

RESEARCH ARTICLE

If extraterrestrial intelligence exists, it is unable to recognize humans as intelligent beings

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Abstract

In this paper we consider a scenario in which Carl Sagan’s Copernican principle is more likely than its negation. Thus, assuming that the existence of an extraterrestrial intelligence (ETI) is reasonably likely, the paper considers the possibility of an ETI that is unable to recognize humans as intelligent beings. The paper presents the rationale for such an assumption. It also discusses the possible consequences for humanity of such a scenario. In this paper, we argue why the scenario under discussion is actually more positive for humanity than a scenario in which ETI would be capable of recognizing humanity as an intelligent species. We also point to feminist approaches to SETI issues exposing the role played by the specific evolutionary and developmental context of potential ETI.

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Introduction

This paper considers one very plausible scenario in which ETI exists according to Carl Sagan’s Copernican principle, but is unable to recognize humans as intelligent beings due to the entirely different nature of extraterrestrial intelligence. Carl Sagan’s Copernican principle assumes that the Earth, as well as our Solar System, is a typical rather than an unusual part of the Universe. According to this principle, the existence of other living organisms including intelligent beings is more likely than not. In this paper, we consider a scenario in which the existence of ETI is quite likely, but we propose a thought experiment in which ETI will not recognize human beings as intelligent beings. This understanding of ETIs, under our assumption that ETIs will represent a type of intelligence superior to that of humans, strikes at the anthropocentric and anthropomorphic view of ETIs as beings that are typically

*The online version of this article has been updated since original publication. A notice detailing the change has also been published.

viewed as capable of recognizing humans as intelligent beings. The perspective presented in this paper therefore minimizes the potential significance of human intelligence on a cosmic scale. We also draw attention to the possible positive and negative consequences for humans of an encounter with ETIs so understood.

What could ETI be?

It is often thought that ETI must be more highly developed than human intelligence. This reasoning is based on the following premises:

- (1) Intelligent beings create technologically advanced means of transportation,¹
- (2) The most technologically advanced human-made means of transportation are orbital and Earth-Moon space vehicles,
- (3) The creation of an interplanetary, let alone interstellar, means of transportation requires an even more advanced intelligence that humanity does not possess today,
- (4) ETI created interplanetary or interstellar means of transportation because it had to come from outside the boundaries of this universe that we are able to monitor, and therefore:
- (5) ETI must be more intelligent than humans.

This is correct reasoning. What constitutes an unknown is the structural similarity of extraterrestrial intelligence to terrestrial intelligence. There are strong arguments for the claim that any intelligence must be based on the same or very similar problem-solving mechanisms, and is constrained by physical laws as well as arguably biological structures, such as the nature of DNA (Oberhaus, 2019). Both types of restraints, physical and biological, limit the range of evolutionary possibilities despite the role played by chance in evolution.

But it does not follow from this reasoning that an intelligence better developed than human intelligence must understand human intelligence. This is an additional assumption often made. Still another assumption often made is the belief that ETI will recognize humans as intelligent beings. These additional assumptions can be stated as follows:

- (6) Since ETI is better developed than human intelligence, it must be able to understand us, because human intelligence is contained in ETI (e.g. as an earlier form of development),
- (7) The ETI must be able to recognize humans as intelligent beings:
 - (7.1) ETI must be able to understand our intelligence as well as to recognize us as intelligent beings,
 - (7.2) ETI must not be able to understand our intelligence, but must be able to recognize us as intelligent beings.

It is worth supplementing this popular scheme with a somewhat paradoxical assumption:

- (7.3) ETI does not have to be capable of understanding our intelligence, nor does it have to be capable of recognizing us as intelligent beings.

Imagine that premise 7.3 is true. ETI not only does not understand our intelligence as we do not completely understand the intelligence of other mammals, but ETI also does not know that we are intelligent beings any more than we assume that fish, for example, are intelligent in a way analogous to us. It is possible that fish are intelligent no less than we are, but according to a different scale and a different way of measuring intelligence than the one we have created. The human way of measuring

¹We mention means of transport and no other technological inventions because it is assumed that the first product of advanced ETI technology that people will have contact with will be their means of transport. This is the working definition of intelligence in SETI. Of course, it is possible that humanity would have been able to detect the signal emitted by ETI prior to ETI's appearance on Earth, but (1) ETI may wish not to reveal itself to humanity, (2) it may have no need to do so if it does not recognize humanity as intelligent, and (3) as finally, what interests us in the ETI-human relationship discussed here requires ETI's direct presence on Earth, not just the emission of signals.

