

Dualism of Scientific Knowledge and Astrological Interpretations

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Abstract: *The most important characteristic of contemporary society is a continuous social change. Thanks to the information technology revolution, the developed countries are abandoning the concept of industrialization and turning to service activities. Contemporary society is transforming into a postmodern one, which is less oriented to believe in scientific explanations. The trichotomy of religious, incompetent and scientific knowledge on the one hand, as opposed to pseudoscience on the other, is reaching the peak of its institutional struggles in the present time. Where is the line between the truth and the lies, when the axiom turns into a dogma, and where the difference between the man and his illusion disappears? We shall try to answer with this paper, whether astrological interpretations are based on cognitive values of a contemporary society. We shall oppose the methodology of scientific knowledge, astrological interpretations and human psychology, in an attempt to define astrology as a science, pseudoscience or entertainment.*

Keywords: science, pseudoscience, religious knowledge, lay knowledge, scientific knowledge, astrology, human psychology, the way of truth

1. Introduction

Science is considered as a developmental system of a true knowledge, i.e. facts, theorems, hypotheses, theories and laws of the world, which are acquired by applying certain methods, techniques and instruments, starting from a certain theory and the worldview. Each science encompasses a number of theories, which simplify and interpret the research results in their respective field. Science therefore represents a more general concept than a theory, which is its constituent. It should be noted that a scientific knowledge was preceded by religious and a common sense forms of knowledge that still exist today. Religious knowledge originates in human practice and, according to the theologians, do not originate from an experience, but is the fruit of divine revelation. Religious truths or dogmas are communicated to the elected ones and are considered eternal and immutable. This means that religious dogmas, as well as a scientific knowledge, can be exhibited in some order and prove in some way, but they are still not a scientific knowledge. Its accuracy cannot be objectively verified, it is mediatory, and it can either be believed or not believed. Common sense or a laity knowledge of a human is a knowledge of a person from an immediate practice, which the one has acquired in the process of the one's life experience. The insufficiency of a laity knowledge is that they are unsettled, untested, unreliable and full of prejudice. Its successful application is limited by one-sidedness, which comes from the fact that it is derived from a limited practice of individuals and social groups and are not sufficiently theoretically generalized and proven. Due to lack of a common sense knowledge, our activity must be guided by a higher forms of knowledge, namely scientific knowledge. Scientific knowledge is characterized by objective truthfulness, and thus a high degree of successful application in practice, anticipation and change in the course of events. In order to achieve this, each science has a specific subject of its study. By subjects, which constitute particular fields of

reality or types of phenomena, science is divided into five large groups: mathematical, natural, psychological, social and philosophical sciences. Depending on its subject, each science has its own specific methods to reach the truth. By general method, scientific work is characterized by application of precise, accurate and comprehensible language, which is neither the language of stylistic figures characteristic to literature nor the language used to express religious dogmas. In science, every single word has a precise meaning, from which scientific terms originate, i.e. the professional names of a particular objects and phenomena in science. Every scientific truth must be objectively verifiable and theoretically proven, which may not be the case with the other types of knowledge. As soon as the new facts are discovered or proven, which correct or supplement the truths hitherto valid, the scientist is obliged to adopt them, fulfilling the scientific principle of criticism. There are no isolated systems in science. Each fact gets its explanation only in relation to the other elements of scientific knowledge, thus expressing its causality. It can be concluded therefore, that one of the main features of science is dispersion of its contents. Therefore, skepticism and doubt are the main drivers of a development, not belief or belief in someone or something. Opposite to science is pseudoscience with its knowledge or beliefs, which are presented as scientific, but which are not supported by evidence and cannot be reliably verified. The main features of pseudoscience are the use of unclear - vague, contradictory or unprovable attitudes, as well as the lack of systematic processes for the rational development of theories. Pseudoscience is often portrayed as a method of justifying, defending, or preserving error. A set of knowledge can be called a pseudoscience if it is presented in accordance with the norms of scientific research, but in practice, it cannot comply with those norms: 1. Use of an accurate and understandable language, 2. Accuracy in establishing the truth about the world, which means that every scientific truth must be objective verifiable and theoretically proven, 3. Possibility to predict the future

course of events on the basis of scientific knowledge and direct human practice, 4. Application of scientific methods, the orderliness is established, which is an important element of scientific work.

