

conceptual scheme of metaphysics, presupposes a determinate metaphysics or should attempt to find metaphysical grounding for one's claims? I believe that there is no such transition. Werner concludes his convoluted and painstaking investigations by insisting that "RC seems to be still grounded in the DL [Descartes-Locke metaphysics] understanding of *experiences themselves* and their *thinkable* relation to external (ontological) reality" (§65). What does it mean that a given conception or theory or theoretical approach is grounded in metaphysics? Werner gives a very superficial and brief account of the notion of grounding. He writes:

“The metaphysical context of the *constructivism–realism* dispute should therefore be uncovered. This is what I mean by metaphysical grounding of RC, and at the starting point I mean nothing more than this.” (§22)

This is acceptable at the starting point, but what about the ending point? We are not given any clue as to how to fulfil our curiosity, as the word “grounding” does not even reappear in the article. From what has been said at the beginning, one can infer that for Werner the search for metaphysical grounding of RC is closely connected with the search for an appropriate metaphysical context for close examination of this view. Unfortunately, saying this is saying almost nothing, especially when contrasted with detailed and elaborate debates about metaphysical grounding in the rapidly burgeoning literature on this notion (see, e.g., Correia & Schnieder 2012).

« 6 » In any case, one of the most significant attempts to establish that the notion of knowledge does not have to be coupled with the notion of representation, taken as a concept involving heavy metaphysical apparatus, has been undertaken by Huw Price (2013). He introduces the complementary notions of “e-representation” and “i-representation.” The former is the notion of “answerability to the environment,” and the latter is the concept of inferential or functional role of expressions. The category of representation should not be assimilated here to the classical notion of representation, understood as a crucial element of one's mental architecture, since Price declares himself to be an advocate of a robust anti-representationalism that does not require a substantially construed

notion of truth or adequacy (according to Price, the true predicate plays merely the role of generalizing device). It also does not require metaphysical grounding, no matter how interpreted, since e-representations enable one to terminate philosophical analysis on the e-world, which is the “i-world of the scientific vocabulary” (Price 2013: 55), and i-representations allows one to remain at the level of discussion about asking for reasons. Although one may disagree with Price (for example, John MacFarlane 2014), it is apparent that thorough discussion about the need to incorporate metaphysical threads into contemporary debates on RC, or other views mentioned by Werner, ought to appeal to the Price's proposal, since it is one of the most intriguing anti-metaphysical accounts of the relationship between cognition or knowledge and the world.

**Adriana Schetz** is an assistant professor at the Institute of Philosophy, University of Szczecin, Poland. Her interests include philosophy of mind, cognitive science, philosophy of psychology, and especially the problem of perception, consciousness, and animal cognition. She is the author of a book *Biological Externalism in the Theories of Perception*, published in Polish in 2014.

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## Towards a Metaphysics for Constructivist Thought

Spyridon A. Koutroufinis

Technical Univ. of Berlin, Germany  
kout1967/at/mailbox.tu-berlin.de

> **Upshot** • My commentary has three aims. Firstly, to provide additional support to Konrad Werner's correct insight that radical constructivism is based on a radical distinction between experienced reality and ontological reality. This is a strong metaphysical statement. Secondly, that radical constructivism is implicitly rooted in Cartesian ontological dualism. Thirdly, that Whitehead's process ontology provides a fruitful foundation for Werner's thesis that perceptions are metaphysically significant.

« 1 » Konrad Werner criticizes the anti-metaphysical attitude of radical constructivism (RC), as it has been introduced by Ernst von Glasersfeld. He argues that von Glasersfeld grounds his epistemology on a strict distinction between the knowing subject and the known object or experienced reality and ontological reality (§§17, 19, 21, 66, 67). This, according to Werner, is a *metaphysical assumption*. It seems that Werner has found the pivotal point of RC (of which I was not aware before reading his article). In order to emphasize the correctness of Werner's argument, I will present some central ideas of leading theorists of RC.

