

Why People Dislike Radical Constructivism

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> Problem • Radical constructivism, although having a very successful base in research on mathematics and science education, has not become a generally accepted theory of knowledge. **> Purpose** • This paper discusses possible sources of aversion. **> Results** • The first section makes explicit the unavoidability of accepting the responsibility for one's thinking and acting, a responsibility that under stressful circumstances one would rather avoid. Another section suggests the origin of the human quest for certain knowledge. The third section introduces the notion of "stickiness of beliefs." **> Implications** • Constructivism has powerful implications for everyday attitudes and social relations with others. This paper, it is hoped, may induce some readers to investigate these implications. **> Key words** • Epistemology, resistances (conscious and unconscious), beliefs.

Introduction

Constructivist epistemology, although having a very successful base in research on mathematics and science education (e.g., Leslie Steffe at the University of Georgia, Paul Cobb at the University of Tennessee, Jere Confrey at North Carolina State University, Andreas Quale at Oslo University, Dewey Dysktra at Boise State University, Marie Laroche and Jacques Désautels at the Université Laval, and Hugh Gash at St. Patrick's College in Dublin), has not become a generally accepted theory of knowledge. In this paper I explore possible sources of aversion.

1. Shirking responsibility

Although I have written and said many times in public that radical constructivism (RC) tends to be unpopular because it implies that we are all responsible for what we say and do, I have never been pushed to explain this. Under ordinary circumstances people would not, I think, quarrel with my assertion. But I think they would want to exempt the well-known extreme situations of coercion. The notion that you are *forced* to say or do what a powerful agent requests by threatening your physical integrity or your life is probably as old as social interaction. But does that make it inescapable? As Maturana once said in a discussion: "There is no power if you don't concede it" (Maturana & Poerksen 2004). The

point that most people prefer to ignore is that in extreme situations there is still a choice you have to make: you can accept the threatening power and do as they demand, or you can force them to carry out their threat of physical injury or death. The fact that RC suggests that you are responsible even if you comply with what you are ordered or "forced" to do may be only dimly perceived but the suggestion is an intuitive source of aversion against this way of thinking.

2. The thirst for certainty

The infant's main task at the beginning of the cognitive career is to establish reliable relations between motor acts and what seem to be their effects. Infants would never learn to walk if they did not come to trust and later take for granted that a particular way of moving their legs does in fact move them along. From infancy until well into the teens and often later, the cognitive apprentice abhors ambiguity in the interpretation of experiences and in linguistic expressions unless they are introduced as jokes. It usually takes a great many failures to convince a mostly successful actor that his scheme of action is not foolproof. It is not only the expectation that what has so far worked must always work, it is also the wholly unwarranted conclusion that because it works, it has to reflect the structure of an independent reality.

3. The stickiness of beliefs

Sigmund Freud coined the expression "Die Klebrigkeit der Libido [The stickiness of libido]." In plain words, what you have become attached to is difficult to detach. I am borrowing Freud's expression because I think the same can be said of the so-called "justified beliefs" that we consider to be infallible knowledge. If a coffee dispenser does not respond to your coin by serving the coffee you want, you kick it, convinced it has misbehaved.

From the very beginning of our cognitive development we are given the impression that what we perceive is *there* as part of a real world, as a "thing in itself" that generates our experience. Words are thought to mean the same for everyone because they *refer* to things of that real world. No one ever tells us that Kant, as Vaihinger put it, saw the "thing-in-itself" and all the noumenal level as a heuristic fiction.

"Jede Vorstellung als Erscheinung wird als von dem, was der Gegenstand an sich ist, unterschieden gedacht,... das Letztere aber, X, ist nicht ein besonderes ausser meiner Vorstellung existierendes Objekt, sondern lediglich die Idee der Abstraktion vom Sinnlichen, welche als notwendig anerkannt wird." (Kant Opus postumum, Vol. XXI, quoted in Vaihinger 1986: 723)¹

1 | "Every representation as appearance will be thought as different from the thing in itself ...

Such a representation has to be generated in order to make possible any collaboration with others in tasks that could not be handled by one subject alone.

In science and the discussion of theories the stickiness of beliefs manifests itself in ways that are obvious to the impartial observer but often invisible to the speaker (or writer). I shall cite some examples taken from an author who is knowledgeable and well-versed in RC and epistemology in general.

