References

Bernet R. (2013) The body as a "legitimate naturalization of consciousness." Royal Institute of Philosophy Supplement 72: 43–65.

Hanna T. (1985) Bodies in revolt: A primer in somatic thinking. Second edition. Freeperson Press, Novato.

Husserl E. (1970) The crisis of European sciences and transcendental phenomenology. Northwestern University Press, Evanston IL. German original published in 1936.

Husserl E. (1983) Ideas pertaining to a pure phenomenology and to a phenomenological philosophy. First book: General introduction to a pure phenomenology. Martinus Nihoff, The Hague. German original published in 1913.

Husserl E. (1989) Ideas pertaining to a pure phenomenology and to a phenomenological philosophy. Second book: Studies in the phenomenology of constitution. Kluwer Academic Publishers, Dordrecht. German original published in 1952.

Martiny K. M. (2017) Varela's radical proposal: How to embody and open up cognitive science. Constructivist Foundations 13(1): 59–67. ► https://constructivist.info/13/1/059

Pace Giannotta A. (2017) Varela on the pragmatic dimension of phenomenology. Constructivist Foundations 13(1): 78–81. ► https://constructivist.info/13/1/078

Pace Giannotta A. (2022a) Corpo funzionale e corpo senziente: La tesi forte del carattere incarnato della mente in fenomenologia [Functional body and sentient body: The strong embodiment thesis in phenomenology]. Rivista Internazionale di Filosofia e Psicologia. In press.

Pace Giannotta A. (2022b) The mind–body problem in phenomenology and its way of overcoming it. Vita Pensata 26: 76–83. ► https://cepa.info/7754

Petitmengin C. (2017) Enaction as a lived experience: Towards a radical neurophenomenology. Constructivist Foundations 12(2): 139–147. ► https://constructivist.info/12/2/139

Shusterman R. (2013) Affective cognition: From pragmatism to somaesthetics. Intellectica 60(2): 49–68.

Thompson E. (2004) Life and mind: From autopoiesis to neurophenomenology. A tribute to Francisco Varela. Phenomenology and the Cognitive Sciences 3: 381–398. ► https://cepa.info/1137

Thompson E. (2007) Mind in life: Biology, phenomenology and the sciences of mind. Harvard University Press, Cambridge MA. Reviewed in ► https://constructivist.info/3/2/117

Varela F. J. (1996) Neurophenomenology: A methodological remedy for the hard problem. Journal of Consciousness Studies 3(4): 330–349. ► https://cepa.info/1893

Varela F. J., Thompson E. & Rosch E. (1991) The embodied mind: Cognitive science and human experience. MIT Press, Cambridge MA.

Zahavi D. (2002) Merleau-Ponty on Husserl: A reappraisal. In: Toadvine T. & L. Embree (eds.) Merleau-Ponty's reading of Husserl. Kluwer, Boston: 3–30.

Zahavi D. (2003) Inner time-consciousness and pre-reflective self-awareness. In: Welton D. (ed.) The New Husserl: A critical reader. Indiana University Press, Bloomington IN: 157–80.

Zahavi D. (2010) Inner (time-) consciousness. In: Lohmar D. & Yamaguchi I. (eds.) On time: New contributions to the Husserlian phenomenology of time. Springer, Dordrecht: 319–339.

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Authors' Response
How Open Should Open-Ended Neurophenomenology Be?

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> Abstract · We provide additional explanations regarding the constant refinement methodology and the integration of various first-person disciplines within neurophenomenology. In particular, we discuss the issues of our pragmatist approach, the compatibility of methods, and the parametrization of first-person disciplines.

« 1 » To begin with, we would like to express our thanks to all the commentators for their insightful contributions. We are delighted that our article was able to initiate such a lively (sometimes polarizing) exchange of opinions. In this response we would like to clarify some details, answering all the questions posed along the way.

