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Einstein's Gulf: Can Evolution Cross It?

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Albert Einstein, one of the greatest scientists of all time, described the "gulf" that logically separates the concrete world of hard objects on the one hand from the abstract world of ideas on the other. He wrote:

We have the habit of combining certain concepts and conceptual relations (propositions) so definitely with certain sense experiences that we do not become conscious of the gulf—logically unbridgeable—which separates the world of sensory experiences from the world of concepts and propositions (1944, p. 289).

Einstein's "gulf" can be pictured as shown in figure 1.



Figure 1 Einstein's Gulf

On the one side, we find the real world of objects, events, and tensional space-time relations. On the other side, we find fully abstract representations that contain information about the material world. That articulate information is abstracted first by our senses, secondarily by our bodily actions, and tertiarily by our ability to use one or more particular languages (e.g., English, French, Navajo, etc.). Between the two realms shown in figure 1, we find what appears to be an uncrossable gulf.

A small part of the evolutionists' problem is that hard objects are never observed spontaneously to transform themselves (on their own recognizance) into abstract ideas. The sun cannot sky-write the fact that it is about 93,000,000 miles from the earth. Neither do events transform themselves automatically into propositions. The meteor that collided with the earth leaving the crater out near

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Winslow, Arizona, cannot appear on CNN to tell of its journey, or to announce how hot it got streaking across the sky. Nor do space-time relations perceive, define, or narrate their unfolding over time. Events and relations between objects in time and space do not come stamped with date, time, and place of manufacture. While the earth may be affected by the moons of Jupiter in ways that science might detect, a planet is no more able to announce its age or recount its history, or declare the forces to which it is subject, than a dog can recite his pedigree or pronounce his mother's name.

But all of the foregoing is hardly apt to be seen as a great difficulty to the lumbering clumsy logic that evolutionists typically apply. Nevertheless, Einstein's Gulf is hard to get around. For any materialistic theory of evolution—i.e., the kinds espoused by Darwin, Freud, Marx, Hitler, Stalin, Sagan, Gould, etc.—all of which propose that non-living chemicals sprang to life which eventually evolved abstract thought, Einstein's Gulf produces a logical burden under which they collapse. All those theories fail to show in a comprehensible and plausible way how it is possible for *inert matter to cross Einstein's Gulf*.

What is required is the transformation of an undifferentiated continuum of chaos into the articulate design known to us only through a common human language as suggested in figure 2. For instance, consider the paper you are presently reading. I am writing these words in English, and, if you are understanding them, you must be doing so by finding yourself in possession of a

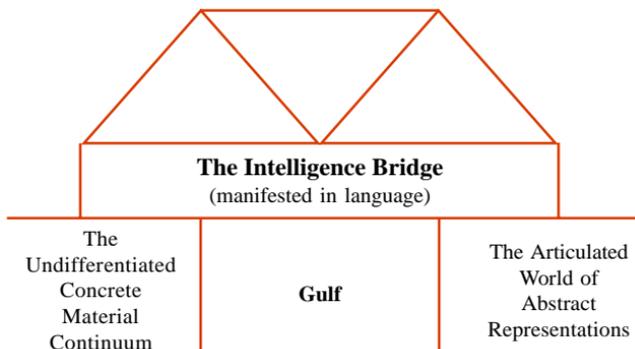


Figure 2 The Bridge over Einstein's Gulf, ie., Intelligence as manifested in the unique design of the human language capacity.

similar language capacity and the same language, English. Apart from such a language capacity, it has been rigorously demonstrated that not even so much as a single object can be pointed out and agreed upon (Peirce, 1897; Oller, 1996). Without the assistance of a particular human language, no two individuals can know for certain that they are looking at the same object. Mere pointing in the direction of an object, or even a moving picture without words, cannot assure determinate understanding. Pointing is intrinsically ambiguous with respect to whatever may lie along the line of sight or pointing. To disambiguate the possibilities requires the assistance of the conventional symbols of a language.