Since his contributions to the journal *Cybernetics and Human Knowing* (1993) and to the Karl Jaspers Forum (2004) David Kenneth Johnson has been the most consistent critic of RC. He is also the most knowledgeable and has a fully developed theory of epistemology to pitch against constructivist writings. In dealing with his objections, I believe, I am covering many if not all of the fuzzier criticisms that have been brought forth by others. Johnson has recently published (with Matthew Silliman) *Bridges to the World* (2009), a discussion of theories of knowledge, mostly among three fictitious people: Russell represents Johnson's own point of view, Hans is the radical constructivist, and Alison, a teacher of literature, who is interested in the topic but has no axe to grind.

Johnson has mellowed a good deal since his earlier tirades against RC, and Russell, his representative in the dialogue, provides plenty of evidence that he has understood the constructivist principles. Nevertheless his attachment to a form of realism has not weakened.² Here is one of Russell's statements at the beginning of the dialogue:

however, the latter, X, is not a separate thing existing as object outside my representation but is nothing but the idea of my abstraction from the sensory that is deemed necessary." (my translation)

2| Johnson and others have formulated versions of "constructive realism," a way of thinking that seems to accept the cognitive inaccessibility of reality but maintains that we can generate reasonable but fallibilistic hypotheses about its structure. As these hypotheses can never be shown to be "true" they are what Vaihinger and Kant called

"Our constructions, stories, and images are subjective constructions, after all, not objectively existing things and relations. And they are subject to correction by better information about the things they are designed to represent." (Johnson & Silliman 2009: 8)

Several things are implied by this passage.

1 | That our constructions "are designed to represent" things. What things? The preceding sentence implies that they are "objectively existing things and relations."

2 | That relations have objective existence. This is another belief that is a heuristic fiction. I may consider one of the two

trees that I see through my window taller than the other. But it is only a comparison that sets up this relation. Like all relations, it is the result of a perceiver's operation. This result does not become any more "real" if

I observe other perceivers performing the same operation.

3 | That our constructs are designed to *represent things as they are*.

4 | That our constructs "are subject to correction by better information about the things they are designed to represent. Given point (3), this claims that we obtain "information" from "things as they are."

As constructivists since Jean Piaget have not tired of reiterating, such corrections are an illusion, because what we call knowledge is necessarily composed of subjective abstractions from experience and not the representation (faulty or correctible) of an objective reality.

"Au nom de quel critère – s'il en existe de tel – sait-on que l'on atteint le donné en tant que donné?" (Jonckheere, Mandelbrot & Piaget 1958: 22)³

"heuristic fictions." From a constructivist point of view there is nothing wrong with such a fiction, as long as it is not presented as a representation of reality.

3| "On the strength of what criterion – if such a thing existed – could one know that one

The belief that what we call knowledge *must* be a representation (good or bad) of an independently existing world goes back to early Greek philosophy where some of the pre-Socratics already claimed that any such representation was impossible. Neither have the powerful arguments presented by Hume and Kant shaken its general acceptance.

As the dialogue is triggered by a two-page letter from Jules, one of Alison's students, who has constructivist ideas, the precise meaning of the discussants' arguments often requires quotations to be longer than usual.

"Russell: I am happy to explain. The proposition 'I construct the world in which I live' might mean two different things. If it means 'I have some control over what I choose to do, and thus can influence the way the world is, or at least how it appears to me,' then I have no objection. ... However, if Jules' statement means what it actually seems to say, namely, 'the world that I experience is entirely my own construction,' then it is solipsistic and clearly false.

"Hans: ... I agree that the solipsist's truncated view of reality makes little sense. I am far from convinced, however, that it has anything to do with constructivism. After all, as Jules nicely points out, constructivism is a theory of knowing, not being." (Johnson & Silliman 2009: 9–10)

Here is the "stickiness" of the belief that what we call knowledge *must by definition* reflect aspects of a real world, a belief that prevents people from seeing the fact that all our knowledge is abstracted from experience, pertains to experience, and has no demonstrable relation to anything beyond the experiential interface.

A few pages later, the discussion turns to Dr. Johnson's famous "refutation" of Berkeley's idealistic epistemology by kicking a stone (a "rock" in American English) on the road.

