges, which are characterized by the latent astrological properties associated with their own natal planets. These urges are projected onto other individuals, which I'll refer to as *hosts*, where they can become archetypal attributes. This would occur during transits (or during progressions and other astrological operations) when the moving planets mathematically align with the native's natal positions.

The hosts are the persons, things, events, or circumstances that most accurately embody the planetary characterizations

projected by the native. These characterizations might be perceived by the native as being helpful or hindering, attractive or repulsive, yet acting in some way that involves an identifiable urgent issue or phenomenon. Through interactions with the hosts, for example through conflict resolutions or learning transactions, the native becomes impressed or imprinted with the planetary properties that are interpreted from the hosts. The interpreted properties psychologically "rub off" from one individual to the other and become new components of identity.

Thus, what are referred to as planetary influences do not come directly from the planets but rather are experienced through projective interactions with host individuals. In cases where the native is a non-living or non-material thing, the projections may be made on behalf of the native by interested parties. This projective view is an important clarification because the astrological concept of planetary influence is counter-intuitive unless some sort of model of psychological projection is understood. In astrology, it is individuals who influence one another.

This projective model is amenable to the applied principles of astrology. The influences that occur between a native and its hosts during the course of a projection are experienced within the three natural environments that consist of the signs, houses, and aspects. To simplify things, I'll suggest that this experience involves the three intelligences of sharing values (in the signs), testing beliefs (in the aspects), and finally, developing adaptive skills (in the houses) in accordance with the prograde and retrograde motions of the planets. Both the native and the hosts, I'll further add because it would seem to be consistent, aspire to objectively adapt to the astrological properties and environments of the transiting planets (McRitchie, 2004, 2006).

This model might be viewed by some as an oversimplification for the sake of consistency, but at least it can serve to demonstrate how astrological influence can be better appreciated as a psychological mechanism than a physical mechanism. It offers a conceptual illustration of how individuals might adapt their innate urges to respond to the changing environments of the shared world. It can help to explain how individuals influence one another as they develop the skills necessary to satisfy their own social evolution.

### **Credulity effects**

Because it is based on the natal chart, astrology is highly individualized, yet some people argue that chart interpretations appear to work only because they contain general wisdom that is subjectively evaluated by credulous people. Subjective validation, also known as the Forer effect, or the Barnum effect, is the tendency for people to regard an interpretation as accurate when it appears to be personally tailored for them, even though the interpretation is so vague that it could apply to a wide range of people.

This credulity view of astrology arises from the fact that normal supportive conversation contains bits of wisdom and helpful warnings that are generally positive, true, and apply to nearly everyone. People desire to hear such hopeful talk often in their daily lives because it fulfills a need. It helps them to visualize how their lives fit into the larger social fabric. People tend to remember these friendly words and let themselves be affected by them.

There is no doubt that by its supportive role, astrological consultation contains some of the same bits of non-astrological wisdom, warnings, and help that by necessity are found in normal supportive conversations. Numerous replicated studies have assembled some of these general bits of wisdom from horoscope readings to demonstrate a subjective validation effect with classroom participants (Forer, 1949). The interesting result is that there is now a widely held impression that such tests have repeatedly falsified astrology, but is this a valid test of astrology?

Normally, science takes pains to exclude unrelated artifacts from the test data, but in the case of these Forer effect tests, the opposite has occurred. It is the generally positive and true artifacts selected from astrological readings that are tested. The same is true for tests in which participants are asked to evaluate how well a horoscope interpretation compares to them where the interpretation (usually the same one supplied to all participants) has been chosen to be of especially poor quality and contains many of these artifacts. Non-astrological artifacts should not be allowed to overshadow and obscure the actual astrological content of natal chart interpretations, which, as can be seen in any astrology text, is different for different astrological features.

To separate and use the astrological factors and exclude the non-astrological artifacts found in many astrology interpretations requires a conscientious test design. A good test design should measure how astrological factors might associate with effects on a scale of magnitudes, known in astrology research as “eminence.” As far back as 1605, Francis Bacon, a leader in early modern science, intimated such an evaluation of effects when he wrote, “The last rule (which has always been held by the wiser astrologers) is that there is no fatal necessity in the stars; but that they rather incline than compel.” This should suggest to us that astrological data be ranked or rated by weight to show the tendencies or “inclinations” of correlated effects. In contrast, if we design a strictly deterministic or “fatal necessity” approach, we should anticipate relatively random results that would require very large sample sizes to detect even small effects.

For example, in double-blind studies the level of confidence in genuine versus non-genuine evaluations of distinctively

different individuals can be ranked. This can be done in studies where astrologers rank several pairs of self-assessment inventories of divergent individuals, one in each pair of which is genuine, against the corresponding natal chart. Another approach might be to have test participants rate the portions of written astrological profiles based on two divergent natal charts, one of which is their own, against themselves. A special requirement for this latter test would be that the sample charts would need to have the same Sun sign, because Sun sign descriptions are widely known. An effect in each case would be shown by correlating the eminence of selection.

In statistical studies, quantifiable rankings should reflect the relative magnitudes of measurable outcomes in evaluations of specific astrological features, which would point to an eminence effect toward the greater magnitudes. For example, this method has been used to study the rank of individuals by eminence in sports correlated to Mars placement (Ertel, 1988) and the eminence by reddishness of hair color correlated to Mars placement (Hill and Thompson, 1988).