Only through the powers uniquely vested in the human language capacity, which is certainly *not* shared by apes (see Sebeok, 1980; Povinelli, 1994), is it possible for us even to define what is meant by the realm of abstract ideas. The fact that such abstractions can be systematically associated with the material world in the manner of true representations is an undeniable miracle (exactly as Einstein claimed). In 1936, after explaining that he meant nothing more than the “comprehensibility” of the material world in the “most modest sense” he asserted plainly:

The fact that it is comprehensible is a miracle (1936, 0.61).

At any rate, no one who has offered a denial (Cziko, 1995), has given even a slightly plausible account of how material objects can be spontaneously forced to enter the realm of articulate and intelligent thought.

We can be more specific. What is required of Darwinian dull and aimless principles of random change (mutation) and natural selection (i.e., death and destruction) is not merely to produce the first living thing (a formidable task), but also to guide its development to the human language capacity. Unfortunately, 20 billion years of time is not a big enough place to hide from the demand for a plausible explanation. But none has been offered by any evolutionist of any stripe.

In fact, empirical studies undermine that hope of orthodox evolution that accidents of history enabled some ape-like ancestor to cross Einstein’s Gulf by accidentally starting to speak intelligibly through arbitrarily chosen, conventional symbols. MIT professor Noam Chomsky wrote in 1972 that: “Human language appears to be a unique phenomenon, without significant analogue in the animal world (1972, p. 68).” In another place, he wrote:

Some intellectual achievements, such as language learning, fall strictly within biologically determined cognitive capacity. For these tasks, we have “special design,” so that cognitive structures of great complexity and interest develop fairly rapidly and with little if any conscious effort (p.17).

In response, Patterson and Linden (1981), in the book about a prodigy gorilla named Koko, accused Chomsky of “a creationist view of the universe” (P. 204).

But the mere absence of materialistic transformations of objects into ideas is not the real problem. The *real* problem is that there *is no plausible way to imagine the transformation of concrete substance into abstract representation without the pre-existence and intervention of a well-designed embodied intelligence*. What is required is something along the lines of a being created in the image of God. A rock cannot perceive itself or express any consciousness of its states or relations. It does not know whether it is hurtling through space at great speed, exploding into a billion bits of dust, or lying at the bottom of a river with all its boundaries intact. Objects, events, and brute forces are less able to change themselves into concepts, ideas, and propositions than monkeys pecking at typewriters are apt to accidentally write the plays of Shakespeare. The fact is that a hard object cannot materially be transformed into an idea because ideas are abstract (invisible and intangible) whereas hard objects are concrete (visible and tangible).

As far as we can tell from science, hard objects never just accidentally happen to cross Einstein’s Gulf, and logic shows why such an accidental crossing is impossible. In fact, Einstein said that the “gulf” was “logically unbridgeable” (1944, p. 289).

Neither can the events that involve hard objects, nor the space-time relations that they constitute, just automatically and accidentally turn themselves into comprehensive propositions or prepositional relations, such as are found in a true narrative (of the sort that the Bible claims to be). To effect such miraculous transformations requires the sort of design that is only known by human beings through the abstract signs and symbols of natural languages. While all other living organisms evidently benefit from the genetic designs upon which their existence depends (or else they would not exist at all), they are not able to become even slightly aware of it. The smartest chimp who ever lived could have no more understanding of the fundamental problems of intelligence than an amoeba. To really enter the fully abstract world on the opposite side of Einstein's Gulf requires a peculiar kind of intelligence—in particular, the kind that the Bible describes as “the image of God.” It requires the power to gain access to the Logos, i.e., the human language capacity. But to do so requires the special kind of bridge known as intelligence.

Now here lies the gauntlet for evolutionary philosophies of all kinds and varieties: Let them show how, if they are able, a concrete object can become without the intervention of articulate intelligence, an abstract idea.

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