Of theories and misunderstandings

« 2 » The first misunderstanding revolves around theory construction, with **Aleš Oblak** (§11) pointing to the general problem of neurophenomenology – the lack of a more standard-science, formal theory construction/hypothesis-testing type of inquiry – but is also present in **Kristian Moltke Martiny**'s commentary (§16), where he warns that our open-ended proposal might succumb to a "whatever works strategy." In our opinion, the problem seems to be caused by a misconception of the "pragmatist strategy" (**Martiny** ibid), which constitutes the core of the project of re-embodying neurophenomenology. One can get the impression that the commentators' understanding of it is rather close to the idea of "bricolage," a form of experimental activity of constructing knowledge through accidental means (Lévi-Strauss 1966), or the very common understanding of pragmatism in terms of practi-

cal usability, rather than proper pragmatist method, which, as we already noted in §§31f in the target article, inspired Francesco Varela directly.

« 3 » Here, we suggest following the original stance of pragmatism as –

❝ a philosophy that stresses the relation of theory to praxis and takes the continuity of experience and nature as revealed through the outcome of directed action as the starting point for reflection. Experience is the ongoing transaction of organism and environment, i.e., both subject and object are constituted in the process. […] Since the reality of objects cannot be known prior to experience, truth claims can be justified only as fulfillment of conditions that are experimentally determined, i.e., the outcome of inquiry. ❞ (Seigfried 1999: 730)

This, however, does not imply the lack of knowledge methodology or the accidentality of knowledge – both discussed extensively in John Dewey's (1938, 1958) concept of experiential learning. In Dewey's view, the inquiry is structured through primary (material) and secondary (reflective) experiences, which are mirrored in phases of reflective thought and action (Miettinen 2000: 66).

« 4 » Another misunderstanding seems to concern our reading of neurophenomenology itself. **Bryony Pierce** Q1 wonders whether we have not switched between Varela's and David Chalmers's approaches to the hard problem and the gap. In the target article, we agreed with Claire Petitmengin that Varela's original proposal does not naively accept the gap as only a theoretical problem that is to be solved by ordinary means. Instead, what stems from it is that the gap is something we experience, hence the proposal of dealing with the hard problem in our own lived experience (§§8f). We then inferred that the problem goes deeper (§§14f), meaning that we are bound to talk about it in terms of a biological/external–experiential dichotomy; and that Varela saw this problem – stating that we have to go "beyond the subjective–objective duality" (**Pierce** §3).

« 5 » **Susan Stuart** (§3) claims, however, that our proposal misunderstood the neurophenomenological method, which, according to her, is possible only by first rejecting the "dichotomizing metaphysics of subject–

object, fact and value, living and non-living," and adopting an alternative metaphysics. Following Michel Bitbol and Elena Antonova (Bitbol & Antonova 2016; Bitbol 2021), **Stuart** emphasizes that this move towards nondual metaphysics does not require any elaborate theoretical solution (attempting to do so would mean that we still desperately cling to the outdated naturalism), but simply implies a change in our own being. Thus, our proposal of destabilizing poles is mistaken in that there are no poles to destabilize in the first place. However, presenting the state of affairs in this way is deeply problematic.

« 6 » How exactly does one attempt such a change of being, or rather, what are the criteria for such a restructuration of experience and why in a particular way? This is something we have accentuated in the target article (§14), raising a similar concern about Petitmengin's radical neurophenomenology. **Stuart** (§4) points then to Varela's (1996: 337) mention of "habitual fog separating experiencer and world" and makes a claim that if we were to clear this fog, we could succeed in this experiential change.

« 7 » Finally, she presents a sort of ultimate choice (§5): either plan a scientific project with that kind of alternative metaphysics in mind, or "continue the naturalistic project of reifying things as they appear." Yet, phrasing it in this way is a huge oversimplification. As we argued, the existential shift demanded by neurophenomenology – thus clearing the habitual fog – is inseparable from something we dubbed the "existential position we currently find ourselves in."

« 8 » Conveniently, this point was expanded by **Alejandra Vásquez-Rosati** in her commentary (§§1–5), where, starting from Humberto Maturana and Varela's biology of cognition, she explains how experience and shared perceptual objects are being shaped by multiple interrelated factors. Take for instance Western culture, and how it is inseparably connected to what she refers to as "Cartesian dualistic education," leading to the emergence of shared perceptual objects that are predefined by the "dualities subjective–objective, internal–external, mind–body, etc." In our view, attempting to clear the habitual fog, thus changing the experiential framework (*metanoia*), deserves a more complex answer, rather than merely

stating that it "might be a challenge" (**Stuart** §5). It involves reorganization on various levels: physiological, psychological or social; on the level of individuals and on the level of the (scientific) community (**Vásquez-Rosati** §3).[1]

