

Astrology as an Illusion

Prepared by the North Texas Skeptics

Astrology is almost certainly the oldest and most widespread of all pseudosciences. Its origins can be traced back to the first half of the Hammurabi dynasty in Babylonia about 3,500 years ago.

In its modern form astrology asserts that the positions of the solar planets at the time an individual is born are somehow correlated with his or her personality, activities, preferences, and even major life events (accidents, marriages, divorces, etc.). There is no general agreement among astrologers as to how or why this can be. Nor is there agreement as to precisely which planetary positions lead to which specific traits or experiences. It is almost certain that no two astrologers will "cast" an individual's horoscope with precisely the same result. The predictions that do result are often so vague that verification is impossible, anyway.

Astrology is best understood by learning how it began. Like most urban, agricultural peoples, the Babylonians had a pantheon of many gods. They also had a well-developed science of observational astronomy, which served the highly utilitarian purpose of providing a calendar, times to plant and to harvest, times of religious festivals, etc. In this observational scheme each planet was important, and the priests whose task it was to make the observations named the planets for the gods in their pantheon -- Marduk, Ishtar, Nergal, etc. By about 1000 B.C. there was an extensive Babylonian literature of "planetary omens." Since Nergal (Mars) was the god of war, a summer in which Nergal shone down brightly from the sky was a good time to wage war (or a time in which risk of war was great). Since Ishtar (Venus) was the goddess of love, a spring night in which Ishtar shone high in the West after sunset was a good time to make love.

About 600 B.C. the Babylonians devised the 12-sign zodiac: markers in the sky along the path of the sun, moon, and planets, which roughly correspond to the months of the year. The oldest horoscope that has been discovered dates to April 29, 410 B.C. A horoscope is simply a crude chart which indicates the directions in which the various planets lie, relative to the zodiac, at the time of a person's birth. During the classical era dominated by, first, Greece, and then, Rome, Babylonian astrologers (called Chaldeans) set up shop in most large urban areas throughout the civilized world. Greek astronomers scoffed at the Chaldean astrology as absurd, but the Greek public embraced astrology as lovingly as they had embraced many other bizarre or barbaric cults. Later, the Roman statesman Marcus Tullius Cicero wrote, in 44 B.C., a devastating critique of these astrologers, which is still worth reading today. A typical passage:

"What utter madness in these astrologers, in considering the effect of the vast, slow movements and change in the heavens, to assume that wind and rain have no effect at birth!"

With the coming of Christianity, the Chaldeans had hard going, since the early Christians (like the Hebrews before them) were hostile to other gods and pagan religions. Of course, there was no way to disguise the essentially religious underpinning of astrology. During the early Middle Ages astrology nearly became extinct in Europe but was kept alive elsewhere by Islamic scholars.

The Crusades brought astrology back to Europe where it co-existed uneasily with Christianity until the dawn of the age of science. The explosive growth of scientific astronomy from 1600 A.D. paralleled an explosive decline in the fortunes of astrology. By 1900 a French encyclopedia accurately described astrology as a vanishing cult with no young adherents.

Astrology made the strongest comeback in all its history after World War I, when British astrologer R.H. Naylor invented the daily newspaper astrology column. The paradoxical result is that the heyday of astrology was not during the benighted Middle Ages, when the average person was sunk deep in ignorance and superstition, but rather in the 20th Century, when most citizens presumably know the basic facts of astronomy and are aware that the planets are worlds

similar to the earth rather than god-fires in the sky.

Thus, at least 90% of all Americans under age 30 know their sun-sign. There are more than 10,000 practicing astrologers in the U.S., and Americans spend more than \$200 million annually consulting astrologers. (In the U.S. there are only about 3,000 professional astronomers, and only about \$100 million is spent on basic research in astronomy -- except in space probes.)

Scientists have been quite baffled by the growing popularity of astrology, and a number of them have taken the time to carry out careful studies to see if there is any actual correlation between planetary positions at birth and any attribute of the individual in later life. No statistically valid study has ever shown any connection that would give any validity to any astrological concept -- no matter how vaguely that concept has been worded! There is no question about the simple fact that astrology does not work.

Nor is there any reason why it should work. In order to go from an individual's horoscope to a specific prediction of what is in store for that individual, the astrologer must consult a table. This table correlates features of the horoscope (positions of the planets) with individual attributes (intelligence, affection, physical strength, good health, etc.). Where did this table come from? [Note that it is such a table and not the horoscope itself that is the "guts" of astrology.] This table simply is made up by whoever wrote the particular manual of astrology being used. This is why two astrologers can arrive at different (even contradictory) predictions from a single horoscope. There are numerous quite different "astrological systems"; all different, all arbitrary, and all completely disconnected from reality.

