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Review of Marek Pokropski's Mechanisms and Consciousness: Integrating Phenomenology with Cognitive Science

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Since its initial development in the second half of the twentieth century, cognitive science has given rise to a number of schools of thought. These range from the classical notion that cognition is computation over internal symbols, to embodied, extended and enactive approaches, to the predictive processing approach that is enjoying dominance these days. Edmund Husserl's thought, and his phenomenological philosophy more generally, has been brought into engagement with all of these schools. Marek Pokropski's *Mechanisms and Consciousness* is a recent contribution to the literature at the intersection of cognitive science and Husserlian phenomenology. His preferred school of thought is a version of mechanistic functionalism and he follows an interpretation of Husserl that is argued to align with this school. Instead of focusing on a particular topic within cognitive science, Pokropski's strategy is to address methodology in general, and then to apply his methodological recommendations to particular examples in the last few chapters of the book. In particular, his main thesis is that "phenomenology, understood as a theory of and research method concerning acts and objects of consciousness, can be integrated with the mechanistic framework of cognitive science, as it can provide constraints on mechanistic models" (4). He is clear that this method does not directly help with the so-called "hard problem" of consciousness, the problem of why the action of a physical system gives rise to particular subjective state or, indeed, to any subjective state whatsoever. Instead, his claim is that this method enables us to "focus on easy problems, the explanations of which are within our reach, and hope that they will shed new light on approaching the hard problem" (31).

The first chapter offers a quick introduction to some main topics in Husserlian phenomenology. There Pokropski makes the point, important for his project, that Husserl himself allowed for "phenomenological psychology" that would provide results helpful for empirical psychology. That is, even though much of Husserl's

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efforts involved the philosophically more ambitious transcendental phenomenology, Husserl did see a place for phenomenology to be applied in the less philosophically ambitious domain of empirical psychology.

The second chapter is a critical survey of existing work at the intersection of phenomenology and cognitive science, such as Varela's neurophenomenology (1996) and Gallagher's "front-loaded phenomenology" (Gallagher & Brøsted Sørensen, 2006). His main message in this chapter is that some form of naturalization of phenomenology is possible (against, for example, Moran (2013)) without a radical reconception of nature (against, for example, Thompson (2007)). His survey of existing approaches serves to raise the issue of *constraints*. The "front-loaded" phenomenology of Gallagher is said to be too weak in merely offering "conceptual constraints" and the stronger constraints recommended by Varela and others is said to be too strong because of their commitment, for example, to the search for a one-to-one mapping between the phenomenal and the neural. The right kind of constraint, according to Pokropski, is found in the multilevel mechanistic approach to natural explanation developed by Carl Craver and others.

This mechanistic alternative is the topic of the third chapter. Pokropksi acknowledges that mechanistic explanation has roots in Descartes and La Mettrie, but he explains that today's (neo)mechanistic approach is open to revision, that it is continuously being revised in light of empirical discoveries. For example, an initial characterization of a mechanistic system is that it involves decomposition and localization. Each local part of the mechanism performs a particular function and makes a distinct causal contribution. As work in neuroscience has shown this characterization of brain functionality to be false, the mechanist response has been to revise the commitments of their view. Pokropski explains:

> It might be the case, and often is, as studies of cognitive function and their localization in the brain have shown, that an initial assumption concerning decomposability and simple localization needs to be modified into near decomposability and complex localization. It does not follow, however, that the mechanistic approach is incorrect; instead it shows that mechanistic models can be refined as well as supplemented and constrained by other fields of research. (98)

In addition to "refining" the commitment to decomposition and localization, we also see that mechanisms need not be deterministic, but may be stochastic (101), and, finally, that "decomposition and localization are fallible heuristic strategies" (109). Dynamical approaches to cognition, previously framed as an alternative to mechanistic approaches, do not show that "mechanistic strategies are wrong, but that they are insufficient on their own and need to be supplemented with other approaches" (ibid).

With the mechanistic approach introduced, Pokropski then turns, in chapter 4, to a reading of Husserlian phenomenology that he takes to be the way forward in providing the right constraints on mechanistic models.

Pokropski's preferred interpretation of Husserl is as a computational functionalist. He adopts this interpretation from the work of Dreyfus and McIntyre

in the 1980s, which in turn makes use of an interpretation of Husserl's concept of noema as a Fregean *Sinn* from Føllesdal (1969). The important move is that he takes Husserl's noema to be a "sort of mental representation" (143). The most important primary source for Pokropksi's interpretation here is §86 of *Ideen I* (Husserl 1950), in which Husserl introduced the notion of "functional phenomenology" and there claimed that "the greatest problems of all are the *functional problems*" (146).

With this reading of Husserl in place, Pokropski then suggests that there are similarities between "functional phenomenology" and the functionalism of Robert Cummins (1975, 2000), which is kind of task analysis that involves breaking cognitive capacities into smaller sub-tasks. This kind of task analysis is similar to Husserl's functional phenomenology, Pokropski claims, because Husserl himself engages in what Pokropski calls "phenomenological decomposition" (150–152). The main idea, as Pokropski puts it, is that phenomenology involves decomposing experience into "noetic functions" that "play the role of representational functions, which give meaning to sense-data by correlating it with mental representations" (152).

Pokropski then goes on to apply this functionalist reading of Husserl to examples from the literature. He proposes Joseph Neisser's (2015) model of the first-person perspective in evolutionary developmental terms as a good example integration between first-person perspective and naturalistic explanation. He also cites my own work (Madary 2017) on the structural similarity between the anticipation/fulfillment description of visual experience, one hand, and predictive processing models of visual processing on the other. He adds that my claims amount to a mere conceptual constraint, but that his methodological approach enables one to make the stronger claim that there are functional constraints from the phenomenological level to the neural level.