« 9 » So, the problem of designing and planning scientific projects in accordance with radical neurophenomenology is then not only a matter of an individual choosing to do so in a non-dualistic manner, but takes into consideration the broad theoretical-experiential background in which one finds oneself (§7 and §19 in our target article). This is why we brought up a different version of the hermeneutical objection/excavation fallacy (§14) to point out how even our theories and procedures are never entirely free of dualizations. For **Vásquez-Rosati** (§4), then, to free ourselves from dualistic prejudices and get closer to a paradigm shift, a good starting point would be the lived experience of "states of active presence (e.g., mindfulness), an experiential reference in which reflexive and corporeal aspects converge in the present." We think that this can be understood as a form of bodily cultivation/somatic practice that is not only present in mindfulness (or any method extrapolated from Eastern traditions like Buddhism) but present in somatics, somaesthetics and emersiology, as all three promote body cultivation and heightened somatic awareness. This is achieved in somatics through somatic learning practice, e.g., the Feldenkrais method (Ginot 2010), in somaesthetics through the practice of aesthetic enhancement (Shusterman 2015), and in emersiology through the exploration of immersion and emersion processes (Andrieu, Nobrega & Sirost 2018; target article §40).

1| We should also like to emphasize that proposing an alternative to a dualistic ontology/metaphysics is nothing more than a relative negation of it. It would still be bounded within the framework of Cartesian dualism. Stuart speaks of a "non-dual and a-ontological way of being." However, one could also think about radically different perspectives often described as meontological, which are characteristic of Eastern traditions, or even the embodied lived experience-focused philosophies found within the Kyoto School, of which Varela (1996: 335, 1999: 67) was apparently fond.

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« 10 » A related worry is put forward by Martiny (§6), concerning the circularity between destabilizing dichotomies and scientific-cultural communities adhering to well-established standards, i.e., whether by fixating on the question as to why radical neurophenomenology is difficult to implement, we are facing a "chicken or egg dilemma." He suggests that we should instead address the problem by appealing to levels of explanation – that the difficulty stems from the discrepancy between the epistemological-existential level and the pragmatic level. In order to initiate a change on the epistemological and existential level, radical neurophenomenology needs appropriately radical pragmatics. Although Martiny supports our pragmatist proposal of utilizing different methodologies in neurophenomenology's open-ended approach, he is not convinced by our treatment of philosophical phenomenology (Martiny §§12–14) and overly pragmatist approach, which might lead to a "whatever works" attitude (Martiny §16).

« 11 » Regarding the former, we suppose that a certain confusion might have occurred due to our neglect of phenomenology (a similar concern is raised by Andrea Pace Giannotta §§4f), yet we have never actively discouraged anyone from developing radical neurophenomenology by means of philosophical phenomenology. Our point was that neurophenomenology could benefit from opening up to different first-person disciplines (e.g., by fostering somatic awareness or zooming into different sectors of lived experience). Conducting phenomenologically based research is also part of the constant refinement methodology, but in the vertical manner (see discussion in the target arcticle in §23 and, contrasted with horizontal development, in §24). It is a gradual progress (e.g., establishing new experiential invariants) within a given first-person method and the sector of lived experience it concerns.

« 12 » It is also not the case that we argue for a "whatever works" approach. Admittedly, it is a well-justified concern, however, throughout §26 to §43, we established how somatics, somaesthetics and emersiology relate to neurophenomenology in regard to the embodiment and pragmatics of experiencing. As such, we also want to emphasize

that constant refinement entails that peer-review processes could also evolve with each rendition of neurophenomenology. In the target article, we argued that the processes of intersubjective corroboration and validation are in direct relation with growing expertise in a given method (which deals with a given sector of lived experience). This makes it possible to filter out those approaches that fail to generate sufficient results or have nothing in common with the neurophenomenological project.