This arbitrariness is a characteristic of all pseudosciences, and results because the origins of pseudosciences lie not in observation of nature, but in accidental historical conventions of human culture. For example, the ancients happened to call the second planet from the sun Venus and the fifth planet from the sun Jupiter. If they had done it the other way, it would not have made the slightest difference to astronomy. Venus would then be the big planet with colorful belts and a red spot, while Jupiter would be a hellishly hot planet about the size of the earth. But astrology would then be totally different, because astrology depends entirely on the characteristics associated with the name, not the actual planet! Jupiter, chief of the gods, is a leader of men. Venus, goddess of love, rules the emotions. Changing the arbitrary names would leave reality unaffected but astrology, horoscopes, etc., would become totally different. It is interesting to note that the Maya considered Venus the lord of death.

Another way to see this is to consider the zodiac. The Babylonians, with their interest in the calendar, naturally had 12 zodiacal signs. But again this is arbitrary. Other cultures used 28, for instance the Chinese and Hindus. The Toltec cultures of Middle America used 20. The Babylonians themselves used from 6 to 18 before settling on the "traditional" 12. Again the arbitrary choice of number of signs (not to mention names of signs) is obvious. As for the names, if a given group of stars were called "Aries, the Ram," this arbitrarily chosen name then predetermined the "interpretation" in the tables... for since Rams are aggressive and assertive, so will be people born with the sun (or something) in Aries. How one distinguishes the aggressiveness of the Ram from that of the goat Capricorn or the scorpion Scorpio is another problem! If these groups of stars had been named "The Chair", "The Writing Desk", and "The Castle", interpretations would again be unrecognizably different.

As another example, consider the so-called "house system" of astrology. In order to provide more tables with more characteristics to be looked up, astrological lore has put forward many different (perhaps as many as 50) house systems. These are arbitrary divisions of the sky in sectors, vaguely like orange slices. The various systems differ in how wide these sectors are, how many sectors there are, and how they are oriented in the sky relative to the ecliptic, the horizon or the equator. There are two main house division systems in use by modern astrologers, the Koch and the Placidian. It is hilarious that in neither of these two systems does anyone born above 66.5 degrees north latitude even have a horoscope! The stars have nothing to say about 12 million people!

Another hilarious aspect of astrology is due to the astronomical phenomenon known as the precession of the equinoxes. This was known to Greek astronomers by 150 B.C. and may have been known much earlier. It completely destroys the framework of astrology. The problem is that the early astrologers, for whom the sun rose in Aries at the spring equinox, defined the sign of Aries to be centered on the point of the spring equinox. But as the ancient Greeks knew, the equinox swings in a great circle, taking about 26,000 years to complete its cycle. Thus, today, the sign of Aries is nowhere near

the constellation Aries! This detachment of the meaning of the symbol from the random scatter of stars whose arbitrary name originally gave the symbol its name and significance is ludicrous even to many astrologers, who thus disagree with all other astrologers by keeping the sign fixed to the constellation instead of letting it move with the equinoxes!

The moral is that when one has a system based on randomness and arbitrary convention, a shuffle or mixup of the system is undetectable. Astrology is just a random-word generation, and mixing up the procedure by which the random word is generated is not detectable, since the output words remain random with any genuine further mixup. The puzzle is how anyone could not be aware of this randomness, of the mindless conventions that crucially determine the nature of astrology's "predictions".

The question of why people believe in astrology is more interesting than the details of the horoscope. Psychologists have shown that customers are satisfied with astrological predictions as long as the procedures are individualized in some rather vague way. For example, if the astrologer asks for a great deal of personal information before providing the prediction, the individual is much more satisfied with it than if the astrologer asks few questions (and provides the same prediction). The predictions themselves are nearly always very vague and universal in applicability; they might accurately describe nearly anyone.

Astrology relies on an illusion in thinking called personal validation. This depends on the selective nature of memory. If we believe something is so, we tend to remember the events that support it, and forget those which don't. The result is a growing feeling of conviction. We remember the part of the spiel that fits us and forget about the parts which don't. Influencing people this way is called cold reading, and there is a considerable psychological literature on the subject.