« 2 » In his “An Introduction to Radical Constructivism,” von Glasersfeld tries to overcome subjective idealism and solipsism (which he considers as the inescapable fate of realism as soon as skeptical arguments are taken seriously) by claiming that:

“we must find our way back to the very first steps of our theories of knowledge. Among these early steps there is, of course, the definition of the relationship between knowledge and reality, and this is precisely the point where radical constructivism steps out of the traditional scenario of epistemology. Once knowing is no longer understood as the search for an iconic representation of ontological reality, but, instead, as a search for *fitting* ways of behaving and thinking, the traditional problem disappears. Knowledge can now be seen as something that the organism builds up in the attempt to order the as such amorphous flow of experience by establishing repeatable experiences and relatively reliable relations between them.” (Glaserfeld 1984a: 39)

« 3 » Von Glasersfeld, and with him other leading theoreticians of contemporary constructivist thought, *which includes more than RC*, do not try to solve epistemological issues but to let them vanish by reducing cognition and knowledge to biological functions that serve an organism's survival. Whether there is a correspondence between ontological and experienced reality (the problem of skepticism) would be an inappropriate question since knowledge would have to serve only biological survival. Thus theories of knowledge might be entirely separated from ontologies or theories of being.

« 4 » Von Glasersfeld and other proponents of constructivist thought, such as

Heinz von Foerster and Humberto Maturana, often use concepts such as “organism” (Glaserfeld 1984a: 22f, 30), “adaptation” (though in a “functional sense,” *ibid*: 20), and “fitness” (*ibid*: 21f) in their arguments. From the perspective of RC, those terms cannot be seen as representing something ontologically real in nature. They must be considered as our constructions, whose value consists of serving our survival. Indeed von Glaserfeld often refers to “us” as constructors of “our” experiences and knowledge by using the personal and possessive pronouns “we” and “our” (*ibid*: 18ff, 27ff). “We” would be “subjects” (*ibid*: 31, 34f) that construct the features of their “objects”:

“[The] continuity in the existence of an individual object is under all circumstances the result of operations carried out by the cognizing subject and can never be explained as a given fact of objective reality.” (*ibid*: 34)

« 5 » However, both the concept of “subject” and the distinction between subject and object are deeply rooted in Western metaphysics. Despite his anti-metaphysical attitude, von Glaserfeld does not seem to see a problem in always referring to “us” as “subjects.” This is probably because of what he believes to be a self-evident assumption:

“Constructivism necessarily begins with the (intuitively confirmed) assumption that all cognitive activity takes place within the experiential world of a goal-directed consciousness.” (*ibid*: 32)

So, intuition would confirm that each one of “us” is a “goal-directed consciousness.”

« 6 » Of course, “consciousness” is a highly metaphysical term, therefore its appearance in an anti-metaphysical philosophical text needs to be justified.

« 7 » Is it a coincidence that von Glaserfeld does not do so? Leading theorists of constructivist thought establish their supposedly entirely non-metaphysical epistemology on one and the same implicit assumption about the relation between consciousness and brain. In a series of publications, Heinz von Foerster – who for many (e.g., Schmidt 1987) is a proponent of RC (although he rejected this attribution, see, e.g., Foerster 2014) – introduces

different basic statements about the nature of all kinds of mental phenomena, which are grounded on the same *metaphysical* hypothesis, according to which *our brain produces all our subjective experiences*:

“‘[O]ut there’ there is no light and no color, there are only electro-magnetic waves; ‘out there’ there is no sound and no music, there are only periodic variations of the air pressure; [...] Finally, for sure, ‘out there’ there is no pain.’ [...] the fundamental question arises as to how does our brain conjure up the tremendous variety of this colorful world as we experience it any moment while awake, and sometimes in dreams while asleep. This is the ‘problem of cognition’ [...]” (Foerster 2003: 215)

« 8 » Von Foerster considers it an unquestionable fact that phenomenal qualities or qualia of conscious beings, such as sounds, colors, and pain are products of the brain. Starting from there, he reduces subjective aspects of experience to tangible and measurable spatio-temporally localizable events or objective physical data that take place in the brain. Humberto Maturana and Francisco Varela – who for many are proponents of RC as well (e.g., Schmidt 1987; but see criticism in Mitterer 2011) – also abide by this most fundamental metaphysical hypothesis of contemporary mainstream neuroscience. They are firmly convinced that subjective mental phenomena are produced in nervous systems, which they consider to be self-referential and, most importantly, structurally determined material systems (Maturana 1978: 47).