« 13 » A related concern regarding constant refinement methodology is brought up by Oblak Q3, suggesting that neurophenomenology could benefit more from formal theory construction and hypothesis-testing instead of proposing novel contexts. Just to clarify, we see utilizing methodologies of different first-person disciplines as a chance not only for neurophenomenology to open up to new contexts, but also to refine our knowledge about already-studied contexts (sectors of lived experience), thus preventing the totalization of any given framework (§28). However, without judging what constitutes a "better way" of improving neurophenomenological methodology, we do agree with Oblak that a more standardized way of doing research is helpful. Shortly before Q3, Oblak (§12) mentions a study by Takuya Niikawa et al. (2020), and interestingly, in the target article (§17), we referred to another paper by the same research team when introducing the *problem of phenomenological data collection* (Miyahara et al. 2020). This problem is complementary to the issue of *phenomenological validity*, which Oblak brings up in Q1. Let us address both of Oblak's questions using a single example.

« 14 » In order to secure valid and reliable data from first-person methods, Miyahara et al. (2020) proposed a short-term training program in the phenomenological method. Without going into details, it allows naïve participants to get a basic grasp of how to give a phenomenologically rich description, which is also easily operationalized, thus mitigating the time and effort constraints usually associated with neurophenomenology. Yet nothing stands in the way of neurophenomenology itself utilizing such a training program as a tool in its first-person methodology. A more standard-science way of doing neurophenomenology is by no

means in contradiction with our proposal of horizontally expanding neurophenomenology with novel methods and contexts.

« 15 » At this point, having Stuart's or Vásquez-Rosati's arguments in mind, we could be easily accused of siding with naturalism or betraying our commitment to thick phenomenology. However, nowhere in the target article have we argued for a complete disconnection with the standard model of doing science. We intentionally phrased our proposal in terms of "destabilizing first–third person connections" or "destabilizing the hard 'core' of (cognitive) science" instead of rejecting them straight away at the onset.

« 16 » This stance of not unconditionally clinging to a priori theoretical distinctions is characteristic of Richard Shusterman's (2015) transactional experiential inquiry. It has also been expressed by Natalie Depraz, Varela and Pierre Vermersch:

“In order to develop a method adequate to the act of becoming aware we must learn as we go along. We have to discover what our question entails as we explore its contours, that is, we have to have an open exploration, without positions staked out ahead of time and without establishing concepts definitively defined at the outset. In light of our disciplinary fields, we will speak of the 'logic of emergence or non-linearity' (cognitive sciences), of 'circular causality' (Piagetian psychology), or of 'genetic or generative logic' (Husserlian phenomenology). In all these cases, an open questioning whose answers are not given ahead of time but instead surge forth from the research itself, is opposed to a system presented from the outset via a grid of definitions, such as Spinoza's Ethics or Kant's Critique of Pure Reason, or indeed, any static exposition of the research results of a theory.” (Depraz, Varela & Vermersch 2003: 17)

This quote could also serve as a response to Pierce's Q2, regarding the three proposed disciplines and their viability in "dissolv[ing] the gap 'in experience'" – "becoming aware of reciprocal constraints and/or co-constitution, despite the distinct ways in which we experience the two domains." The honest response is that there is no way of knowing so. So, let us answer Pierce's question with a counter-question: can we judge the result of the process of becoming aware, before becoming aware of it? If we were to claim that

we indeed can, it would result in projecting the results of an experiment before performing it. Vásquez-Rosati (§§8f) seems to hint at this when discussing bracketing our beliefs and assumptions.

« 17 »   That is why we introduced (although after reflecting on the commentaries, maybe not to a sufficient degree) Shusterman's idea of transactional experiential inquiry, which he described thus:

❝ The basic idea here is that inquiry can develop new directions, aims, methods, and standards through the dynamic experiences acquired in the course of the inquiry's pursuit and that to these new directions, aims, methods, and standards ongoing inquiry then submits its energies for future guidance while also submitting its results for validation. This transactional style of inquiry can be contrasted to the prevailing model of inquiry as requiring the fixing of methods and logical standards that are grounded independently and prior to the process of inquiry, and that therefore serve as external standards for governing the pursuit of inquiry and validation from beginning to end. ❞ (Shusterman 2015: 181)

He links this idea with William James's description of experience as double-barreled – embracing both what is experienced and how it is experienced, and underlines that his mode of inquiry is double-barreled in one more way:

❝ First, it insistently goes beyond theory to incorporate practice, believing that such closer interaction will improve both theory and practice to rewardingly enrich experience. Second, it insists that experience is not something confined to the interiority of human consciousness but necessarily involves the subject's environment, both through active engagement and more passive absorption of environing conditions and energies. Third, transactional experiential inquiry also implies experiments in transactions between different fields, thus transcending disciplinary boundaries, transgressing entrenched dichotomies or limits, and transforming established concepts or topics. ❞ (ibid: 181f)

Such a mode of inquiry should also dispel Vásquez-Rosati's **Q2** worries that the proposed disciplines somehow fail to correspond with the enactive approach, or represent a case of "embodied reductionism" (§10), which

would be "incompatible" with neurophenomenology's epistemology (Vásquez-Rosati **Q1**). It is also not that transactional inquiry is something limited to somaesthetics, as both somatics and emersiology always begin with pragmatics and then follow with theory, and not the other way around. We expand on the issue of (in)compatibility in the next section.

Compatibility or integration?

« 18 »   This leads us to another heatedly discussed issue, referred to by almost all commentators in terms of *compatibility* of methods. There is a great variety among the commentators, though, ranging from the very reserved standpoint represented by Oblak (§8), who is almost warning against the use of methodologies in neurophenomenological inquiry that have not been not yet checked and validated, to Pace Giannotta's strong encouragement to follow connections instead of seeking differences (§6). What is striking, however, is that for all of them, thinking in terms of compatibility seems to be taken for granted, without any reflection on its consequences.

« 19 »   The title of our target article was a direct reference to *On Becoming Aware: A Pragmatics of Experiencing* (Varela, Depraz & Vermersch 2003). We see *pragmatics of experiencing* as a kind of process where each step of *becoming aware* has its own place. Each discipline/method can have its own internal logic according to which expression and intersubjective validation is performed (§§18–20). The relation between "logics" and pragmatics may be understood similarly to how Martiny (§7) described the connection between the levels of epistemology and pragmatics. Note that these levels interact with each other, and as in the case of neurophenomenology, their disconnection impedes the development of pragmatics sufficient for its radical counterpart (Martiny §7). As we pointed out in the target article (§23), modifications in epistemic access have consequences for intersubjective corroboration, hence the fundamental circularity posited by the enactive approach, and found in neurophenomenology. Given that constant refinement methodology echoes the pragmatic approach of Depraz, Varela and Vermersch (see the quote above, in §16) or Shusterman's transactional inquiry, we

would like to be extremely cautious about the attitude of "seeking compatibilities," as it might turn into the attitude of selecting only the content that fits the previously defined framework. This could happen not only during vertical refinement, but also when attempting to merge different disciplines or traditions. Take, for instance, something that Michel Lifshitz and Evan Thompson dubbed *the mindful brain*:

❝ [W]e argue that the neurocentric view of mindfulness meditation, a perspective we call 'the mindful brain,' is a simplistic take on what meditation is and how it works. Contrary to the neurocentric view, we see meditation as a deeply social, and fundamentally embodied collection of practices. If we reduce meditative practices to a set of brain patterns, we miss the richness of how these practices work and ignore much of what they have to teach us about human experience. ❞ (Lifshitz & Thompson 2019: 123)

« 20 »   A similar concern is put forward by Thompson in the introduction to the revised edition of *The Embodied Mind* (Varela, Thompson & Rosch 2016). He admits that their initial depiction of Buddhist philosophy in the first edition of the book was rather reminiscent of the style of "Buddhist modernism," which puts emphasis on mindfulness/awareness and "does not do justice to the complex historical and interpretative issues that arise in trying to relate mindfulness meditation practices (especially in their Buddhist modernist form) to the Abhidharma and Madhyamaka philosophies" (ibid: xxiii). As he adds, a few pages later, it had never been his intention to promote "Buddhist cognitive science" (ibid: xxix). Similarly, it was also not our intention to promote neurophenomenological somatics, somaesthetics and emersiology.

« 21 »   Having this in mind, we opt for the term "integration," which was also proposed by Pace Giannotta (§6) in regard to the methodological interference of neurophenomenology and the three disciplines we proposed. The "integration of methods" is how we perceive the process of methodological interaction, as it lowers the risk of enforced assimilation, where a dominating conceptual model (in this case dualistic, traditional phenomenology) simply makes redundant its subject of interaction (the

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methodologies of somatics, somaesthetics and emersiology), losing all unique contexts.