Modern science has undercut the basis for astrology at every turn. The individual is formed at conception; not at birth. The gravitational force exerted on a newborn baby by the earth is more than a million times greater than that of any celestial object. The tidal force exerted by the mother and the hospital building is, likewise, a million times greater than that of any celestial body. The electromagnetic radiation falling on the baby from the sun or room lights is a million times more intense than that from any other celestial object. Changes in environment during early development have much greater effects upon the developing person than the events at the time of birth. Also, the time of birth can be altered, to some extent, by the actions of a physician. What are the astrological implications of a caesarean section or forced delivery? Another important point to make is the established role of genes in a person's nature. Suppose two unrelated persons are born at the same time in the same hospital. Will the astrological forces outweigh the genetic ones? The science of genetics has shown the answer to be 'no'. There is nothing whatsoever in all of nature as we have explored it to date, or in any of our other experience that gives any credibility to any astrological idea.

Nevertheless, millions of Americans, from Ronald Reagan to many minimum-wage earners, continue to regulate their daily schedules (to some extent) in accord with the arbitrary and potentially harmful advice. Why? It is essential to remember that a belief doesn't have to be true to be useful. Astrology has flourished because it is a framework within which people can discuss and look for meaning in their lives. Viewed as a social support system, astrology is somewhere between a religion and a psychotherapy.

[This fact sheet is substantially based on material prepared by Prof. Rory Coker of the University of Texas at Austin, in cooperation with the Austin Society to Oppose Pseudoscience.]

Suggested Reading

- Abell, G.O. and Barry Singer (Eds.). 1981. *Science and the Paranormal*. New York: Scribner's. See articles "Astrology" and "Moon Madness", both by Abell.
- Carlson, Shawn, "A double-blind test of astrology" *Nature*, Dec. 5, 1985. 318: 419.
- Cohen, D. *Myths of the Space Age*. 1967. New York: Dodd, Mead. Chapter II.
- Culver, Roger B. and Phillip A. Ianna. *Astrology: True or False? A Scientific Investigation*. 1988. Prometheus Books.
- Dean, G. "Does astrology need to be true? Part I: A look at the real thing." *The Skeptical Inquirer*, Winter 1986-87, p. 169.
- Dean, G., "Does astrology need to be true? Part II: The answer is no," *The Skeptical Inquirer*, Spring, 1987, p. 257.
- Gauquelin, Michel, *Dreams and Illusions of Astrology*. 1979. Prometheus Books.
- Hyman, Ray 1955. "Cold reading: how to convince strangers that you know all about them." *The Zetetic*,

Spring/Summer , p. 19.

Lindsay, J. 1971. The Origins of Astrology. Barnes and Noble.

REALLity Checklist -- 1996 in Review

by David Bloomberg

"News is a consumer product, like sausage. Be careful what you swallow." -- Unk.

Like any other year, 1996 had its ups and downs. Sometimes the media did a great job, and sometimes they needed to go back to the basics. When the media wasn't messing around, different portions of our government were. Here are some of the highlights and lowlights.

*Best Expose Award

Dateline NBC has recaptured this award for 1996 for their features of two great segments in February (they also won in 1993 and 1994, but Frontline barely beat them in 1995). One featured the Quadro Tracker, essentially a dowsing rod that the manufacturer claimed could find everything from drugs and guns to golf balls.

Quadro sold over 1,000 of these devices to schools and police departments, with price tags from \$400 to \$8,000! When the devices were scientifically studied and found to be worthless, the vice president of the company merely replied that the scientists didn't know what they're doing and needed to "open their mind." He then launched into a babble of meaningless pseudo-scientific nonsense.

James "The Amazing" Randi appeared to show what the device really was, and also appeared as the focus of the second piece later that month. During that second interview, Randi uttered the phrase that you will now find on our masthead. The reporter asked the standard question of just what is the problem with people believing things not supported by science. Isn't it just good-natured fun? He replied, "It's a very dangerous thing to believe in nonsense."

Several of Randi's older exposes were mentioned, such as that of "faith healer" Peter Popoff and his help in preparing Johnny Carson for Uri Geller's appearance. I think these need mentioning every so often, to remind people who may have forgotten or who were too young to remember.

As part of this segment (and part of what earned this "Best Expose Award" from me), Dateline sent out staffers with hidden cameras to random "psychics." They found that (as Bruce Walstad discussed at our meeting this month) the predictions they got tended to be so general, they can't be wrong, such as, "You feel comfortable with it all, and you don't feel comfortable with it." In one case, they sent three staffers to the same tarot card reader, and were told all three times that she found "negativity" which required them to buy various items from her for a large sum of money (again, just as Walstad discussed).

