Claims of Truth and Webs of Trust. A Hypothetical Debate (2005-09-06 17:56)

Most people have no way to determine the truth of all but the most simplistic factual claims, which does not keep anyone from having strong opinions. Let's take the evolution v. creationism (or "intelligent design") debate. Suppose that you argue in favor of creationism. I claim in response:

> "The theory of evolution is among the most secure elements in all of human knowledge. It is on par with claims such as: matter is made of atoms, DNA transmits the blueprint of organisms from generation to generation, light is an electromagnetic wave, which, at times, also behaves like a particle, etc. Any form of creationism or intelligent design is nonsense."

How do I know that? I have not conducted any experiments myself, nor have I spent any significant time studying the results of the experiments conducted by others. The answer is that I trust science as an institution. I trust that the adversarial process of promoting competing theories, of peer review, of organized research with its mixed rewards of academic recognition and authority within largely autonomous institutions, justifies my belief in the truth of a proposition endorsed by the scientific community. In other words, my trust in a particular social organization underwrites my truth claims. Trust is therefore epistemologically prior to truth.

The question is thus, whom do I trust? I trust whoever has been designated as trustworthy by the trusted institution (which, of course, is a reflexive definition). For starters, I trust experts with the right credentials, for example, a Ph.D. in evolutionary biology from a reputable university. The credentials are a proxy for the truth of the statements made by their bearer. In addition to verifying credentials, I will also make sure that the expert talks about her field of expertise, that her knowledge is current, and she is an accepted (i.e., trusted) authority within the field, which is established primarily through reputation, publications, review articles, prizes, etc. Once the credentialing process has been completed to my satisfaction, I have validated my truth claim, in much the same manner as I validate the identity of an email recipient through the degree of trust placed in her public PGP key by others. The defensibility of truth claims thus rests almost solely on social webs of institutional and interpersonal trust relations. In a sense that improves our ability to critically assess the truth of a

proposition, because it seems that people are much better equipped to make judgments as to whether someone is trustworthy compared to whether something is true.

Going back to the initial question, I believe that the theory of evolution is correct and any form of creationism is nonsense, because my web of trust, within which I can justify my beliefs, is broader, denser, and deeper than yours. The institutions that I rely on are in turn relied on by more reputable institutions than the ones that you base your trust on. The individuals whose assessment I trust are affiliated with more reliable institutions than the ones that you trust, and so on. I am right and you are wrong, because my claims are backed by a more relevant, reliable, and higher quality social consensus than yours. Once again, truth is a function of social arrangements and webs of trust.

Now suppose that, hypothetically, in response to my defense, you are able to drop disreputable institutions such as the "Discovery Institute and a few associated cranks as nodes from your relied-upon web of trust. Suppose that you point me to a group of people, who, by my own standards, are trustworthy. Suppose further that these people speak out in favor of creationism. What now? At this point I must decide more specifically whom to trust, the members of my "team evolution" or those of your "team creationism." On what grounds can I make that decision?

The theory of cultural cognition [1] suggests that I will make that decision on the grounds of basic cultural values. I will be inclined to place trust in people who share a comparable outlook on life with me in respect to two pairs of values: individualism—collectivism, and hierarchism—egalitarianism. All significant flavors of trust, or so the cultural theorists argue, are a result of these ingredients. As an egalitarian, I will tend to trust those who share these values. As an hierarchist, you will trust those who share your world-view. But how do I know whether "my" scientists are egalitarians, and how do you know that "yours" are hierarchists? By looking at who else trusts them. "My" team will be part of a larger network of trust, and within that network, I will be able to recognize cultural fit without great difficulty, simply because I am already part of that network. For example, if Brian Leiter [2] speaks highly of Paul Myers [3], I will be inclined to take his views seriously. Conversely, you will probably be inclined to discount his views for precisely the same reason. So, in the end, truth is matter of trust, and trust is a matter of cultural values. Or, as Dan Kahan and Donald Braman put it: "[C]ultural commitments are prior to factual beliefs."

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At that point, the critical question about the power of rational discourse arises, about our ability (or inability) to transcend our social network of trust in search of "truly" reliable authorities as proxies for truth. I am cautiously optimistic in that regard, but others disagree. For example, Kahan and Braman would probably hold that my example above is unrealistic. Cultural biases don't politely wait their turn until I arrive at a point where I must choose between two teams of equally well-credentialed and trusted experts. In reality, such predispositions are much more powerful and don't merely tip the scale in the case of equilibrium. Rather, they will let me hold on to factual claims that resonate with my value orientations even when faced with mountains of evidence to the contrary, or rather, even if confronted with an overwhelmingly large, dense, and deep web of trust underwriting a contrary factual position. The latter, of course, is true with respect to creationism and intelligent design. "Their" web of trust is thin and connected to nodes that discredit those who question the theory of evolution. The fact that truth is a social construct doesn't mean that you can't be wrong.

I remain hopeful that methodical critical thinking, actual or metaphorical cross examinations, and our (hopefully) increasing sophistication in evaluating the quality of competing webs of trust (Daubert style), will permit us to distinguish truth from falsehood. That search for truth, however, in most instances, will really be a search for trustworthiness.