"Russell: But *rocks*, in contrast to *our thoughts of rocks*, surely do exist outside of thought, a fact that alone explains Alison's stumbling on this rock along a road in Vermont without first thinking it into existence. The capacity of the world to sur-

has grasped the given as it was given?" (my translation)



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was born in Munich, 1917, of Austrian parents, and grew up in Northern Italy and Switzerland. Briefly studied mathematics in Zürich and Vienna. Returned to Italy in 1946, worked as a journalist, and collaborated until 1961 in Ceccato's *Scuola Operativa Italiana* (language analysis and machine translation). From 1962 director of US-sponsored research project in computational linguistics. From 1970, he taught cognitive psychology at the University of Georgia, USA. Professor Emeritus in 1987. He held several honorary doctorates. Ernst von Glasersfeld died on 12 November 2010. Web site: <http://www.vonglasersfeld.com>

prise us is good evidence beyond and prior to our conception or perception." (ibid: 17)

Only the *belief* that the world must be structured the way we see it, *before* we experience it, can justify the assumption that what Alison stumbled on was the kind of perceptual item we call "rock" before anyone had perceptually constructed it. It assumes that our senses convey ready-made "data" from an outside world, when there is no conceivable way of showing or proving that they could do such a thing. The concept of "rock," and with it the world, arise only *after* one has stumbled and wonders why.

Conclusion

The anti-constructivist literature is vast, and to examine all the claims it makes would require a book-sized and frequently repetitive effort. I have focused on a few arguments that crop up in different forms. There is no point in reiterating the basic constructivist theses. They have been presented in articles and books in what many readers have described as lucid language. That people refuse to accept them, is, as I proposed at the beginning of this article, due to the reluctance to relinquish certain traditional beliefs. I therefore close with a particularly clear example of this stickiness:

"...it can be stated that any epistemological radicalism lacks plausibility. There is ample evidence that we still can adopt a critical realist outlook, even if every part of our world view is a construction." (Saalmann 2007: 1)

Plausibility requires a belief system in view of which something can be plausible. It usually is the system the author takes for granted. Saalmann's claim that there is ample evidence remains vacuous if no such evidence can be demonstrated and the realist outlook the author has in mind, like all other forms of realism, takes as evidence of "Truth" the fact that certain things work as expected in the domain of our experience. But experience can never serve as testing ground for ontological assumptions.

Afterword by Jack Lochhead

While Ernst von Glasersfeld enthusiastically embarked on writing this piece for the special issue on "Can radical constructivism become a mainstream endeavor," his powers had started to fail him when it was time to revise the article and thus he was not able to review the final edits. In a sense, this is an unfinished work, and, as Ernst's last paper, is not necessarily what he might have said had his health been stronger.

What I think will be historically significant about this paper is that it shows that right up to his final days Ernst held strongly to those elements of radical constructivism that are the most radical and most difficult for us to fully accept. While Ernst has never challenged the notion that there must be some relationship between our constructions and the external reality we believe exists, he strongly denies the possibility of our knowing what that relationship might be or how the term "exists" should be interpreted.

The arguments he presents in this paper are fertile ground for a whole new generation of debate, and I know he shares my hope that this paper will construct a foundation for the demise of some bottles of wine.

References

- Johnson D. K. (1993) The metaphysics of constructivism. *Cybernetics & Human Knowing* 1(4): 27–41.
- Johnson D. K. (2004) Fallibilistic realism and skeptical worries. *Karl Jaspers Forum TA 73*, Commentary 16. Available at <http://www.kjfc.ca/73-C16JO.htm>
- Johnson D. K. & Silliman M. R. (2009) *Bridges to the world*. Sense, Rotterdam.
- Maturana H. R. & Poerksen B. (2004) From being to doing. The origins of the biology of cognition. Carl Auer, Heidelberg.
- Jonckheere, A., Mandelbrot, B., & Piaget, J. (eds.) (1958) *La lecture de l'expérience*. PUF, Paris.
- Saalmann G. (2007) Arguments opposing the radicalism of radical constructivism. *Constructivist Foundations* 3(1): 1–6. Available at <http://www.univie.ac.at/constructivism/journal/3/1/001.saalmann>
- Vaihinger H. (1986) *Die Philosophie des Als Ob*. Reprint of the 9th Edition. Scientia, Aalen. Originally published in 1927. English translation: Vaihinger H. (1952) *The philosophy of "as if"*. Translated by C. K. Ogden. Routledge, London.

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