“[A]s scientists, we can deal only with unities that are structurally determined. That is, we can deal only with systems in which all their changes are determined by their structure [...]” (Maturana & Varela 1992: 96)

“The reader as he reads this understands what he understands because his structure in the present and, indirectly, his history so determine. Strictly speaking, nothing is an accident.” (*ibid*: 124)

« 9 » I have criticized these ideas elsewhere (Koutroufinis 1996: 91–98). Here, I will focus on a specific epistemological issue. With today’s technology, it is possible

to observe the activities of our own nervous system. Our own brain, as it appears, say, in an FMRI, is nothing but a subjective phenomenon within our experiential world. If we claim that our subjective phenomena are generated in our brains, as von Foerster, Maturana, and Varela think, we distinguish a very small piece of our experience by ascribing to it the magic ability to produce all the other phenomena, including itself. This generates the paradox that a part of the experiential world produces the whole experiential world. The neuroscientist Gerhard Roth, who was strongly influenced by RC, tried to solve this paradox by making a strict distinction between “two ontologically entirely different worlds, the (physical in the broadest sense) material real world of the organism and the cognitive ‘actual’ world [...] which are (probably) causally but not spatially connected” (Roth 1988: 238, my translation). These worlds contain the two ontologically different brains that each experiencing subject has:

“The brain that is accessible to me, that I, as an anatomist or physiologist [...], can behold and examine, exists inside my cognitive space and is certainly not identical with the real brain that constitutes the cognitive space” (*ibid*: 238f, my translation).

« 10 » From Roth’s constructivist perspective, the strict ontological separation that he makes between the “real world” and the merely cognitive “actual world” is necessary. But this is, of course, a highly metaphysical position. However, von Glaserfeld’s understanding of RC does not support Roth’s distinction between brains that belong to two ontologically different worlds. At least in their early publications, von Foerster, Maturana, Varela, and Roth think in a strictly biological way. Josef Mitterer describes Maturana as a bio-constructivist (2011), which cannot be said for von Glaserfeld. Nevertheless his reference to organisms as constructors of their experienced world (Richards & Glaserfeld 1987:195; see above) brings RC in a certain proximity to biological-constructivist approaches that can lead to reductionist misinterpretations.

« 11 » This short exposition of ideas of influential theorists of the wide constructivist tradition shows that contemporary

constructivist thought is grounded on a strict distinction between experienced and ontological reality. My reference to leading theorists of RC and other constructivist approaches underscores the correctness of Werner's argument that RC is based on a metaphysical assumption that separates experienced reality from ontological reality.

« 12 » Another essential point of Werner's criticism is the relation between what he describes as Descartes-Locke (DL) metaphysics and RC (§§65–67). Von Foerster's strict separation between phenomenal qualities (colors, sounds, and pain), on the one side, and the material structure (brain) that would generate them, on the other side, has deep roots in Western metaphysics, especially in ancient atomism and in DL-metaphysics; Descartes himself clearly separated phenomenal qualities from objective features of material entities in his second and sixth meditations (Med. 2: §§11f; Med. 6: §15). This separation follows logically from Descartes's central metaphysical position, the ontological division between mind and matter. As Werner says (§45), although Descartes was not a materialist, his ontological division became the basis of materialistic neuroscience, in which I would also count Maturana's and Varela's understanding of the nervous system as a structurally determined material unity. Roth's metaphysical separation between the phenomenal "actual world" and the "material real world" is a typical mind-body split of materialistic interpretations stemming from DL-metaphysics, according to which "the phenomenal is not real, and the real is not phenomenal," as Werner says (§46).