[tags]philosophy, creationism, intelligent design, cultural cognition[/tags]

1. http://research.yale.edu/culturalcognition/

2. http://leiterreports.typepad.com/

3. http://pharyngula.org/index/weblog/about/

4. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=746508

Epistemological Implications of Radical Constructivism. A Response to Critics.

(2005-10-08 20:47)

Several readers criticized my argument in Claims of Truth and Webs of Belief [1] as overly pessimistic. One reader wrote that there is no reason to deny the existence of an external, mind-independent reality and that the progress of science would be a miracle if things didn't exist ontologically. Underlying this and other reactions is a visceral unease with my claim that truth, in practice, is largely a function of interpersonal trust. Another reader criticized my argument from a practical point of view: Isn't saying that truth claims, no matter how well founded or absurd, ultimately rest on nothing but various measures of coherence, lending support to the creationism crowd and other enemies of reason? I am not dismissing any of these criticisms, and I specifically share the latter concern, but I would like to explain the philosophical backdrop of my argument a bit more in detail.

My starting point is the constructivist position [2] that we actively construct our world rather than it being determined by a mind-independent reality. Cognition is instrumental. It serves the organization of the experiential world, not the discovery of an ontological reality. Truth is what works, not what is. That position is not based on a transcendental armchair argument, even though the modern constructivist project owes a huge debt of gratitude to Kant. Rather, it is based on the neurobiology of cognition and is naturalistic. The fundamental postulate of constructivism is that the mind is operationally closed. Only a change in the state of one neuron leads to a change in another. Unless a neuron changes its state, there can be no change in the cognitive system. Moreover, "the response of a nerve cell does not encode the physical nature of the agents that caused its response. Encoded is only 'how much' at this point on my body, but not 'what.'" (H. v. Foerster) Because of that principle of undifferentiated encoding, any perception of and any information about the world must be a product of the mind. If that statement is true (which I think it is), then any correspondence theory of reality must be false. It follows that we can neither deny nor confirm the existence of a mind-independent reality. Note that I am not denying the existence of an outside world; it would be shocking if it didn't exist in some way, shape, or form. My claim is simply that cognition is not a process of mapping ontological entities onto cognitive structures, but rather a process of

responding to, organizing, and finally making conscious sense of changes that are internal to the cognitive system. (One could say that the nervous system observes the body by connecting one electric charge to another, and that the mind observes the nervous system by connecting one thought to another. Both systems are structurally coupled - no thought without neural activity - but remain operationally closed.)

Thus, I disagree with Popper's critical rationalism and its corollary that our internal models will over time ever more accurately represent the properties of "the real world." Rather, knowledge lives in the cavities of a real world that will forever remain beyond the horizon of possible experience. Our position can be compared to that of a crew born into a windowless WW II submarine (with a secret, limitless power supply) that pilots the boat solely by reading the dials, gauges, and instruments. Of course, the crew will, over time, come up with a model of the world "out there," a model that allows the captain to pilot the boat without crashing into reefs or exposing it to unsustainable pressure. But would that model resemble the way that we see the sea and the boat from the outside? I don't think so!

Accepting the postulate of the mind as a closed system has several important implications.

- First, we can no longer appeal to a mind-independent reality as a truth criterion. What we perceive as a mind-independent reality is a construct of the mind. That doesn't mean that the construct is arbitrary, it most certainly isn't. But no one can claim that his or her position is true because it corresponds to an ontological reality. We can claim, however, that one position is better - truer Ç - than another if it produces more favorable results. Bottom line is that since we can't leave our own minds, the only criteria for truth are viability, coherence, and consistency.

- Second, speech does not transmit meaning. Language is an activity, it is a highly sophisticated recursive coordination of behavior that triggers cognitive responses within the participating entities. (H. Maturana calls it "languaging"). Language doesn't change the fact that our minds are semantically closed. Since you can't (yet!) hook up your neurons to mine, I can only connect to my own thoughts, not to yours.

- Third, the goal of science is not to explain but to make predictions, to

bring order to our perceptions, and to enable us to act successfully in ever more creative ways.

- Fourth, for most everyday actions, the delusion of ontological objectivity is a useful shorthand. But once the presence of the observer cannot be ignored, for example, in quantum physics but also in questions of ethics, we need to abandon our simplifying assumptions and take the limitations of our cognitive apparatus into account. On a more speculative note, the persistence of the "subject perceives object" approach to cognition may well be explained by the fact that both subject and object are creations of our mind. At that basic level, they are thus commensurable. The correspondence theory of truth is therefore, in a sense, an adequate description of what's going on in our minds. We, as "subject-subjects" perceive that the "object-subject" (i.e., what we think of as I) perceives an "object," either correctly or incorrectly. Of course, both the object-subject and the object are constructs of our mind. If they weren't we would have no way of knowing whether the subject-object's claims about the object are true or false.

1. http://www.lawsocietyblog.com/archives/116

2. http://www.univie.ac.at/constructivism/pub/fos/riegler/

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