Open Peer Commentaries

on Jakub Petri & Artur Gromadzki's "Enacting the 'Body' of Neurophenomenology"

For and Against Theory: Some Notes on Doing Neurophenomenology

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>Abstract • I offer a critical reading of Petri and Gromadzki's target article, suggesting that it constructs a strawman neurophenomenology. I argue that the article is an exemplar of an overabundance of publications that hyper-focus on conceptual questions about neurophenomenology, which ultimately serve to detract from conducting neurophenomenological studies. Rather than introducing novel first-person methods in the form of somatic practices, I suggest that formal theory construction might be a better route towards iterative improvement of neurophenomenology.

Handling Editor • Alexander Riegler

Introduction

« 1 » In this commentary, I offer a critical reading of the target article "Enacting the 'Body' of Neurophenomenology" by Jakub Petri and Artur Gromadzki. First, I problematize hyper-focusing on theoretical and conceptual aspects of neurophenomenology and demonstrate how these diverge from practical considerations of doing neurophenomenology. Then, I raise questions about whether it may not be more productive for iterative improvement of neurophenomenology to engage in formal theory-construction and hypothesis-generation rather than theorizing in the absence of neurophenomenological data.

Against theory

« 2 » The theoretical perspective on neurophenomenology offered in the target article does not always match the practical considerations of how neurophenomenological research is conducted in practice. Most notably, in §§17–24, Petri and Gromadzki discuss first-person methods in the abstract, disregarding how different day-to-day practice is, depending on whether a researcher opts for micro-phenomenology, descriptive experience sampling or any other technique, and how the integration of phenomenal data with a third-person research design would have to consider different epistemological and pragmatic considerations. In addition, it seems to me that if introducing somatic practices, or what they refer to as "off-radar first-person methodologies," is diagnosed as the essential lacuna in the current state of neurophenomenology, this diagnosis has nothing to do with the practical challenges of doing neurophenomenology. In short, Petri and Gromadzki's neurophenomenology seems to be a construct of theoretical exegesis, rather than a reflection of neurophenomenology as an embodied and lived practice that they seem to be calling for.

« 3 » This is by no means a novel phenomenon within the enactivist literature. Neurophenomenology has been envisioned as a precise methodological solution for the hard problem, grounded in the lived experience of embodiment and the formalism of dynamical systems theory (for a conceptual overview, see Roy et al. 1999; Vörös 2013; for an empirical example see Froese & Fuchs 2012). However, the cognitive science community seems to be overburdened by conceptual issues surrounding neurophenomenology. Let me demonstrate this point.

« 4 » In §13, Petri and Gromadzki mention that there are 33 explicitly neurophenomenological studies that have been conducted. To allow for comparison, I performed a review of the term "neurophenomenology" in the *Constructivist E-print Archive* at https://cepa.info. Excluding empirical papers and short publications (e.g., open peer commentaries), the review yielded 32 entries (Varela 1996; Peters 2000, 2004; Krippner & Combs 2002; Lutz & Thompson 2003; Bayne 2004; Thompson, Lutz & Cosmelli 2005; Laughlin & Throop 2006; Thompson 2004, 2009; Gallagher 2007; Petitmengin 2017; Hart 2008; Bitbol 2012, 2021; Colombetti 2013; Khachouf, Poletti & Pagnoni 2013; Laughlin & Rock 2013; Robbins 2013; Strle 2013; Taylor 2013; Gordon 2015; Olivares et al. 2015; Robbins & Gordon 2015; Rupert 2015; Kirchoff & Hutto 2016; Arístegui 2017; Bitbol & Petitmengin 2017; Valenzuela-Moguillansky, Vásquez-Rosati & Riegler 2017; Možina 2019; Stewart 2019; Lopes 2021) that consist of theoretical or conceptual work on neurophenomenology.

« 5 » Thus, there is an almost one-to-one ratio between practical and theoretical work done within the field of neurophenomenology. This problematic has been remarked on elsewhere (Oblak & Kordeš 2018), most notably, in Anil Seth's discussion on the "real problem of consciousness," that is, the question of –

> "how to account for the various properties of consciousness in terms of biological mechanisms;

https://constructivist.info/17/2/101.petri

without pretending it doesn't exist (easy problem) and without worrying too much about explaining its existence in the first place (hard problem)."[1]

« 6 » Specifically, Seth is concerned that hyper-focusing on the apparent difficulties of studying consciousness might hinder empirical research. He demonstrates "how targeting the hard problem, rather than the real problem, can slow down or even stop experimental progress." Instead, Seth proposes the boundary conditions that – under specific assumptions – make the scientific study of consciousness tractable.

