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Humans and Their Environment: A Proposal for a New Perspective

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Abstract

The ultimate purpose of this essay is to persuade humans to adopt a new, more objective perspective of their relationship to their environment, including the universe, but the odds of approaching, let alone reaching, this goal during my life are close to zero. Therefore, I limit my goal by examining the perspective held by scientists in the field of astrophysics for two reasons: they spend most of their professional activities in astrophysics and they do that by employing the scientific method. The first part of this essay presents a brief description of the scientific method and its product, the current perspective, followed by the reasons why I believe the present perspective is faulty. The second part offers a step-by-step construction of a new perspective which will not only help astrophysicists in their work but might also, gradually and at least occasionally, help all humans see themselves and their environment in a more objective manner.

Keywords

Universe and humans; scientific method; direct knowledge and conjectures; anthropocentrism; fundamentals and overlay; zone of uncertainty.

The current perspective

The process that has largely shaped the current scientific perspective of the universe, also called the scientific method, was first developed in the western extremity of the Eurasian continent. Although an earlier version of the scientific method was practiced in Greece, it was eliminated during the centuries-long "Dark Ages" when religious officials persecuted and murdered scientists. It was Islamic scholarship from farther east that helped the renaissance of science in the Middle Ages.

The core of the **scientific method** consists of two parts which ideally are engaged in constant interaction and should be given equal attention. One is direct knowledge which is gained by sensory perception. In astronomy it has been obtained first with eyes and for the past few centuries mostly with mechanical devices such as telescopes, and then processed by the brain. The other part is what I call conjecture, which is expressed in mental constructs such as models, hypotheses, estimates, calculations, theories, opinions and even dreams and extrasensory perceptions.[2] It is generally accepted by scientists if not by all laymen that any conjectures about the universe must have a reasonably fair chance of eventually being verified by visible evidence. If they are, they become direct knowledge and are ultimately codified into scientific laws and formulas and sometimes expressed by mathematical formulas, such as for the speed of light and

[1]The basic outline of this essay was completed in 2011 and an earlier version was copyrighted in 2020.

[2]This process is sometimes called calculated knowledge which I eschew because it falsely suggests an equivalence with direct knowledge.

mass-energy equivalence. If they are not, they remain conjectures and must therefore not be treated as facts.

This interactive process has worked well for several centuries and helped foster an optimistic expectation of perpetual progress in all fields of human research. In astrophysics the process has spawned theories about the origin, shape, and size of the universe and conjectures about the existence of intelligent life beyond this planet. Infused with this optimistic spirit, the current perspective, shared by perhaps most astrophysicists, includes the possibility that with the help of new methods and mechanical devices humans will ultimately gain direct knowledge of the universe, its origin or at least some of its content that is currently not yet known.

The most remarkable aspect of the present perspective is what it does not include, namely, a study of humans as objective as that of the universe. It is remarkable because the scientific method clearly implies a close relationship between object and observer. It is also known that when humans study the way other species perceive their environment, they take into full consideration not only the process of perception but also every aspect of the organs of perception. There are also numerous studies in several sciences using the same kind of objectivity involving human organs of perception, but publications in astrophysics, particularly those dealing with areas far removed from this planet, show no awareness of a relationship between humans and the universe as well as the need for applying the same degree of objectivity to the study of the observer as to the object.

By way of illustration, let me cite two areas of recent intense interest among astrophysicists. One is about the nature of the universe that started in 1931 with Lemâitre's proposal of a Big Bang. Since then, his theory has undergone several major proposed changes, such as the idea brought forth around 1980 that after the conjectured Big Bang singularity the young universe expanded several times faster than the speed of light. Three decades later, some scientists still ardently defend this theory while others have offered an alternative theory, sometimes called the "big bounce," but neither theory has come any closer to being verified. More recently, the astrophysicist John Mather completely rejects the notion of a singularity and speculates that "the Big Bang happened everywhere at once (about 13.8 billion years ago) and was definitely not a point in space or time."[3]

Another example of the lack of objectivity is found in the decades-long search for other intelligent life forms in this universe. Enrico Fermi's paradox of 1950 contrasted the high probability that such life forms exist and the complete failure of finding them. Nothing has changed since then; scores of attempts to solve the paradox have all failed. The chief significance of this problem is the tacit assumption by Fermi and others that intelligent life forms beyond this planet, or at least those worthy of human efforts to find them, are like humans. In other words, the current perspective seems to assume that other life forms perceive their environment with similar senses and use similar technologies, like radio, to communicate and explore the universe.