The most impressive part of this expose, as far as the public should be concerned, was when they took Randi to a college class. Several weeks beforehand, they had asked students to submit specific data about their birth date, time, location, etc. Randi came in and was introduced as an astrology expert, and handed out what he said were individualized horoscopes. The students all rated the accuracy quite highly (8 of 12 ranked it at 4 out of 5; the other 4 ranked it at 5). Then Randi had them hand the horoscopes to the person behind them. When they started reading the other horoscopes, they found that all of them were exactly the same, with only a few sentences, taken out of "real" horoscopes, in different order. Unfortunately, the True Believers in the room weren't convinced.

The story ended on this note. Randi said that people's willingness to believe is far greater than his ability to persuade, but that won't stop him from trying.

*Worst Research by the National Media Award

In an ironic twist, NBC managed to win this award as well as the one above. On Feb. 25, NBC showed an anti-science program called The Mysterious Origins of Man, hosted by Charlton Heston.

Mysterious Origins purported to put forth science, while only putting forth creationist nonsense. Indeed, it was so bad that it even got a half-page story in Science, one of the top scientific journals in the world.

This show even put forth stuff that most creationists have agreed is bunk! The show claimed to present good evidence from "a new breed of scientific investigators." In fact, all we saw was old garbage presented by creationists. As one paleontologist said, "this is just reviving stuff that has already been debunked." Here's an idea: Maybe we can get Dateline to do an expose on the entertainment division!

*Worst Research by the Local Media Award

The Illinois Times, an independent weekly that has, in the past, written good articles on topics such as creationism, really blew it big time this year when they published an article supporting the claims of once-respected virologist Peter Duesberg, who says it's not HIV, but rather bad living, that causes AIDS.

Duesberg's claims have been thoroughly debunked by the scientific community. However, Duesberg uses this to claim a conspiracy against him and managed to convince at least Mark Anderson, who wrote this article originally for the Springfield (Massachusetts) Advocate . Unfortunately, the Times seems to think that anything on AlterNet must be good to print.

As I noted when this article was originally printed, the Illinois Times did a great disservice to its readers by publishing this nonsense. As AIDS spreads, do they really want to spread the myth that it's not communicable?

*Worst Political Move Award

This award has to go the Natural Law Party -- a political party for disciples of the Mahareshi Mahesh Yogi and practitioners or Transcendental Meditation who believe they can solve all of the country's problems by meditating. These guys held a press conference on October 22 to show off their "Yogic flying." (Anybody who has actually seen these people "fly" know that they are doing no such thing -- they're hopping around on a mat with their legs crossed.)

While they try to hide their nonsense in carefully-worded statements about how they plan to solve all our problems, this press conference showed them for who they really are. Their worst claims are that their methods are scientifically proven. They even call their hopping and meditating "scientific technology of consciousness." But when they bounced around at the press conference, it was plain for all to see that they would perhaps be a better fit in a rubber room.

*Worst Coverage Award

We all remember the news splash when it was revealed that Hillary Clinton talked to dead people. The vast majority of the media ran stories about the claims that Hillary held "seances" and Hillary's counter-claims that it was just part of a psychological exercise and she didn't really think she was talking to the dead. Some talked about how her generation was into that "New Age" thing, so it wouldn't hurt her husband's chance of re-election (and it obviously didn't). But WICS Channel 20, ever at the forefront of newscasting, took a different (might I be so bold as to say "dumber") angle. They opened their news on that June day with the Hillary story, and then went to an interview with Springfield "psychic" Marla, shown in full regalia with tarot cards placed carefully in front of her. She helpfully told us about how it had been her experience that one cannot talk to the dead immediately, but must go through several sessions of seances to get to the point at which Hillary was said to be.

For this incredibly stupid piece of non-journalism, I have given this award to the station that calls itself "NewsChannel 20." In case you were wondering, there was, of course, no skeptical viewpoint given -- not even a hint that perhaps this Marla might not be basing her little discussion on facts and evidence. Her bit was aired as if they had been talking to an aerospace expert after a plane crash. Did anybody really care what this "psychic" thought about Hillary's doings?

Next, I suppose we'll be seeing an astrologer giving the weather forecast (okay, some would say it'll be just as accurate). When I hear people talking about the dumbing-down of America, this has got to be what they mean.

Upcoming Events

May 9 or 10 (tentative)

REALL meeting featuring Michael Shermer, founder and director of the Skeptics Society (details to be announced).
May 17-18

Center for Inquiry Workshop, "Secrets of the Supernatural," Ramada Plaza Hotel O'Hare, Chicago. 1-800-634-1610 for registration and information.

From the Editor

With the arrival of the Hale-Bopp comet, eclipse of the moon, the ongoing debate about the rock from Mars [identical experiments have come to opposite conclusions (Chicago Tribune, March 20, p. 5)], and the apparent increasing popularity of astrology and psychics, it's an exciting time for space and sky observers. If only Carl Sagan could still be here to see all this....