The fifth chapter turns to dynamical modeling from the perspective of mechanistic explanations. Much of that chapter focuses on neurophenomenological approaches to studies of epilepsy. There Pokropski is critical of the existing studies, repeating the critique from chapter 2 that success in their hunt for a homeomorphic relation between the phenomenological level and the neural level "seems unlikely" (178). The better alternative, according to Pokropski, would be to provide a formal "dynamical-mechanistic" model of epilepsy.

The book covers a lot of ground with clarity in 200 pages. Pokropski shows a strong familiarity with an impressive range of topics across different traditions and disciplines. Readers unfamiliar with work at the intersection of phenomenology and cognitive neuroscience, or with work on mechanistic explanation in the mind sciences, would benefit from a great deal of the text. Overall, Pokropski's work makes a contribution to the ongoing dialogue between phenomenological philosophy and the empirical sciences of the mind. Readers sympathetic with the (neo)mechanistic approach to cognition will find a number of places in which that approach is brought into fruitful engagement with topics from Husserl's work.

The range of topics covered is a virtue, but it prevents Pokropski from going into depth in places where one might hope. Before entering into the specifics on those areas, I'd like to raise first a general concern having to do with the (neo)mechanistic approach that he adopts. The fact that this approach continuously revises itself in

light of scientific findings is laudable in its fallibilism, but the price paid for conceding one's core claim to be merely heuristic is that the mechanistic approach risks coming across as too much of a moving target, as lacking substantial commitment. It strikes me as amounting to the dodgy claim that the physical basis of the mind is mechanistic except when the physical basis of mind is discovered not to be mechanistic. But this complaint targets the group with which Pokropski aligns, not with his own unique claims.

The main area in which Pokropski might have offered more depth is in his presentation of the functionalist reading of Husserl. His case for the functionalist reading rests almost entirely on §86 of *Ideen I.* This strategy places a lot of weight on a short passage; Pokropski's case for functional phenomenology would be stronger by incorporating textual evidence from elsewhere in Husserl's corpus. A related issue is that there has been great debate over Føllesdal's reading of the noema as the Fregean *Sinn*, and Pokropski does not seek to convince readers who were hitherto unconvinced by Føllesdal's interpretation. In a footnote, he mentions that "This is not the only possible interpretation of Husserl's noema..." (163) in an understatement that conceals the depth and importance of the division between phenomenologists on this issue.

The notion of phenomenological decomposition is crucial for Pokropski's functionalist reading of Husserl, but his treatment of it is underdeveloped. He mentions Husserl's concept of non-independent parts from the third *Logical Investigation* (Husserl 1984), but quickly moves on from there to the somewhat opaque claim cited above about noetic functions playing a role of representational functions (see pages 151–152). A plausible reading of non-independent parts in the third *Investigation* is one in which those parts exist in relations of dependence that are, I would think, precisely *not* decomposable in the mechanistic functionalist sense. There is a conceptual tension between non-independent parts and functional decomposition; Pokropski does not address or acknowledge this tension.

I will try to explain this worry briefly using two examples of non-independent parts from basic Husserlian phenomenology: perceptual adumbrations and temporal retentions. Perceptual adumbrations are dependent upon one's being intentionally directed to the entire perceptual object, though some sides of the object are hidden from view. The adumbration can only appear as an adumbration of the particular object if one is intentionally directed to that particular object as a whole. Similarly, according to Husserl, temporal retentions are dependent upon the primal impression as well as the protention. We cannot experience temporal flow without all three of these non-independent parts. Husserl's insight is that we do not experience free-floating adumbrations or retentions, as it were. But if these non-independent parts can be functionally decomposed or fragmented, as Pokropski suggests, then it seems that we should be able to experience these non-independent parts independently. That is, as Pokropski has it, the sub-function of, say, the temporal retention (see page 152), should be able to generate retentions without help from the sub-function of primal impression or the sub-function of protention, for these sub-functions are decomposed. Thus, there is a tension between non-independent parts and functional decomposition. There may be a way to understand functional decomposition so as to avoid the tension, but no such way is developed in the book.

I would like to finish with a comment that zooms out historically from the detailed scholarly engagement with the literature that one encounters in this book. What I mean here is that the big picture sketched by Pokropski is one in which we might make some progress towards understanding consciousness through a deeper integration between phenomenology, on one hand, and mechanistic explanation, on the other. His brief nod to Descartes and La Mettrie may prompt us to note the long-term historical dynamics involving mechanistic approaches to the mind. It is precisely the rise of a mechanistic understanding of the natural world, an understanding that replaced a broadly Aristotelian conception of reality, that pushed self-awareness out of the picture. With the beginning of modernity and the mechanistic conception of the natural world, we gained great power over nature, but we lost a place for subjectivity. One can appreciate this loss, for example, with the well-known thought experiment of Leibniz's mill (*Monadology* §17). Descartes himself found the need to posit substance dualism in order to locate the conscious mind. The challenge of making space for consciousness within the mechanistic conception of nature has been playing out for decades in analytic metaphysics of mind, eventually giving rise to the vogue of panpsychism. It is difficult to see the appeal in the suggestion that *more* mechanism will help to solve the problem that finds its very origin in the mechanistic conception of nature.

Declarations

Conflict of interest The author states that there is no conflict of interest.

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