« 13 » Finally I would like to embrace Werner's position that Platonic-Leibnizian (PL) metaphysics does not commit one to an ontological separation between perception and reality (§§55–58). I should, however, say that Werner's understanding of Aristotle (who certainly belongs to the PL tradition) – as saying that perception is the actualization of some aspects of reality (§55) – is ambiguous. In *De Anima* (Book II and III), Aristotle outlines a theory of perception according to which the act of perception actualizes only the potency of the faculty of sense and not of the potency of the object. The subject perceives aspects of the perceived object that are already actualized in it, i.e., before

perception takes place. Perception does not influence the essence of the perceived object; therefore Aristotle *criticizes* the "earlier natural philosophers":

“They supposed that without seeing there was neither white nor black, and without tasting no flavour.” (*De Anima* III, 426 a20–22)

« 14 » Werner's position on the intrinsic connection between the subject and the object of perception in PL-metaphysics applies more to Leibniz's theory of monads than to ancient metaphysics. Since monads are conceived of as individual substances, the essence of which implies necessarily all events of their history, including perceiving and being perceived by other monads, I agree with Werner's claim that Leibnizian metaphysics supports his position (§§56f).

« 15 » I think, nonetheless, that Alfred North Whitehead's process ontology supports Werner's position more than all other metaphysical systems. Whitehead, whom I count in the PL tradition of rationalism, considers the most elementary, indivisible facts of reality to be processes and not substances. He calls them *actual entities* or *actual occasions*. In contrast to Descartes, Whitehead anchors his central argument on the basic assumption that "relatedness" is dominant over "quality" (Whitehead 1979: 74). Like Leibniz, he conceives of actual occasions as *processes of experience*. They are entities endowed with subjectivity that are always related to other elementary subjects, i.e., other actual occasions. Whitehead does not separate the *essence* of the processual subject from its experiences. He conceives of the actual occasion as a totality of experiences that grows together to form a whole. Every processual subject has experience-relations to other already existing processes (ibid. 18). It is these relations that make up the *essence* of the experiencing subject (Koutroufinis 2014: 12–17, 2006: 135–139). Whitehead calls these relations "prehensions." The experiencing subject becomes real through its perceiving relations or prehensions. Thus, prehensions fulfill Werner's idea that perceptions are metaphysically significant (§58) in an ideal way.

« 16 » Finally, it is worth noting that prehensions are not passive representations. Actual entities actively construct their

perceptions of other actual entities. Thus, Whitehead's ontology provides a fruitful metaphysical foundation for constructivist epistemologies that depart from Cartesian dualism.

**Spyridon Koutroufinis** is Privatdozent at the Institute for Philosophy of the Technical University of Berlin. His main areas of specialization and teaching are biophilosophy, process philosophy, and theory of self-organization. He is the author and editor of several books, articles, and book chapters in these areas.

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## Reconciling Constructivism with Realism: How Far Non-Dualism Should Be Followed

Istvan Danka

Budapest University of Technology and Economics, Hungary  
danka.istvan/at/filozofia.bme.hu

**> Upshot** • In his target article, Werner proposes a metaphysical foundation for a radical constructivist epistemology that is nonetheless claimed to reconcile constructivism with some sort of realism. While acknowledging his success in demonstrating that constructivism without an external/internal dualism is suitable for his purposes, I shall argue that rejecting a distinction between epistemological and ontological issues makes it questionable whether PL-metaphysics can make constructivism compatible with realism.

« 1 » Perhaps the most challenging claim of Konrad Werner's target article is that PL-metaphysics reconciles (non-trivial) constructivism with a non-naïve (§38) and non-dualistic (§59) realism (see also "Implications"). Let us call this claim the "reconciliation requirement." In order to satisfy the reconciliation requirement, Werner intends to overcome a classical dualism of the "internal" and "external" (among some others) that he attributes to DL-metaphysics. He claims that Ernst von Glasersfeld's as-