« 7 » I do not mean to sound anti-intellectualist or, more specifically, anti-philosophical, as many of the papers listed above are invaluable for the study of consciousness. However, contributions that put forward a purely theoretical view of neurophenomenology fail to appreciate the problems encountered by the genuine practice of neurophenomenology.

« 8 » For example, in §§25–43, Petri and Gromadzki put forward a series of somatic practices that might be used as improvements for first-person approaches within neurophenomenology. There are several issues surrounding this section, which I will not explore in detail here:

- The authors do not put forward explicit phenomenological data on the proposed somatic practices;
- Reifying novel contexts in which to apply phenomenological methods might lead to a balkanization and dogmatism of phenomenology as a style of qualitative research (see Stilwell & Harman 2021 for an illuminating account of the current state of the art of qualitative phenomenology and how it should incorporate flexible sense-making);
- Relatedly, considering the exquisite detail in which experience can be described using contemporary methods of first-person research (e.g., Petitmengin & Bitbol 2009; Hurlburt 2011; Kusters 2020; Oblak, Boyadzhieva & Bon 2021), the question arises of whether novel methodologies are even needed or whether extant approaches simply have to be applied to novel contexts such as drawing (Oblak 2020) or meditation (Ataria, Dor-Ziderman & Berkovich-Ohana 2015).

« 9 » Here, I wish to focus on another issue. At the risk of being accused of neurocentrism, I suggest that ever since neurophenomenology's inception (Varela 1996, 1999; Roy et al. 1999), as well as in the examples of notable neurophenomenological studies cited in the target article (§12), the third-person perspective has always consisted of neuroscientific methods (e.g., electroencephalography, functional magnetic resonance imaging). Thus, it is a by far more pressing question for neurophenomenological research how to operationalize lived experience within the considerable constraints of neuroimaging without losing what could be called phenomenological validity, which refers to the question of whether we are measuring the aspect of experience that we claim we are measuring (Hurlburt 2011: Ch. 21). Q1 Indeed, several formalisms (e.g., Fisher entropy in Laughlin & Throop 2006; and Lempel-Ziv complexity in Timmermann et al. 2019) have been proposed. However, it is unclear how the somatic practices put forward in the target article could be operationalized as first-person methods within, for instance, an EEG-based research design. Q2

For theory

« 10 » The second aspect of doing neurophenomenology that I wish to emphasize is *theory construction*. In §3 of the target article, Petri and Gromadzki discuss the socio-cultural aspects of scientific publishing that make doing neurophenomenology difficult. On the one hand, who among us who is attempting to do neurophenomenology has not been met with a reviewer demanding that in-depth interviews, the conducting and analysis of which take hours, be performed on hundreds of participants? How many pages of digital ink have had to be written explicating that data are not simply objective or subjective but that there is a complex epistemic spectrum between the two extremes (see, most notably, Hurlburt 2011: Ch. 17) in response to commentators unfamiliar with enactivist epistemology? On the other hand, as a researcher working within the field of psychopathology, where we have to contend with the genuine suffering of patients (de Haan 2020), I am nonetheless also sympathetic to naturalist-minded researchers trying to establish theoretical ground on which scientific work can be based.

« 11 » I wish to argue that formal theory construction is the element that is missing from neurophenomenology that might make the broader cognitive science community more amenable to this research project. Let me explain this on the basis of *cognitivism*. Cognitivism is the paradigm of cognitive science that equates cognition with computation (i.e., a process of transformation and manipulation of formal symbolic structures in the brain). Critiques of cognitivism are well known (Varela, Thompson & Rosch 1991) and do not bear repeating here. However, it can hardly be denied that cognitivism as an empirical research program was extremely productive. One reason for this may be that cognitivism had clear models for theory construction and hypothesis generation (Caramazza 1986; de Hollander, Forstmann & Brown 2016). So far, comparable neurophenomenological theories capable of generating testable hypotheses, and thereby offering a way for their viability to be tested, have been scarce.

« 12 » Let me demonstrate by way of example. A neurophenomenological project attempting to understand the lived experience of synesthesia did so by seeing whether it was possible to train non-synesthetic people to have synesthetic (or at least synesthesia-like) experiences (Bor et al. 2014). Closed-form descriptions (i.e., *thin phenomenology*; Berkovich-Ohana et al. 2020, as cited in §16) of training-induced synesthetic experiences suggest that they are indistinguishable from naturally occurring synesthesia (Rothen et al. 2018). Additionally, the training regimen was associated with an increase in visual cortical excitability, a biomarker of synesthesia (Schwartzman et al. 2019). However, a subsequent study applying mixed qualitative methods revealed an apparent paradox in the data: naturally occurring synesthetic experiences were reported by the *same* participant describing the *same* experiential episode in the *same* interview as both wilful and au-