These two cases do not seem to have much in common except for one thing. They clearly demonstrate that the current perspective is tainted with **anthropocentrism**. It is the most inclusive variant of self-centeredness which starts with egocentrism where one human sees himself in relation to one or more other humans and superseded by more inclusive levels found in human groups that are formed by genetic, economic, religious, and political links. At each

[3] Mather, John, "The Big Bang," *Edge*, October 9, 2022.

level, self-centeredness is frequently the very antithesis of objectivity. An example of how one political entity perceives another political entity, take the case of China's official view of the Mongolian empire, the largest contiguous empire in human history. The facts are well-known: in two military campaigns in the 1210s and the 1260s Mongolian armies conquered all of China, and for the subsequent hundred years China ceased to exist as an independent state. However, all Chinese governments since then, including the current ones in Beijing and Taipei, seem to obscure this fact by listing the century of foreign occupation as a Chinese dynasty with the title Yuan.[4]

We can conclude that at all levels of human interaction but one the phenomenon of self-centeredness is generated and sustained by a sense of superiority which in most cases, however, eventually allows for greater objectivity and the admission of shortcomings. As long as both parts of the object-observer relationship involve humans, the current perspective includes both. When humans turn their attention to the universe, however, the relationship changes from social to physical, and one would expect scientific writings to spend equal amounts of time on both parts of the physical relationship between object and observer. Anthropocentrism, the highest form of self-centeredness, does not allow this to happen except for an occasional remark about not knowing most of the universe at the present time. As a result, the current perspective acknowledges that "ordinary (baryonic) matter" amounts to only about 5% of the entire universe, yet, according to scientific writings as well as Wikipedia and other reference works, it states authoritatively that the universe is flat, has three or four dimensions, was born about 13.8 billion years ago, and that the observable part of the universe is about 93 billion light-years in diameter.

The new perspective

I propose a new perspective built on complete objectivity in the study of both the universe and the human observer. Toward this end, humans should be studied exactly like any other object. Hence, the word humans as used in this essay is the short form for the present evolutionary stage of hominids called *Homo sapiens*. The new perspective views the human observer as consisting of two equally important parts. The first one is called the **fundamentals** which include the five basic forms of perception: sight, smell, touch, hearing, and taste that perceive the environment including the universe. Many other species possess the same five sense organs but use them differently. For example, bats rely heavily on their ears while dogs have a much keener sense of smell than humans. More importantly, other animals perceive their environment in ways unknown to humans; for example, the bar-tailed godwit flies annually between the North American arctic and New Zealand without any reference to visual objects such as landforms. Given this known diversity on one planet, the chances are close to zero of finding life forms elsewhere that depend on the same senses that humans use to explore the universe. Conversely, the odds are very high that life forms beyond this planet perceive the universe with senses unknowable to humans and that they use different technologies to explore the universe.

[4] The same remarkable historiographical practice has also been applied to the period between 1644 and 1911 when China was conquered and ruled by the Manchus. That period has been given the Chinese name Qing.

The new perspective recognizes a second feature of *Homo sapiens* that I call the **overlay**.[5] It consists of three types of human constructs. The first could be called culture in the broadest possible sense and consists of both tangible and intangible items, such as machinery, philosophy, mathematics, sculpture, religion, and internal perception. A second type is entirely intangible and consists of a wide variety of measurements such as one or more sets for each of the five basic senses. The third type is of great importance to the subject of this essay. It consists of locational concepts which help locate any object or event, such as longitudes and latitudes. For the purposes of this essay, the most significant locational concepts are dimensions, a point I will come back to in a moment.

All three kinds of overlay are closely linked to the fundamentals. It is fair to say that all elements of culture have been influenced, directly and indirectly and to various degrees, by sight and other forms of perception, while the other two categories of mental constructs are directly linked to the fundamentals. Light years and parsecs, for example, would not have been invented in the absence of sight.

The relationship between the fundamentals and the overlay is mostly one-way. While all parts of the overlay are created by the fundamentals, only tangible parts, like instruments, should be allowed to influence any fundamentals. As mentioned at the beginning of this essay, the ideal of the scientific method is that any conjecture must be verified by direct observation before it can be used in further research. Using the language of the new perspective, this means that humans must not allow any intangible element in the overlay to intrude into their study of the universe. In practice, however, keeping any part of the overlay from intruding into fundamental research has apparently failed and has resulted in the current, flawed perspective.