« 22 » The "integration of methods" does not imply a simple eclecticism strategy, but instead should involve the knowledge of backgrounds and contextual differences when deciding on merging methodologies, disciplines, or traditions. This is extremely important as even some small methodological differences can be significant and meaningful. We had this issue in mind, checking for mutual constraints of neurophenomenology, somatics, somaesthetics and emersiology, devoting to this matter a fair amount of attention in the second part of the target article. A good example is the research of Thecla Schiphorst. She integrates somatics and somaesthetics in the context of HCI design, where she blends these disciplines together and explores their synergy, but at the same time points out their different ameliorative (somatics) and meliorative (somaesthetics) characteristics (Schiphorst 2009). We thus fully agree with **Pace Giannotta**'s **Q1** suggestion "to look at the […] integration between these practices, which can lead to reciprocal enrichment within the framework of phenomenology and neuro-phenomenology."

Neuroimaging, neurofeedback and the inclusion of other disciplines

« 23 » Finally, we would like to discuss the issue of neurophenomenological praxis as **Pierce** (§§5f), **Vásquez-Rosati** (§11) and **Oblak** (§9) pose questions about including validation and reporting through neuro-imaging or neurofeedback into postulated models of inquiry.

« 24 » Let us refer once again to **Oblak**'s emphasis on "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" (**Q1**). He points out that "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**). First of all, presenting a standard-science operationalization of somatics, somaesthetics and emersiology would have

gone far beyond the scope of the target article. Secondly, all three disciplines are not research methods in the same way as, e.g., the phenomenological interviews utilized in neurophenomenology. Note that methods such as various Buddhist meditation techniques were not designed with operationalization demanded by neuroscientific inquiry in mind. However, nothing stands in the way of scientifically studying them (with a necessary precaution that we do not disrupt the original context, as in the case of the "mindful brain").

« 25 » Would it then not be too much to ask for a self-operationalization of somatics, somaesthetics and emersiology in order to include them into the corpus of neurophenomenology without taking into account the problem of compatibility? Yet, the process of their validation is very well established and was discussed in the target article (§§33–43). In particular, somatics and somaesthetics have gone through decades of development fuelled by pragmatist philosophy, and methods such as neuroimaging and neurofeedback have been incorporated in certain pragmatic solutions, as pointed out below.

« 26 » Let us briefly refer to some examples of including parametrization through neuro- and bio-feedback into somatic and somaesthetic methodology. These mainly relate to the areas of

- somaesthetic design creation, where data is obtained through wearable technologies, and
- HCI design with the inclusion of neuro-feedback.

Findings gained in the former area concern, for example, direct processes, such as breathing, which is monitored and modulated through wearable technologies (Frey et al. 2018), or a wider scope of somaesthetic design (Schiphorst 2009; Zhu 2021). As for neurofeedback, it was applied in somaesthetic research concerning brain-computer interactions (Antle, Chesick & McLaren 2018). To tie this to **Pierce's Q3**, neurofeedback is not something standing in opposition to the three disciplines outlined in the target article, but can be applied through them. It is thus not a question of which has "greater potential," but an open question of how to creatively combine them to push forward the neurophenomenological project.

« 27 » Last but not least, in §6, **Pace Giannotta** suggests extending our plan to include off-radar first-person methodologies to corporeal disciplines including yoga, martial arts, and bioenergetics. We feel encouraged by his suggestion, as this process of inclusion has been the topic of the recent work of one of us described in a book (albeit in Polish) on the somatics of urban performative disciplines, where the issue of first-person methodologies has been discussed in the context of somatic activities like parkour or freerunning (Petri 2020).

« 28 » Further investigation could take as a starting point **Pace Giannotta**'s suggestion of including other disciplines, which can be interesting from the point of view of research on first-person methodologies. We observe that some urban, somatic disciplines such as parkour and freerunning, have both developed knowledge concerning their tradition of modulating performers' movement, and follow their own unique tradition of somatic learning (Atkinson 2009; Lamb 2014).

« 29 » After reflecting on all the topics brought up in commentaries, we see a growing need for metaphysical reflection on and within neurophenomenology, something that Bitbol (2021) recently proposed. For instance, the interrelation between the theoretical/epistemic level and the pragmatic level that **Martiny** (§7) or **Vásquez-Rosati** (§3) addressed is something that calls for additional investigation.