1| "The real problem" by Anil Seth, in Aeon, 2 November 2016, https://aeon.co/essays/the-hard-problem-of-consciousness-is-a-distraction-from-the-real-one

tomatic depending on whether thin or deep phenomenology was used.[2] It was hypothesized that the process of how synesthetic experience is brought forth has a dynamic internal structure. It may be that enacting synaesthesia depends both on wilful experiential gestures and automatic experiential events that are impinged upon the individual, and that different methods are more sensitive to different aspects of this process (Kordeš & Demšar 2018; Heimann 2020). In a follow-up study combining experience sampling and a series of micro-phenomenological interviews, it was confirmed that synesthesia is enacted through a process of using a wilful, pseudo-embodied gesture to transform automatically present amodal knowledge about the link between an inducer and a concurrent (Oblak, Randall & Schwartzman 2021). Introducing such explicit hypothesis-testing into neurophenomenology has recently been suggested in a proof-of-principle study by Takuya Niikawa and colleagues (2020). I wonder whether Petri and Gromadzki would agree that introducing formal theory-construction and hypothesis-testing into neurophenomenology might not provide a better way of iteratively improving upon its methodology than simply proposing novel contexts in which to apply first-person methods? Q3

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2| See the 2020 preprint of the study, "Extensive phenomenological overlap between induced and naturally-occurring synaesthetic experiences" by David Schwartzman, Aleš Oblak, Nicolas Rothen, Daniel Bor, and Anil Seth, at bioRxiv, https://doi.org/10.1101/2020.08.03.228692.

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How to Radicalize Neurophenomenology?

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> Abstract • I discuss two overall questions concerning the implementation of neurophenomenology. I argue that the problem of implementation is both a matter of pragmatics and our existential position, and that phenomenology neither contradicts nor is counterproductive to neurophenomenology. It is instead a way to push it forward and keep it radical.

Handling Editor • Alexander Riegler

« 1 » In the first part of Jakub Petri and Artur Gromadzki's target article, they elaborate on the tension between the mild and radical programs of neurophenomenology (Petitmengin 2017). Whereas the mild program is focused on establishing empirical correlations between first- and third-person descriptions, the radical program is focused on investigating (within lived experience) the process of separation of the subjective and objective poles. The current and fundamental challenge for neurophenomenology, as Petri and Gromadzki argue (§10), is that most of the work has been done within the mild program. Nevertheless, to fulfil Francisco Varela's initial proposal would require the implementation of the radical program.

« 2 » In the second part of the article, Petri and Gromadzki provide their own alternative solution to push forward and keep the neurophenomenological project radical. They do so by focusing on three disciplines that incorporate first-person methodologies, but which have been off the radar for neurophenomenological research, namely somatics, somaesthetics and emersiology.

« 3 » In this commentary, I will focus on two questions that Petri and Gromadzki raise in the two parts of their article:

- Why is radical neurophenomenology difficult to implement?
- How should we develop radical neurophenomenology to push it forward?

Pragmatics and existential position

« 4 » As for the first question, Petri and Gromadzki (§§11, 13) start by pointing towards my argument (Martiny 2017) that part of the reason that implementing radical neurophenomenology is difficult, is the scientific community's need for a pragmatic solution (e.g., models, tools, techniques, and practices). However, Petri and Gromadzki argue (§14) that the difficulty of implementing radical neurophenomenology goes deeper than just pragmatics and know-how. The fundamental issue, as they see it, is that the subjective–objective dichotomy is a fundamental aspect of the existential position we find ourselves in and it is therefore not possible to "step out" of the dichotomy. They define this existential position as the result of the current folk and scientific theories and methodologies that shape the ways in which we understand lived experience and infuse our understanding with the explanatory gap between subjectivity and objectivity. As a consequence, Petri and Gromadzki state that we should not see radicalization as a starting point, but rather as a goal.

« 5 » I agree with Petri and Gromadzki that the difficulty of implementing radical neurophenomenology goes deeper than just pragmatics. I have previously argued (Martiny 2017) that the reason why radical neurophenomenology is so difficult to implement is precisely because of our existential position. In the neurophenomenological literature, the core of this difficulty goes by different names such as "the fundamental circularity" (Varela, Thompson & Rosch 2016), "the hermeneutical objection" (Varela & Shear 1999), or "the excavation fallacy" (Varela & Shear 1999). These conceptions refer to the problem that any investigation, explanation or description of lived experience will always be conducted by experiencing subjects who are informed by an already-given background of scientific and cultural theories, methods, beliefs and practices. The problem emerges when this background is infused with the dichotomy of subjectivity and objectivity, since we then reproduce the understanding of lived experience that we are trying to escape in radical neurophenomenology. This circularity is nevertheless an epistemological point of departure for doing radical neurophenomenology.