This month, we feature another article by the North Texas Skeptics, this one on astrology, perhaps one of the most beloved -- and detested -- of the pseudosciences. The article should help provide you with clear, concise arguments against the assertions of astrology.

Enjoy this issue, and I hope to see you at the April REALL meeting featuring author and journalist Doug Pokorski talking about the media. His talk should be a good follow-up to the excellent (and witty) presentation about scams by detective (and magician) Bruce Walstad in March.

From the Chairman

In case you were wondering why you received a 12-page issue last month, instead of our normal eight pages, well, we forgot to mention that it was our Special Fourth Anniversary Issue! We're already working on a variety of things for REALL's fifth anniversary, but I'm not yet at liberty to divulge them.

And for our Special Fourth Anniversary Meeting, I'd like to thank Bruce Walstad for drawing another standing room only crowd. I saw a lot of new faces there, including Sangamon County Sheriff Neil Williamson, who also brought along members of his crime prevention unit! Since getting information to the public is one of the missions of REALL, I must say that I was very happy to see such a large public turnout. If you missed this meeting, you missed a great one!

On that note, make sure you don't miss our next meeting! As the first in a series of presentations dealing with the media, Doug Pokorski will be speaking on Tuesday, April Fool's Day, at 7 p.m. in the Lincoln Library (no, it's not a joke, I promise). Doug is an author and journalist for the State Journal-Register. He will be discussing critical thinking and skepticism in the media as it relates to the paranormal and other sorts of news. He will also talk about why the print media covers stories the way they do. I think this will be a very interesting presentation and should stimulate some good discussion as well. Like I said, you don't want to miss this one!

And we're already hard at work on the May meeting, which will probably feature Skeptics Society founder and director, Michael Shermer, who will be in the area on a book tour for his soon-to-be-released *Why People Believe Weird Things*. This meeting will likely be on Friday, May 9, or Saturday, May 10, rather than our regular first Tuesday date, in order to accommodate his schedule. Also, our June meeting will be off our regular schedule as the Lincoln Library needs the room for their annual book sale. More on both of these as we get things settled!

As I noted last month, just a reminder that many of us have memberships that expire(d) in the February/March timeframe, so please check your mailing label. I hope we continue to get your support!

Masthead Information
Electronic Version

If you like what you see, please help us continue by sending in a subscription. See the end of newsletter for details.
Purpose

The Rational Examination Association of Lincoln Land (REALL) is a non-profit educational and scientific organization. It is dedicated to the development of rational thinking and the application of the scientific method toward claims of the paranormal and fringe-science phenomena.

REALL shall conduct research, convene meetings, publish a newsletter, and disseminate information to its members and the general public. Its primary geographic region of coverage is central Illinois.

REALL subscribes to the premise that the scientific method is the most reliable and self-correcting system for obtaining knowledge about the world and universe. REALL not not reject paranormal claims on a priori grounds, but rather is committed to objective, though critical, inquiry.

The REALL News is its official newsletter.

Membership information is provided elsewhere in this newsletter.

Board of Directors: Chairman, David Bloomberg; Assistant Chairman, Prof. Ron Larkin; Secretary-Treasurer, Kevin Brown; Newsletter Editor, Bob Ladendorf; At-Large Members, Prof. Steve Egger, Wally Hartshorn, and Frank Mazo.

Editorial Board: Bob Ladendorf (Newsletter Editor), David Bloomberg, (one vacancy).

REALL
P.O. Box 20302
Springfield, IL 62708

Unless stated otherwise, permission is granted to other skeptic organizations to reprint articles from The REALL News as long as proper credit is given. REALL also requests that you send copies of your newsletters that reprint our articles to the above address.

The views expressed in these articles are the views of the individual authors and do not necessarily represent the views of REALL.

REALL Contacts

David Bloomberg, Chairman: chairman@reall.org
Bob Ladendorf, Editor: editor@reall.org

A Nod to Our Patrons

REALL would like to thank our patron members. Through their extra generosity, REALL is able to continue to grow as a force for critical thinking in Central Illinois. Patron members are those giving \$50 or more. To become a patron of REALL, please see the membership form. Patron members are:

David Bloomberg, Springfield Rev. Charles Hanson, Springfield
David Brown, Danville Wally Hartshorn, Springfield
Alan Burge, D.D.S., Morton Bob Ladendorf, Springfield
William Day, Springfield John Lockard, Jr., Urbana
David Gehrig, Springfield Edward Staehlin, Park Forest