The use of ranking and rating methods greatly elevates the sensitivity of correlation testing, even for small effect sizes. Although small effect sizes might be due to chance fluctuations or unknown artifacts, these possibilities rapidly diminish with each successive rank that goes in the predicted direction. The example studies just mentioned, for sports achievement and reddishness of hair color, which were properly designed with ranking methods, have demonstrated statistically significant eminence effects in the predicted direction in peer reviewed studies. Because each of these tests have been successfully replicated numerous times, and have been publicly discussed for over twenty years without refutation, they can be considered to demonstrate evidence of astrological effects.<sup>3</sup> More tests of different astrological theories, modeled on these exemplary tests, need to be performed to ascertain what current science could support.

The potential for subjective validation effects, as well as the potential for selection bias or other non-astrological artifacts, strongly argues in favor of imposing objective methods that would minimize these interferences in all astrological research. Yet, despite the continuing emphasis placed on these effects by some critics, the use of astrological ranking and rating methods has yet to be documented in classroom Forer-type tests that are presumed to repudiate astrology. Moreover, in the leading research studies that have made claims against astrological effects, these methods have been unaccountably absent (e.g. Nanninga, 1996; Benski et al, 1996; Dean and Kelly, 2003)<sup>4</sup> or obscured (e.g. Carlson, 1985).

Weighted methods that separate effects from artifacts should be applied in all astrological research, or reasons given for why they are not. Otherwise, there is no scientific assurance that the experiments have not been biased or that the criteria

for success have been so narrowly defined that the result could be interpreted as supporting the astrological hypothesis that “the stars do *not* compel.”

## Notes

1. The development of astrology as a technology has tended to use qualitative rather than quantitative methods. To advance this type of research, author Bernadette Brady has suggested more rigorous methods based on case studies, positive coding, grounded theory, and pattern matching (Brady, 2003).
2. Aspects, when considered as measurements of any angular distance between the planets, can generate multitudes of harmonic patterns. A special discipline that some researchers call *cosmic cybernetics* compares the structures and frequencies of these patterns with statistical evaluations of data, including economic indexes. This concept, which harkens back to 17th century astrologer Johannes Kepler, has been increasingly developed through computer modeling by researchers John Addey, Theodor Landscheidt, David Cochrane, and Richard Schulz. In exploratory applications, this approach has found unexpected correlations. Schulz’s trend fitting application, the TAO Oscillator program, has a proven success record for stock market forecasting (Snow, 2010).
3. The much discussed “Mars effect” and other planetary effects discovered by the late Michel Gauquelin have been of major importance in astrological research. Gauquelin’s studies yielded significant correlations between birth frequencies of eminent professionals (writers, musicians, painters, physicians, scientists, etc.) and the positions of Mars, Jupiter, Saturn, and the Moon at their birth times. The “effect-sensitive” planetary positions are rise and culmination. Although Gauquelin did not test these planetary effects with weighted scales of rank, he did postulate that such methods should demonstrate a more pronounced effect (Gauquelin, 1955, 1988). As much as Gauquelin’s pioneering studies are deserving of recognition, I wish to emphasize the more powerful methods that rank traits and behavior on a scale. The application of these ranking and rating methods (Ertel, 1988, 1996) has significantly improved the detection of the Mars effect in the data previously collected by Gauquelin and other researchers (e.g. Benski et al, 1996), as Gauquelin had predicted.
4. Dean and Kelly do not cite the source of their “time twins” data, apparently a government-funded survey.

This study, which models a highly deterministic “fatal necessity” approach to astrology, without ranking or rating methods, is recounted in little more than two paragraphs in their lengthy “Is Astrology Relevant to Consciousness and Psi?” article. Requests to disclose the source from both Dean and Kelly through personal correspondences have been denied.

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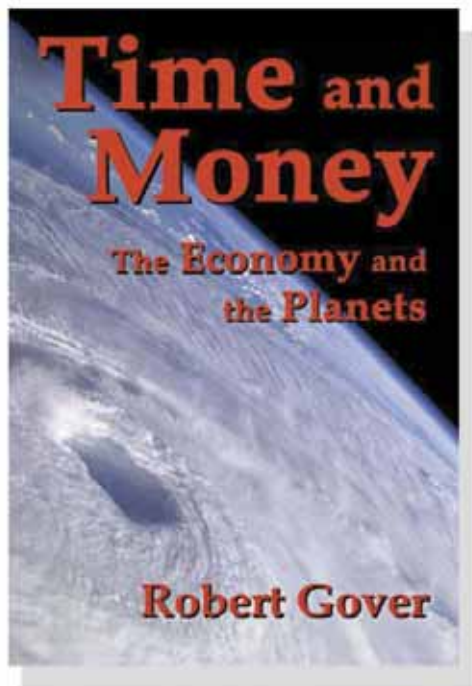
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### Biography

**Ken McRitchie** is a Canadian poet, astrologer, amateur naturalist, and technical writer. He is the one-time editor (1985-89) of *Above & Below: Journal of Astrological Studies*, and is the author of *Environmental Cosmology: Principles and Theory of Natal Astrology*. His website is [www.theoryofastrology.com](http://www.theoryofastrology.com). Email [ken@theoryofastrology.com](mailto:ken@theoryofastrology.com).



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