

Peer Review

Review of: "Observers as Agents: Relational Epistemology from Physics to Ecology"

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The article discusses a very controversial and evergreen topic in epistemology, that is the observer positioning and epistemic status in science. Although contemporary epistemologies have extensively discussed the overcoming of the positivistic position of the objective and distanced (white, Western, male) observer who is able to objectify anything of interest (from minerals to human beings), there is still a widespread scientism (sometimes identified with the evidence-based approach) which is understanding the problem of the knower as a mere technical issue that can be solved with more refined technical solutions.

The article by Dodig-Crnkovic attempts to develop a new model of the knowing subject rooted in relational epistemology and reflecting on the epistemological perspective in different scientific domains, looking for a unified theory of the knower. This is my first remark on the article, as the search for a unified theory of knowledge valid for both the natural and human sciences could be itself the issue. My first comment is that a relational epistemology should take into account the object of knowledge. As Jaan Valsiner likes to repeat: a stone cannot lie or refuse to answer your investigation, while a person will likely do it. The risk with such an attempt to develop a unified theory of knowledge is to flatten the perspective either to physicalism or to idealism.

The two interesting elements introduced in the article are the concept of relational epistemology and the ecosystemic perspective, which includes the concept of scale. The main organising principle is that: "Across all domains—quantum systems, biological organisms, social networks, and ecosystems—observers function as embedded agents". The direction is promising, but I suggest moving beyond the acknowledgement of domain-specific examples. I apologise for the self-citation, but I can't help stressing that a relational and ecosystemic epistemology should account for the dimension of irreversible time

(Valsiner, 2024). Indeed, when an observer engages with an observed, they establish an epistemic relationship – including some aspects of action and modelling – that creates a new whole, an epistemic ecosystem (Tateo, 2020; Tateo & Marsico, 2014) which is not reversible as it is often implied by the positivistic perspective. In other words, once epistemic agents engage in a relation, they constitute a brand new whole that cannot be dismantled to go back to a previous condition, as they have already affected each other as parts of an ecosystem. Any epistemic action implies a change in both the knower and the object of knowledge (as also noted in the article). This principle is exemplified by Dodig-Crnkovic with the concept of Quantum Entanglement.

The other important point is the idea of the intersubjectivity of the observers as one of the foundations of relational epistemology. Here, the author could have considered Haraway's concept of "strong objectivity", as including it in the discussion would have led to interesting questions.

I am refraining from providing an assessment of the article, as it is first of all an interesting read. I would rather invite the author to explore the topic even further. She is still into a perspective of asymmetry between the knower and the object of knowledge, for instance when she writes: "Observers interact with systems using finite cognitive and physical means, conditioning how information about reality is structured." Hence, the problem is still the fact that we just need more powerful instruments or computational power to solve the enigma of reality.

What instead if one tries to push the idea of relational epistemology further? Knowing is becoming part of an epistemic ecosystem as a whole. Knowing is a transformative event not only of the "reality" (as Francis Bacon pointed out), but is also transformative of the observer (as any scientist whose life, worldview, and even physical health has been affected by research could confirm). The way to avoid the observer's "solipsism" is thus not only to have more observers, but really to try to apply ecosystemic principles (including irreversible time and the scale in the sense of Chakrabarty, 2018) to the epistemic relationship.

My suggestion is to explore the potential of this article by not trying a unified model of the knower from the perspective of different disciplines, but from the perspective of an epistemic ecosystem. De Sousa Santos noted remarkably that Western epistemologies assume phenomenological diversity as epiphenomenal of underlying unified principles. This echoes Wolfram's idea of "*framing observers as systems that extract simplified narratives from complex underlying structures*.", mentioned in the article. I suggest exploring the possibility that the epistemic relation of knower and object of interest is instead increasing diversity rather than reducing it to fewer underlying principles. This diversity could be what

is eventually recognised as knowledge. On the contrary, the idea of science as something that selects in a Darwinian way a few “true” statements in a competition is rather a neoliberal conception that, when applied to scientific practice, is reducing its potential. Of course, I am not here advocating total epistemological relativism. I am perfectly aware that there is a version of knowledge that will be better suited to understand phenomena. I am saying that the dialogue between different ideas is not meant to win a competition (as unfortunately it is understood the way we fund science nowadays), but should be based on the idea that also “wrong” hypotheses play a function in the advancement of knowledge. This is another way in which the concepts of “agency and perspective” discussed in the article could be set forward.

References

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Declarations

Potential competing interests: No potential competing interests to declare.