2. Basic Methods of Cognition

The basic method of cognition is considered the methods of acquiring and checking the truth of cognition. Depending on whether the basic source of knowledge is in sensory perception or in a reason, we make a difference between rationalist and empirical methods. Given the differences in understanding of cognition as a mechanical or dialectical process, we make a difference between mechanistic (metaphysical) and dialectical methods of cognition. We must also add an axiomatic and statistical method to this categorization. Each of these methods in a certain way understands the objects of cognition - knowledge, sources and instruments, as well as the criteria of truthfulness of knowledge. At the beginning, the human cognition was related to sensory impressions and perceptions, but over the time, man realized that not everything is as it seems to be to the senses (eye, ear, and taste) and began to believe more and more in his opinion, i.e. reason. In this way, rationalism and the **rationalist method of cognition** gradually emerge. The one-sidedness of the rationalist method is in the fact that human cognition does not originate only from the reason, but originates from experience and in its development relies on various forms of experience, starting from observation to complex scientific experiments. The one-sidedness afore stated of the rationalist method, has led to many philosophical and scientific mistakes, due to the exclusive use of pure thought. Thus, the ancient philosopher Democritus (c. 460 - 370 BC), the founder of atomism, relying on pure rational knowledge, claimed that atoms are simple, indivisible and unchangeable elements of the world, which is not true. The ancient philosopher Pythagoras (c. 570 - 500 BC), as opposed to rationalism, he set the principle of **empirical (experiential) knowledge**: "Everything is the way as it seems to anybody." A somewhat more critical empirical view is taken by the English empiricist John Locke (1632-1704), who set the principle: "nothing is in the mind that was not previously experienced by the senses", to which the German rationalist Wilhelm Leibniz (1646-1716) added "except the reason itself". Therefore, as many different experiences, as many different types of empiricism, such as: 1. Sensualist, i.e. sensory empiricism, 2. Pragmatist, i.e. empiric that considers valuable only those knowledge that can be usefully used in human practical activity. Pragmatist empiricism was turned into instrumentalist empiricism by the American philosopher John Dewey (1859 - 1952), who believed that only those knowledge that could be used as tools of practical sensory of human activity were valuable. Regardless of the various types of this method, empiricism emphasizes one of the basic truths about human cognition: "without perception, observation and sensory practical activity, the reality cannot be known." **The axiomatic, deductive method** is applied in the theoretical sciences, especially in logic and mathematics. An axiom means the basic truth from which all the other truths in one science are derived. For example, from the

statements "all men are mortal" and "Kiran is a man" we drive the conclusion that "Kiran is a mortal". The ancient philosopher Aristotle (384 - 322 BC), was the founder of logic and he was the first one to point out that the basis of scientific knowledge must be some basic truths - axioms. This position represents a law of non-contradiction, according to which "nothing can exist (claim) and not exist (deny) at the same time". For example, it cannot be true at the same time that $2 + 2 = 4$ and that $2 + 2 \neq 4$. Axiom attitudes are also found in the other sciences if they are constructed as systems of principle or attitudes. Thus the axioms of classical physics are the attitudes defined as follows: "everybody is consisted of material points, each material point moves in a continuous line, the place and speed of movement of each point is simultaneously precisely determined." Synchronized phenomena, e.g. mechanical movements of the body, due to their uniformity and synchronization, can be found out in the form of general laws, for example "everybody is expands in heat". However, many natural and especially social phenomena are discorded, i.e. the degree of their uniformity is low, because their individuality is great. Such phenomena can be found out by the **statistical method** only. The subject of the statistical method is the mass occurrence of various species or the multitude of occurrences of a particular species.

3. Astrological interpretations of mythological events

All ancient cultures knew that the Sun was the source of life on the planet, thus it became an adored object of human reality. Likewise, all ancient cultures knew about the stars, whose tracking allowed them to recognize and expect events that recur at long intervals, such as the Full Moon and its eclipse. Eventually, that celestial grouping was cataloged into what we call constellations today. The zodiac sign is one of the oldest conceptual representations in human history, signifying the figurative orbit of the Sun passing through 12 great constellations annually, signifying 12 months per annum, 4 seasons, solar turning points and equinoxes. The Alexandrian mathematician and astrologer Ptolemy (83-161) divided the sky into 12 constellations of the zodiac, each of which occupies 30 degrees of the sky. However, after two thousand years, all the constellations were moved by one sign, and on the ecliptic, that is along the line which the Sun apparently moves along a sphere, appeared a 13th constellation, which was called the Serpent Bearer. The Sun resides in this constellation from November 30 to December 18. The term zodiac is associated with the fact that the constellations are personified by animal forms. Early civilizations not only observed the Sun and the stars, they personified them into complex myths that included their movements and interrelationships. The Sun, with its characteristics as the savior of life, personifies the invisible creature or God. Similarly, the 12 constellations represented the places of the Sun's travels and were marked with the names of natural phenomena characteristic of a certain period of the year. For example, Aquarius - Aquarius brings spring rains. Horus is the God of Sun, from the period around 3,000 B.C. This Sun is anthropomorphized through a series of allegorical myths that speak of its celestial motion.

