

ETI (Search for Extraterrestrial Intelligence) and the Aliens Conundrum

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(2) If we have absolutely nothing in common with the Aliens, can we still recognize them as intelligent life forms and maintain an exchange of meaningful information with them?

II. Artificial vs. Natural

"Everything is simpler than you think and at the same time more complex than you imagine." (Johann Wolfgang von Goethe)

Complexity rises spontaneously in nature through processes such as self-organization. Emergent phenomena are common as are emergent traits, not reducible to basic components, interactions, or properties.

Complexity does not, therefore, imply the existence of a designer or a design. Complexity does not imply the existence of intelligence and sentient beings. On the contrary, complexity usually points towards a natural source and a random origin. Complexity and artificiality are often incompatible.

Artificial designs and objects are found only in unexpected ("unnatural") contexts and environments. Natural objects are totally predictable and expected. Artificial creations are efficient and, therefore, simple and parsimonious. Natural objects and processes are not.

As Seth Shostak notes in his excellent essay, titled "SETI and Intelligent Design", evolution experiments with numerous dead ends before it yields a single adapted biological entity. DNA is far from optimized: it contains inordinate amounts of junk. Our bodies come replete with dysfunctional appendages and redundant organs. Lightning bolts emit energy all over the electromagnetic spectrum. Pulsars and interstellar gas clouds spew radiation over the entire radio spectrum. The energy of the Sun is ubiquitous over the entire optical and thermal range. No intelligent engineer - human or not - would be so wasteful.

Confusing artificiality with complexity is not the only terminological conundrum.

Complexity and simplicity are often, and intuitively, regarded as two extremes of the same continuum, or spectrum. Yet, this may be a simplistic view, indeed.

Simple procedures (codes, programs), in nature as well as in computing, often yield the most complex results. Where does the complexity reside, if not in the simple program that created it? A minimal number of primitive interactions occur in a primordial soup and, presto, life. Was life somehow embedded in the primordial soup all along? Or in the interactions? Or in the combination of substrate and interactions?

Complex processes yield simple products (think about products of thinking such as a newspaper article, or a poem, or manufactured goods such as a sewing thread). What happened to the complexity? Was it somehow reduced, "absorbed, digested, or assimilated"? Is it a general rule that, given sufficient time and resources, the simple can become complex and the complex reduced to the simple? Is it only a matter of computation?

We can resolve these apparent contradictions by closely examining the categories we use.

Perhaps simplicity and complexity are categorical illusions, the outcomes of limitations inherent in our system of symbols (in our language).

We label something "complex" when we use a great number of symbols to describe it. But, surely, the choices we make (regarding the number of symbols we use) teach us nothing about complexity, a real phenomenon!

A straight line can be described with three symbols (A, B, and the distance between them) - or with three billion symbols (a subset of the discrete points which make up the line and their inter-relatedness, their function). But whatever the number of symbols we choose to employ, however complex our level of description, it has nothing to do with the straight line or with its "real world" traits. The straight line is not rendered more (or less) complex or orderly by our choice of level of (meta) description and language elements.

The simple (and ordered) can be regarded as the tip of the complexity iceberg, or as part of a complex, interconnected whole, or hologramically, as encompassing the complex (the same way all particles are contained in all other particles). Still, these models merely reflect choices of descriptive language, with no bearing on reality.

Perhaps complexity and simplicity are not related at all, either quantitatively, or qualitatively. Perhaps complexity is not simply more simplicity. Perhaps there is no organizational principle tying them to one another. Complexity is often an emergent phenomenon, not reducible to simplicity.

The third possibility is that somehow, perhaps through human intervention, complexity yields simplicity and simplicity yields complexity (via pattern identification, the application of rules, classification, and other human pursuits). This dependence on human

input would explain the convergence of the behaviors of all complex systems on to a tiny sliver of the state (or phase) space (sort of a mega attractor basin). According to this view, Man is the creator of simplicity and complexity alike but they do have a real and independent existence thereafter (the Copenhagen interpretation of a Quantum Mechanics).

Still, these twin notions of simplicity and complexity give rise to numerous theoretical and philosophical complications.

Consider life.

In human (artificial and intelligent) technology, every thing and every action has a function within a "scheme of things". Goals are set, plans made, designs help to implement the plans.