intelligence is admittedly conceptually distinguishable from the ability to create technological civilization and technological intelligence. But in practice, perhaps in an unconscious way, highly developed human-type intelligence is associated with the ability to create a highly technological civilization. This is a particular kind of anthropomorphization in imagining ETI. For not only do we tend to assume that ETI will think like us, including wanting and planning like us, fighting like us, conquering or at least exploring other places in the universe, we also assume that it seeks to create a technological civilization. This is a kind of double anthropomorphization error in imagining ETI. Instead, let's assume that fish are no less intelligent than we are, but let's try to take a different perspective than our human perspective on thinking about other species.

The analogy between us in the eyes of ETI and fish in our eyes (although the comparison to cockroaches is encountered more often in SETI literature than the comparison to fish) is not perfect for the following reason. Certain cognitive and intelligent functions require a properly developed neuronal system and brain. The brain of fish prevents them from certain cognitive and intelligent functions inherent in humans. Given this fact of the poor development of the fish brain preventing them from generating certain cognitive functions that we consider essential to defining an entity as intelligent, we could assume that ETI cannot perceive us the way we perceive fish because, unlike fish, we have a brain developed enough to meet the criteria of intelligent beings. But imagine that our degree of brain development and the cognitive and intelligent functions enabled by such a developed brain is, in the eyes of the ETI, what we see, assume and interpret when we study and learn about fish. ETI may not recognize our degree of brain development or our cognitive functions as intelligent functions.

Assumption 7.3 implies further assumptions:

(7.3.1) Since ETI does not recognize us as intelligent beings, ETI does not recognize our artefacts on Earth as artefacts created by intelligent beings (or by any living beings),

(7.3.1.1) It follows that also signals emitted by humans, as well as anything that humans assume to be universal, potentially recognizable by the ETI as made by intelligent beings (in this case humans), i.e. numbers, mathematical equations, physical formulas or art, are unrecognizable by the ETI as made by intelligent beings.

Why ETI may not be able to recognize humans as intelligent beings

One possible scenario is one in which ETI is unable to recognize humans as intelligent beings in any of the possible meanings of the term intelligence that we can think of. At first glance, this scenario can be considered as one variant of the Zoo hypothesis. However, the Zoo hypothesis assumes that ETI is able to recognize some form of human uniqueness even if it is a very primordial form for ETI (Ćirković, 2018). Nevertheless, the reason why, according to the Zoo hypothesis, the ETI chooses to view humans in the manner of humans viewing animals enclosed in the Zoo is that we must stand out from other animals in the ETI's judgment by something. This something is our, even if for the ETI only poorly developed, intelligence. Assume, however, that ETI will not be able to distinguish us from any other animal species on Earth. In other words, ETI will not apply the criterion of intelligence to the analysis of living forms existing on Earth at all.

The belief that ETI must perceive the world in terms of mathematics and physics in a manner identical to our own not only fails to account for the role played by biological, cognitive and cultural contexts. It strays far from what feminist philosophy calls attention to. Let's call this approach feminist SETI. Feminist SETI emphasizes that one's understanding of the world depends on one's social position, one's assumed or received (imposed) social roles.

If ETI evolved differently from humans, this biological and cognitive dissimilarity is exacerbated by the presumed social and political dissimilarity that, according to feminist approaches, shapes the way we learn about the world. Consequently, not only do we not know how SETI's biological evolution unfolded and how it affected her way of knowing and perceiving. Nor do we know how the social and political relationships of beings so different from us might have been shaped. We have two unknowns here. If it is known that both contexts shape cognition, we have two strong reasons to

acknowledge our total ignorance about whether SETI might share the same way of perceiving the Universe with us. Consequently, we should not assume that ETI science and knowledge is merely elevated universal knowledge shared also at a lower level by humans (Basalla, 2006, 177). Applying a feminist perspective to astrobiology and SETI allows us to better understand the role played by context in the development of ways of seeing the world.

One can also imagine a scenario in which modern science, which emerged in humans several centuries ago and played no role in our evolution for almost the entire evolutionary period of our species, may not be the only or best form of knowledge, and as such need not emerge at all in ETI (Basalla, 2006, 178).