There are several examples of this kind of intrusion of which I will describe two. One is the mental construct called dimension. Its scientific definition is the coordinate of a mathematical space as well as that mathematical space, which the new perspective makes it unquestionably a part of the overlay and should therefore not be used for measuring the universe. Also, the scientific definition of dimensions states that when applied to locating an object, one coordinate is needed to locate an object on a line, two coordinates in an area, and three in a sphere. Even though there is no proof to support this view, scientific descriptions of the universe include the term dimension because this mental construct is so deeply ingrained in humans that they treat it as an observable fact.

Another example is the concept of limits. When scientists use terms like multi-universe and parallel universes, they state or imply that a universe of three or any other number of dimensions has limits for which there is no evidence either. The notion of limits, however, is a cognitive assumption that is attractive to humans because of its kinship to the idea of birth and death, another central element of the human overlay. It is highly probable that the ideas of Big Bang and Big Crunch are the result of this importation. They dominate human minds so much that even astrophysicists like John Mather, mentioned earlier, who no longer believe that the Big Bang happened in one place now hypothesize that the universe was born everywhere simultaneously.

With these two cases the new perspective demonstrates how overlay elements helped form the current perspective of the shape, limits, and size of the universe. As dozens of science fiction

[5] I prefer overlay rather than more conventional terms like human constructs because it suggests human constructs can be and at times have been heavy burdens on fundamentals.

novels attest to, any admixture of some elements of the overlay with facts can result in perspectives that are internally consistent and hence credible and yet may not conform with reality. Consequently, the new perspective does not consider any overlay element such as dimension, space, and time until it is proven to exist.

Moreover, while it not only agrees with the generally acknowledged fact that human knowledge of the universe is currently limited, but the new perspective also demonstrates that this limit is absolute and will forever prevent humans from perceiving anything beyond the capacity of their five senses.[6] No future inventions will ever be able to eliminate this limitation because they are products of the overlay. Take for example the current (summer of 2022) interest in artificial intelligence and assume that eventually some AI devices will be implanted in humans. These devices would be manufactured by humans and their findings interpreted by humans and therefore could not create additional sensory organs. To achieve that, these devices would have to gradually evolve into self-programming automatons which might eventually develop other senses that, in turn, might result in a different perspective of the universe. The likelihood of such development ever occurring cannot be ruled out but given the definition of the species *Homo sapiens* above, any consideration of such automatons is irrelevant.

The exact nature of this absolute limit is not yet known. As human vision and conjectures approach the zero point of the human-perceived universe, they gradually become less reliable so that the edges of that universe seem not to be hard and fast but rather more like a zone of uncertainty with characteristics some of which may always remain unknowable.

Summary

The new perspective contains several features the most fundamental of which is equal attention given to both the object (the universe) and the observer (humans). This maximum objectivity is a core value of the scientific method, is still one of the most cherished goals for any scientist, the new perspective ought to be adopted. This basic feature leads to the discovery of anthropocentrism which, like all lower forms of self-centeredness, has been blocking the path toward complete objectivity. Another feature is the description of fundamentals and overlay, two equally important parts of a human being, and their relationship.

The new perspective would be beneficial not only to scientists but most other humans as well. Two of its elements are of particular importance. One is equal importance given to both object and observer. To be aware of all levels of self-centeredness would mitigate or even eliminate conflicts of all kinds. Whether it is the Hatfield's and McCoy's in the past or Russia and NATO at present, if any of these actors had adopted the new perspective and took a step above their own level, they would have seen their conflict more objectively. The other element is the distinction between fundamentals and overlay. In most social relationships, including conflicts, both sides should be considered with equal objectivity, but in the case of existential problems involving the relationship between humans and their physical environment, more emphasis must be given to fundamentals. A case in point is the current concern over global warming. Efforts are being made at all levels of society to combat some causes of this problem. They are laudable and ought

[6] A minor handicap arising from the human inability to detect anything faster than light is the certainty of never discovering and communicating with contemporaneous life forms beyond this solar system's immediate neighborhood. If it is any consolation, humans will continue to have an opportunity to gain experience in communicating with other highly intelligent life forms on this planet like whales.

to be supported by all humans. Unfortunately, they are also Sisyphean because the root cause, overbreeding, is not being combatted, and the odds for that to happen with any degree of success are close to zero.

I am pessimistic because the fundamental urge to procreate is aided and abetted by powerful elements in the overlay. Over the past two millennia or more, the species has organized itself into a slowly increasing number of enclosures, called by various names like republics and federations, across most parts of this planet. Within these enclosures, political, military, economic and religious organizations developed, and their existence has become dependent on continuous growth, with growth meaning primarily human members. Any actual or potential end to this growth is almost always being interpreted as an existential threat. And yet, as unlikely as it may seem today, future generations might produce an acceptable solution. After all, to quote another product of the overlay: Hope springs eternal.