References

Andrieu B., Nobrega T. P. & Sirost O. (2018) Body ecology: A new philosophy through cosmotic emersiology. Acta Universitatis Carolinae: Kinanthropologica 54(1): 16–27.

Antle A., Chesick L. & McLaren E.-S. (2018) Opening up the design space of neurofeedback brain–computer interfaces for children. ACM Transactions on Computer-Human Interaction 24(6, Article No. 38): 1–33.

Atkinson M. (2009) Parkour, anarcho-environmentalism, and poiesis. Journal of Sport and Social Issues 33(2): 169–194.

Bitbol M. (2021) The tangled dialectic of body and consciousness: A metaphysical counterpart of radical neurophenomenology. Constructivist Foundations 16(2): 141–151.
▶ https://constructivist.info/16/2/141

Bitbol M. & Antonova E. (2016) On the too often overlooked radicality of neurophenomenology. Constructivist Foundations 11(2): 354–356.
▶ https://constructivist.info/11/2/354

Depraz N., Varela F. J. & Vermersch P. (2003) On becoming aware: A pragmatics of experiencing. John Benjamins, Amsterdam.

Dewey J. (1938) Logic: The theory of inquiry. Holt, Oxford.

Dewey J. (1958) Experience and nature. Dover Publications, New York.

Frey J., Grabli M., Slyper R. & Cauchard J. R. (2018) Breeze: Sharing biofeedback through wearable technologies. In: Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems. Paper Nr. 645. ACM, Montreal: 1–12.

Ginot I. (2010) From Shusterman's somaesthetics to a radical epistemology of somatics. Dance Research Journal 42(1): 12–29.

Lamb M. D. (2014) Self and the city: Parkour, architecture, and the interstices of the "knowable" city. Liminalities: A Journal of Performance Studies 10(2): 1–20.

Lifshitz M. & Thompson E. (2019) What's wrong with "the mindful brain"? Moving past a neurocentric view of meditation. In: Raz A. & Thibault R. T. (eds.) Casting light on the dark side of brain imaging. Academic Press, London: 123–128.

Lévi-Strauss C. (1966) The savage mind. The University of Chicago Press, Chicago.

Miettinen R. (2000) The concept of experiential learning and John Dewey's theory of reflective thought and action. International Journal of Lifelong Education 19(1): 54–72.

Miyahara K., Niikawa T., Hamada H. T. & Nishida S. (2020) Developing a short-term phenomenological training program: A report of methodological lessons. New Ideas in Psychology 58: 100780.

Niikawa T., Miyahara K., Hamada H. T. & Nishida S. (2020) A new experimental phenomenological method to explore the subjective features of psychological phenomena: Its application to binocular rivalry. Neuroscience of Consciousness 6(1): niaa018. https://doi.org/10.1093/nc/niaa018

Petri J. (2020) Somatyka miejskich dyscyplin performatywnych: Skateboarding. Freerunning. Parkour [Somatics of urban performative disciplines: Skateboarding. Freerunning. Parkour]. Jagiellonian University Press, Krakow.

Schiphorst T. (2009) soft (n) Toward a somaesthetics of touch. In: CHI'09 extended abstracts on human factors in computing systems. ACM: Boston MA: 2427–2438.

Seigfried C. H. (1999) Pragmatism. In: Audi R. (ed.) The Cambridge dictionary of philosophy. Second edition. Cambridge University Press, New York: 730–731.

Shusterman R. (2015) Transactional experiential inquiry: From pragmatism to somaesthetics. Contemporary Pragmatism 12(1): 180–195.

Varela F. J. (1996) Neurophenomenology: A methodological remedy for the hard problem. Journal of Consciousness Studies 3(4): 330–349. ▶ https://cepa.info/1893

Varela F. J. (1999) Ethical know-how: Action, wisdom, and cognition. Stanford University Press, Stanford CA. ▶ https://cepa.info/2119

Varela F. J., Thompson E. & Rosch E. (2016) The embodied mind: Cognitive science and human experience. Revised edition. MIT Press, Cambridge MA. Originally published in 1991.

Zhu B. (2021) Designing for mindfulness: An exploration of interaction design with biodata inspired by Chinese aesthetics. KTH Royal Institute of Technology, Sweden.

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