Taking a biological evolutionary perspective provides a strong argument for the hypothesis that: (1) Intelligence has not evolved anywhere in the Universe except on Earth, and (2) If it has evolved, there is no regularity that it resembles Earth intelligence in any respect. We refer to the famous criticism of the anthropomorphic approach to SETI formulated by George Gaylord Simpson and Ernest Mayr, among others. Especially the latter emphasizes how the evolution of intelligence should be correctly understood – not as an inevitable culmination of the evolutionary process, but as a specific kind of adaptation, extremely rare in the history of life on Earth (Basalla, 2006, 180–181).

Reference to biological evolution provides ambiguous arguments for the existence or non-existence of ETI. On the one hand, the randomness of evolution leads us to believe that the evolution of intelligence is extremely unlikely. On the other hand, examples of convergence provide some probability of intelligence evolving beyond Earth (Lingam and Loeb, 2021, 694–695). But even if intelligence has evolved beyond Earth, the odds are very high that ETIs are completely different from humans, and any communication is impossible. This has important implications for linguistics. Even if we were to take a different perspective from the one proposed in this paper and acknowledge the possibility that ETIs might recognize humans as intelligent beings, it is not clear that the two species could ever communicate with each other.

ETI does not have to be understood in terms of a postbiological being, such as one based on AI (Dick, 1993). Such thinking still assumes a linear understanding of evolution from primitive living forms to super intelligent beings whose intelligence culminates in the creation of a technological civilization implying even a transcending of extra-biology. There are many reasons why an intelligent being, even one smarter than humans, may never develop AI, or at least develop it only in a limited way. One of them may be the ability to foresee the possible negative consequences of applying AI on a large scale, which, by the way, are discussed by humans, but do not cause AI work to be curtailed or even less halted.

Another issue is the correlation between human-type and higher intelligence and technological intelligence and civilization. Can a completely different type of intelligence from human type also develop into technological intelligence, or should it be assumed that always technological intelligence and civilization require the existence and development of human-type intelligence? A common mistake of thought in SETI is the belief that human-type intelligence is the primary model of intelligence in the Universe, and that one natural manifestation of this intelligence is technological intelligence culminating in a technological civilization. However, it is worth remembering, as German philosophers anthropologists already pointed out in the 19th century, that humans, unlike other animal species, are born defenceless and without any tools or adaptations. Intelligence is what is necessary for them, it is the compensation for the missing adaptations, weapons and defensive tools.

What are the chances that life anywhere in the Universe will lead to the evolution of analogously defenceless beings in the sense that humans are naturally defenceless, to constitute a selection pressure strong enough for intelligence to evolve? While it is true that there is and has been convergence in the evolution of certain adaptations despite different environments, one specific requirement is the evolution of defenceless beings compensating for defencelessness with intelligence.

Intelligence understood as it is understood by humans and maximally as it is possessed by humans evolved as an effect of lack and as compensation. For intelligence analogous to humans to evolve in space, it too should be an effect of lack and a compensation for defensive measures and other

adaptations to the environment. It is difficult to say whether it is possible that anywhere in the Universe a human-type intelligence could evolve as a compensatory adaptation to deficiencies. Can intelligence evolve as an adaptation when the organism also has other adaptations? If so, then it would be a very different intelligence than human-type intelligence, and would probably serve different purposes and goals than human intelligence. To the extent that ETI will not recognize human intelligence as intelligence, because ETI may have biological adaptations other than intelligence to solve problems that humans solve with intelligence.

It is worth reversing the hypothesis often considered within SETI that humans may not be able to read the signals emitted by ETI as signals (Roush, 2020, 168), and consider a scenario in which ETI is not only unable to recognize our signals as signals, but even unable to recognize us and our artefacts as intelligent beings.

The way we think about ETI is necessarily anthropocentric. Biology and the cognitive sciences, however, show that both life and cognition can take a variety of forms and not resemble humans at all. The evolution of life and intelligence is hugely determined by particularistic planetary conditions (Cabrol, 2016).

What implications does the assumption under discussion have for SETI and METI?

If we look at the SETI and METI issue in the terms of the popular approach that considers ETI scenarios malicious, indifferent or good for humanity, the ETI scenario considered in this paper that does not recognize humans as intelligent beings will probably result in its morally indifferent attitude towards humans. But this indifferent attitude can lead to both positive and negative outcomes.