Horus had an enemy named Seth, who personalized the night and the darkness. Metaphorically, Horus would defeat Seth every morning, while in the evening Seth would defeat Horus and send him to the underworld. In fact, the story of Horus is astrological. Horus was born on December 25 by the virgin Isis. His birth was marked by the appearance of a star in the East, which was followed by the three kings with the intention of worshiping and giving gifts to a newborn savior. At the age of 12, he was a young teacher, at the age of 30, he was baptized by Anap, and so he began his ministry. He traveled with 12 disciples - students, performing miracles, such as healing the sick and walking on water. After being betrayed by Typhon, Horus was crucified, then buried, and then he resurrected three days later. All these features of Horus, whether genuine or not, comply with many other world cultures, because a similar mythological structure is found in many gods around the world. The Christian myth is also astrological. Jesus was born by the Virgin Mary on December 25 in Bethlehem. His birth was announced by the star in the East, followed by the three kings, and so they came to worship to his salvation. The star in the East is Sirius, the brightest star in the night sky, which aligns with the three brightest stars in the Orion belt on December 24. Those three stars in the Orion belt are called "the three kings". The three kings, together with the brightest Sirius, point out to the place of the sunrise on December 25, and that is why the three kings follow the star in the East, in order to find the sunrise, the birth of the Sun. In this interpretation, it is important to know that the Earth's axis, i.e. an imaginary line, which pass through the North and South Poles of the Earth, and around which the Earth rotates, directed towards the brightest star in the constellation of the Ursa Minor. If we were at the North Pole, that star would be positioned right above us, showing in which direction the North is, and that is why we call that star the North Star. Thanks to precession, the Earth's axis moves due to the complex gravitational influence of the Sun and the Moon on the Earth, and it will not be directed towards the same star forever. In 12,000 years, we shall have another star for the North Star, that is. Vega, from the constellation of Lyra, while our ancestors from the ancient times had the star Theban for the North Star, from the constellation of Dragon. Also, the Earth's axis, due to precession, describes a circle on the celestial vault and it takes about 26,000 years to complete one circular cycle. So, in 26,000 years, the Earth's axis will be directed towards the same star, in which is directed today to the Alpha of the Ursa Minor. We can see that things in the sky and observed from the Earth, changed by the time. One of these changes is that the Sun is not positioned at the same constellation at the certain times of the year as it was 2,000 years ago, when the zodiacs were made. The Sun does not pass through the same constellations as before, i.e. the former twelve constellations were expanded with the thirteenth, which is called the Serpent Bearer. In the continuation of the astrological interpretation of mythological events, the Virgin Mary represents the constellation of Virgo, which in the Latin means Virgin. The Virgo was spoken of as "the house of bread" because Mary was described as a virgin holding a sheaf of wheat. This "the house of bread" and its symbol of wheat, represent the months of August and September, when is the time of harvest. In support to this, the translation of Bethlehem

means "the house of bread." That is how Bethlehem actually refers to the constellation of Virgo, which is a place in the sky, not on the Earth. There is another interesting phenomenon that occurs around December 25, of the winter turning point. The days are getting shorter and colder, starting with the summer and all the way to the winter turning point. Seen from the perspective of the Northern hemisphere, it seems that the Sun is moving to the South in that period and is getting smaller and weaker. The shortening of the day and the dying of crops with the approach of the winter turning point represents a symbolized process of death for the ancient peoples. It was the death of the Sun. Until December 22, that ruin of the Sun was completely noticeable because it was moving until then 6 months continuously to the South, then reached its lowest point in the sky. Then an interesting phenomenon occurs: the Sun, at least noticeably, stops moving to the South, for the next three days. During those three days of pause, the Sun settles in the area of the Southern Cross or the constellation of Crooks, and after that time, on December 25, it moved 1° this time to the North, announcing the longer and the warmer days. That was the reason why it was said: "The Son (Sun) who died on the cross, was dead for three days and then resurrected and reborn." That is why Jesus shares with the other sons of the Sun the concept of crucifixion, three days of death and resurrection. It is in fact the solar transition period before it changes its direction of movement backwards, heading towards the Northern hemisphere, bringing spring and thus salvation. However, the resurrection of the Sun was not celebrated until the spring equinox, which is known in Christianity as the Easter. This is because the Sun on the vernal equinox overpowers the darkness, i.e. since then the days become longer than the nights. The most conspicuous of all the astrological symbols concerning Jesus, is the one concerning the 12 disciples who traveled with him, while Jesus performed miracles, such as healing the sick, walking on water, rising from the dead. The disciples represent the 12 constellations of the zodiac, with which Jesus, since he is the Sun, travels. Thus, the whole concept of mythological events has its own astrological interpretation.