Not so with life. Living things seem to be prone to disorientated thoughts, or the absorption and processing of absolutely irrelevant and inconsequential data. Moreover, these laboriously accumulated databases vanish instantaneously with death. The organism is akin to a computer which processes data using elaborate software and then turns itself off after 15-80 years, erasing all its work.

Most of us believe that what appears to be meaningless and functionless supports the meaningful and functional and leads to them. The complex and the meaningless (or at least the incomprehensible) always seem to resolve to the simple and the meaningful. Thus, if the complex is meaningless and disordered then order must somehow be connected to meaning and to simplicity (through the principles of organization and interaction).

Moreover, complex systems are inseparable from their environment whose feedback induces their self-organization. Our discrete, observer-observed, approach to the Universe is, thus, deeply inadequate when applied to complex systems. These systems cannot be defined, described, or understood in isolation from their environment. They are one with their surroundings.

Many complex systems display emergent properties. These cannot be predicted even with perfect knowledge about said systems. We can say that the complex systems are creative and intuitive, even when not sentient, or intelligent. Must intuition and creativity be predicated on intelligence, consciousness, or sentience?

Thus, ultimately, complexity touches upon very essential questions of who we, what are we for, how we create, and how we evolve. It is not a simple matter, that...

III. Intersubjectivity and Communications

The act of communication implies that the parties communicating possess some common denominators, share some traits or emotions, and are essentially more or less the same.

The Encyclopaedia Britannica (1999 edition) defines empathy as:

"The ability to imagine oneself in another's place and understand the other's feelings, desires, ideas, and actions. It is a term coined in the early 20th century, equivalent to the German *Einfühlung* and modelled on 'sympathy'."

Empathy is predicated upon and must, therefore, incorporate the following elements:

1. Imagination which is dependent on the ability to imagine;
2. The existence of an accessible Self (self-awareness or self-consciousness);
3. The existence of an available Other (other-awareness, recognizing the outside world);
4. The existence of accessible feelings, desires, ideas and representations of actions or their outcomes both in the empathizing Self ("Empathor") and in the Other, the object of empathy ("Empathee");
5. The availability of common frames of reference - aesthetic, moral, logical, physical, and other.

While (a) is presumed to be universally present in all agents (though in varying degrees), the existence of the other components of empathy cannot be taken for granted.

Conditions (b) and (c), for instance, are not satisfied by people who suffer from personality disorders, such as the Narcissistic Personality Disorder. Condition (d) is not met in autistic people (e.g., those who suffer from Asperger's Disorder). Condition (e) is so totally dependent on the specifics of the culture, period and society in which it exists that it is rather meaningless and ambiguous as a yardstick.

Thus, the very existence of empathy can be questioned. It is often confused with intersubjectivity. The latter is defined thus by "The Oxford Companion to Philosophy, 1995":

"This term refers to the status of being somehow accessible to at least two (usually all, in principle) minds or 'subjectivities'. It thus implies that there is some sort of communication between those minds; which in turn implies that each communicating mind is aware not only of the existence of the other but also of its intention to convey information to the other. The idea, for theorists, is that if subjective processes can be brought into agreement, then perhaps that is as good as the (unattainable?) status of being objective - completely independent of subjectivity. The question facing such theorists is whether intersubjectivity is definable without presupposing an objective environment in which communication takes place (the 'wiring' from subject A to subject B). At a less fundamental level, however, the need for intersubjective verification of scientific hypotheses has been long recognized". (page 414).

On the face of it, the difference between intersubjectivity and empathy is double:

1. Intersubjectivity requires an EXPLICIT, communicated agreement between at least two subjects.
2. It pertains to EXTERNAL things (so called "objective" entities).

Yet, these "differences" are artificial. This is how empathy is defined in "Psychology - An Introduction (Ninth Edition) by Charles G. Morris, Prentice Hall, 1996":

"Closely related to the ability to read other people's emotions is empathy - the arousal of an emotion in an observer that is a vicarious response to the other person's situation... Empathy depends not only on one's ability to identify someone else's emotions but also on one's capacity to put oneself in the other person's place and to experience an appropriate emotional response. Just as sensitivity to non-verbal cues increases with age, so does empathy: The cognitive and perceptual abilities required for empathy develop only as a child matures... (page 442)

Thus empathy does require the communication of feelings AND an agreement on the appropriate outcome of the communicated emotions (an affective agreement). In the absence of such agreement, we are faced with inappropriate affect (laughing at a funeral, for instance).