Positive outcomes

We assume that ETI, which does not recognize humans as intelligent beings, will never intentionally harm us. This will be because, in the ETI's thought system and survival strategy, neither humans, its resources, nor the Earth as a whole will represent anything attractive or any kind of threat. The ETI may see humans and Earth as just another astronomical object similar to the many other objects the ETI already knows. What is not clear, however, is what attitude the ETI might take towards living forms. While we assume that ETI will recognize us as a living form, a thought experiment assuming that ETI is unable to recognize us as a living form is as interesting as it is extremely unrealistic.²

Assuming, then, that ETI will recognize us as living but unintelligent forms, it may want to protect life on Earth as such. In this scenario, ETI will do everything in its power to avoid putting people in harm's way, let alone death. The analogy here is the planetary protection policy known from space mission protocols, specifically the protection and prevention of forward contamination. Just as humans do all they can to avoid destroying and contaminating possible traces of past life on those astronomical objects they explore, similarly ETI may seek to ensure that no harm is done to living forms inhabiting Earth, including humans.

The consequences of an encounter with an ETI so understood therefore depend on whether the civilization that the ETI developed prior to the encounter with humans (Earth), which could be either intentional or accidental, has any moral motives for respecting life itself. There are reasons why life need not represent any value to ETI to the extent that ETI may not even be aware that there are moral systems in which life has moral value (moral status). The lack of such awareness does not necessarily represent a lower stage of moral development, however counterintuitive it may seem to us. Better for humanity in terms of increasing its chances of survival would be a scenario in which ETI did not know or recognize as relevant theories of moral status known from ethics developed by humans that derive moral status from unique human properties, cognitive properties, moral agency or sentientism. The human in the scenario we are discussing does not meet the first three criteria from an ETI

²However, this may seem possible that ETI will be a non-carbon-based living form, and perhaps carbon-based living forms will not be living forms for it by its definition and understanding of life.

perspective, possibly it may meet the last regarding sentientism, but it is not clear that ETI would be able to recognize sentientism in humans.

The most important positive consequence from the point of view of human survival of the scenario under discussion is the impossibility of the dynamics of social and political relations discussed in Thomas Hobbes' model of the state of nature. Its application within the SETI and METI philosophies is the Black Forest theory. According to these theories, every intelligent species in the cosmos seeks to exterminate every other species, fearing that analogous thinking characterizes every other species. On the assumption that ETI is more intelligent, and more technologically developed, than humanity – including combat and weapons systems – ETI's failure to recognize humanity as an intelligent species precludes the possibility of deliberate extermination of humanity for the motives assumed by Black Forest theory.

Negative outcomes

Assuming, then, that ETI will recognize us as living but unintelligent forms, it may want to treat humans as simply living forms that need no protection. We take the term 'do not require protection' to mean they 'have no right to life'. This means that ETI will never want to do us harm, but it will also try not to do us harm. An example of this situation is a hypothetical landing on Earth, where an ETI space vehicle will cause the death of a number of people during its approach to Earth and landing. The ETI may not pay any attention to this at all just as humans pay no attention to insects that move along the road. In this scenario, human deaths will be an accidental consequence of ETI's movement around the Earth and its eventual exploitation.

It is worth noting the scenario which is a modified version of the Black Forest theory. According to this modified theory, ETI may wish to destroy any life it encounters, even if it is life that ETI believes is not only unintelligent, but is understood to be a low, incipient life form. Assume that this is how the ETI will view humanity, but perhaps any other species as well. In this scenario, ETI may seek to deliberately destroy all forms recognized as alive on Earth to prevent them from evolving in the future into intelligent forms that could build a civilization that could threaten ETI. From this point of view, humanity should try to do everything possible to not only not be recognized as an intelligent form, but even as a living form.

Conclusions

For the consideration of ETI, what is important should not be whether we are able to ever discover its existence. The SETI literature is rich with numerous hypotheses about when, why, under what circumstances, we may or may not be able to recognize ETI, whether ETI doesn't want us to or maybe it locks us in a bubble and our view of the world is just an illusion (Webb, 2015). All of these scenarios have one thing in common – they assume that ETI knows or will learn about the existence of humans as intelligent beings. However, it seems more problematic if it is not us, but the ETI for some reason is unable to recognize us as intelligent beings. This need not be a cause for existential worry, although as long as we are unable to free ourselves from the anthropomorphic bias in thinking about the evolution of morality, we have reason to fear ETI equating moral status with intelligence as humans have done and continue to do. If we invoke the precautionary principle, we should do everything in our power to never be detected by ETI so understood because we do not know whether, under the scenario described above, ETI will not unintentionally harm us. For in this scenario it is something obvious that since ETI does not recognize us as intelligent beings, much less is it able to communicate with us by any means.

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