When we turn from the astrological to the spiritual interpretation, then it is important to understand that God gave man a mind (a wisdom), in order to understand God's work, and not the Creator. For example, looking at a constructed bridge, the meaning is in understanding how that building was constructed and not in understanding the architect. Therefore, speaking about God from the position of a man is a denial of God. As the matter of fact, it is a primitive consciousness that is first identified and then interpreted, which is done by almost all church people.

4. Astrology - science, pseudoscience or entertainment

Nothing in the world is as susceptible to doubt as truth. Namely, what is true and what is false, what is an axiom and what is a dogma, what is a man and what is his shadow, often is not easy to determine. Where is the line between the truth and the falsehood, and where what we consider an axiom turns into a dogma? These questions and answers can be

viewed in duality. There is a truth as a goal and there is truth as an instrument. The point where the truth ceases to be the goal and to become an instrument, at that border point truth turns into a lie, an axiom turns into a dogma, and the man turns from the subject of truth to the object of manipulation, because he leaves the sphere of anthropology and becomes the subject of theology and ideology. As the subject of truth, the man is a being who uses his mind to critically examine himself and the truth in the world surrounds him, having truth as his goal. In the other case, the man surrenders to a dogma that excludes research and critique, emphasizing theology and ideology above human thought. The basic question, which is the right path of truth, gives the following conclusion: "Although the truth is a real rarity, throughout the human history, supply has always been greater than demand." I have had a number of scientific and social debates about defining astrology as an entertainment, science, or pseudoscience. From my experience so far, I have set 12 questions whose answers can unambiguously define astrology. In continuation, I have presented systematized questions below:

1. Astrology, observing from the Earth the positions and movements of the planets and the other celestial bodies, brings it all into a certain spatial-temporal connection with the individuals and the societies on the Earth. On the basis of which astrology causally, i.e. causally - consequently connects these separate and independent systems?

2. The apparent orbit of the Sun is called the zodiac and with the certain deviations there are 12 constellations in it. Constellations are conventionally (administratively) adopted groups of stars for the purpose of an easier orientation while observing the night sky. At the moment of a child's birth, the Sun is spatially located in one of those constellations. Since the constellations of the zodiac are of unequal sizes, their clipping is performed, that is each of them is equally assigned 1/12 of the apparent orbit of the Sun, the so-called ecliptics. However, in real life, constellations have different ranges of the zodiac circle (for example, the constellation of Virgo in the sky, occupies six times the belt of the constellation of Scorpio, while the constellation of the Serpent Bearers, which astrologers do not take into account, occupies twice the belt of Scorpio). Astrologers believe that a newborn child has a certain destiny at birth, because it is tied to a certain sign for his life time. However, it is known that already at the conception, a genotype (a set of all genes inherited from parents) is formed, with which we are born. How is it possible that astrologers consider the moment of birth more significant, than the moment of conception, interpreting that in that moment a certain planet "rules" in the sky?

3. Why the astrology does not take into account that the constellations after which the parts of the zodiac circle are named, no longer correspond to the former order of the things, i.e. we were not born in a sign in which we are constantly told that we were.

Capricorn[♑] (21.1 - 16.2) ↔ Capricorn[♑] (22.12 - 20.1), Aquarius[♒] (17.2 - 12.3) ↔ Aquarius[♒] (21.1 - 19.1), Pisces[♓] (13.3 - 18.4) ↔ Pisces[♓] (20.2 - 20.3), Aries[♈] (19.4 - 14.5) ↔ Aries[♈] (21.3 - 20.4), Taurus[♉] (15.5 - 21.6) ↔ Taurus[♉] (21.4

- 21.5), Gemini[♊] (22.6 - 20.7) ↔ Gemini[♊] (22.5 - 21.6), Cancer[♋] (21.7 - 10.8) ↔ Cancer[♋] (22.6 - 22.7), Leo[♌] (11.8 - 16.9) ↔ Leo[♌] (23.7 - 22.8), Virgo[♍] (17.9 - 31.10) ↔ Virgo[♍] (23.8 - 22.9), Libra[♎] (1.11 - 23.11) ↔ Libra[♎] (23.9 - 23.10), Scorpio[♏] (24.11 - 29.11) ↔ Scorpio[♏] (24.10 - 22.11), Sepens[♐] (30.11 - 18.12), Sagittarius[♐] (19.12 - 20.1) ↔ Sagittarius[♐] (23.11 - 21.12).