Moreover, empathy often does relate to external objects and is provoked by them. There is no empathy in the absence of an (external) empathetee. Granted, intersubjectivity is confined to the inanimate while empathy mainly applies to the living (animals, humans, even plants). But this distinction is not essential.

Empathy can, thus, be recast as a form of intersubjectivity which involves living things as "objects" to which the communicated intersubjective agreement relates. It is wrong to limit our understanding of empathy to the communication of emotions. Rather, it is the intersubjective, concomitant experience of BEING. The empathor empathizes not only with the empathetee's emotions but also with his or her physical state and other parameters of existence (pain, hunger, thirst, suffocation, sexual pleasure etc.).

This leads to the important (and perhaps intractable) psychophysical question.

Intersubjectivity relates to external objects: the subjects communicate and reach an agreement regarding the way THEY have been AFFECTED by said external objects.

Empathy also relates to external objects (to Others) - but the subjects communicate and reach an agreement regarding the way THEY would have felt had they BEEN said external objects.

This is no minor difference, if it, indeed, exists. But does it really exist?

What is it that we feel in empathy? Do we feel OUR own emotions/sensations, provoked by an external trigger (classic intersubjectivity) or do we experience a TRANSFER of the object's feelings/sensations to us?

Probably the former. Empathy is the set of reactions - emotional and cognitive - triggered by an external object (the Other). It is the equivalent of resonance in the physical sciences. But we have no way of ascertaining that the "wavelength" of such resonance is

identical in both subjects.

In other words, we have no way of verifying that the feelings or sensations invoked in the two (or more) subjects are the same. What I call "sadness" may not be what you call "sadness". Colours, for instance, have unique, uniform, independently measurable properties (their energy). Even so, no one can prove that what I see as "red" is what another person (perhaps a Daltonist) would call "red". If this is true where "objective", measurable phenomena, like colors, are concerned - it is infinitely more so in the case of emotions or feelings.

We are, therefore, forced to refine our definition:

Empathy is a form of intersubjectivity which involves living things as "objects" to which the communicated intersubjective agreement relates. It is the intersubjective, concomitant experience of BEING. The empathor empathizes not only with the empathee's emotions but also with his physical state and other parameters of existence (pain, hunger, thirst, suffocation, sexual pleasure etc.).

BUT

The meaning attributed to the words used by the parties to the intersubjective agreement known as empathy is totally dependent upon each party. The same words are used, the same denotates, but it cannot be proven that the same connotates, the same experiences, emotions and sensations are being discussed or communicated.

Language (and, by extension, art and culture) serve to introduce us to other points of view ("what is it like to be someone else" to paraphrase Thomas Nagle). By providing a bridge between the subjective (inner experience) and the objective (words, images, sounds), language facilitates social exchange and interaction. It is a dictionary which translates one's subjective private language to the coin of the public medium. Knowledge and language are, thus, the ultimate social glue, though both are based on approximations and guesses (see George Steiner's "After Babel").

But, whereas the intersubjective agreement regarding measurements and observations concerning external objects IS verifiable or falsifiable using INDEPENDENT tools (e.g., lab experiments) - the intersubjective agreement which concerns itself with the emotions, sensations and experiences of subjects as communicated by them IS NOT verifiable or falsifiable using INDEPENDENT tools.

The interpretation of this second kind of agreement is dependent upon introspection and an assumption that identical words used by different subjects possess identical meanings. This assumption is not falsifiable (or verifiable). It is neither true nor false. It is a probabilistic conjecture, but without an attendant probability distribution. It is, in short, a meaningless statement. As a result, empathy itself is meaningless.

In human-speak, if you say that you are sad and I empathize with you, it means that we

have an agreement. I regard you as my object. You communicate to me a property of yours ("sadness"). This triggers in me a recollection of "what is sadness" or "what is to be sad". I say that I know what you mean, I have been sad before, I know what it is like to be sad. I empathize with you. We agree about being sad. We have an intersubjective agreement.

Alas, such an agreement is meaningless. We cannot (yet) measure sadness, quantify it, crystallize it, access it in any way from the outside. Both of us are totally and absolutely reliant on your introspection and on my introspection. There is no way anyone can prove that my "sadness" is even remotely similar to your sadness. I may be feeling or experiencing something that you might find hilarious and not sad at all. StillPsychology Articles, I call it "sadness" and I empathize with you.