[♑] Zodiac with 13 constellations

[♒] Zodiac with 12 constellations

4. The astrological signs and constellations in astronomy are two different concepts. The stars, especially in conjunction with the planets (seemingly close positions of the two celestial bodies), are of an influence in the constellations, but the other stars outside the certain constellations are also of an influence. For astrology, the masses of the planets are irrelevant (for example, Jupiter is large, Mars is significantly smaller), nor their distance from us, but only their coordinates. If we ignore all the other forces, which is not justified in physics, and apply only the Newton's law of gravity, we could conclude that a gynecologist giving a birth to a child to woman on a delivery has a greater gravitational influence on the child at a birth, than any planet. Also, the activity of the Sun is stronger on Mars than on Earth, and on Earth itself it is different at the poles in relation to the Equator. So, the horoscopes should be different for those who live closer to the Poles, than for those who live closer to the Equator, which is not the case. How does astrology explain the stated influence of the celestial bodies on a human or society: through the influence of waves, gravity, electromagnetic radiation How?

5. The constellations of the stars are envisaged by the observer only on the Earth in one dimension, but in fact, they are extended into the depths. The Universe is three-dimensional and the astrologers observe and interpret the future from their two-dimensional charts. Also, the stars in the same constellations are distant from each other, so they cannot have the same influence. Also, we cannot abstract the fact that the constellations have moved by 30° latitude in the last 2,000 years, e.g. Libra is situated today in a location where the Scorpio used to be. Do astrologers take these facts into account and if they do, how they apply them into their methodology in the conclusions?

6. Considering that the Earth is not of homogeneous composition nor spherical shape, but flattened at the poles and convex along the Equator, why does astrology not take into account the procession, i.e. an alteration in the tilt of the Earth's axis of rotation that occurs in cycles lasting about 26,000 years. As a result of the procession, the entire zodiac belt shifted by 30 degrees compared to the period when the astrologers first divided the zodiac into 12 equal parts nearly 3,000 years ago.

7. Psychology has conducted a large amount of research denoting the fact that artists, criminals, statesmen or dictators, are born throughout the year, without any particular rule. Astrologers believe that Mars is dominant in the horoscope of criminals, however, that is a false projection. The dates of their birth are arranged according to

all the signs of the horoscope. No zodiac sign brings together people of the same profession or trait more than the other signs. How do you explain this?

8. It was recorded that the great Spanish writer Cervantes and the great English writer Shakespeare, both died on April 23, 1616. As an interesting fact, it is stated that two great writers died on the same day, which is false, because although the date of their death is the same, the day of the death itself is not. Shakespeare died ten days after Cervantes, because there is so much difference between the Gregorian calendar that was valid in Spain and the Julian calendar that was valid in England in the 17th century. Does astrology take into account the differences of calendar measurements, and do you know any example of a double interpretation of any of the scientific laws within the exact sciences?

9. Considering that astrology based its conclusions on beliefs, i.e. assumptions, on which basis is determined the level of accuracy of the stated assumption?

10. Divination or the prophecy is the skill of getting introduced to the future on the basis of different types of signs. Psychologically speaking, people tend to perceive general statements as an accurate descriptions of their personality, remembering the best what corresponds to their beliefs. Is astrology a kind of divination, and if it is not, what is it then?

11. Considering that astrologers direct the people to live in the certain ways (influence to their marriage, love, job, etc.), viewed from the ethical perspective, whence the moral right of an astrologer to judge on the basis of conclusions based on an indirect narrative assumptions and intuitive conclusions, i.e. beliefs in something without a solid evidence.

12. Since the Christian church based its teachings on faith and belief, why the astrology is not acceptable. Have the methodologically similar conclusions been separated by the struggle for the market supremacy?

According to the knowledge based on the principles of methodology and methodology of the exact scientific conclusions, my position is as follows: **"Astrology is a pseudoscience, which application in social relations is one of the forms of systematically organized entertainment"** (M. Kuka 2020). The wider social context of the envisaged principle was described by the Italian historian Cantu Cesare (1804-1895), who said: "When a wrong opinion is established in a society, it must be refuted, otherwise it will instantly appropriate the right of a Common sense."

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