PHILOSOPHICAL PERSPECTIVES ON EMBODIED COGNITION AND INTERACTION. SOME INTRODUCTORY REMARKS

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ABSTRACT. The paper outlines a series of introductory remarks on the dossier "Philosophical perspectives on embodied cognition and interaction." The first section identifies two major philosophical issues emerged as crucial in the investigations related to embodied cognition and challenged their conceptual limits: (1) situated action and interactions, and (2) the interface problem. A discussion of the way in which the embodied-enactivist accounts might improve our understanding of diverse forms of embodied cognitive practices can be found in the following section. It ends with a short overview of the key topics and arguments of the papers selected in the dossier.

Keywords: embodied cognition; enactivism; interaction; meaning; affectivity; higher order cognition; embodied language; thinking; embodied education; Heidegger, Martin; Richir, Marc; Gadamer, Hans-Georg; Merleau-Ponty, Maurice; Gibson, James; Varela, Francisco; Di Paolo, Ezechiel; Gallagher, Shaun.

It[1] is obvious now that the embodied cognition approach is able to address a large variety of topics: from sensorimotor capacities, drives, needs, emotions and affectivity, to language acquisition, embodied learning, semiotic bodies and conceptual understanding. Aspects of epistemology and methodology are also largely discussed in this new paradigm, while debates on the philosophical basis of embodiment already cover already a large part of the philosophical landscape. The perspectives offered by the paradigm of embodied cognition open new paths for conceptualizing and exploring the dynamics of cognitive processing. Also, they strive to push forward rigorous and well-grounded lines of research in various scientific areas of expertise. The philosophers involved in this movement share the

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[1] The papers contained in this thematic dossier have been submitted and presented at the conference "Speaking bodies. Embodied Cognition at the Crossroads of Philosophy, Linguistics, Psychology and Artificial Intelligence", which was supposed to be held in Cluj-Napoca in May 2020, but in the end the conference became an online event and took place on May 13-15, 2021. More than 100 participants from all over the world, from Peru to Philippines, presented a large variety of papers, grouped in 18 sections and panels. Please visit the conference site at http://embodiedcognition2020.devpsychology.ro/. I am grateful to my colleagues in the organizing committee for their sustained work and dedication.

In short, we aimed for an in-depth analysis of the link between cognition and body. We have been – and we still are – convinced that the conference topic is new and provocative, and that the embodied approach in cognitive sciences (See Gallagher 2011, p. 59) might be seen as a significant turn, if not a revolution, both in human and social sciences.

hope that together they will create concepts and theories susceptible to make a breakthrough in the nowadays philosophical practice while being compatible with scientific advances and rigorous analysis.

I.

Two major philosophical issues emerged as crucial in the investigations related to embodied cognition and challenged their conceptual limits:

1. situated action and interactions

From the beginning, the various strains of embodied cognition theories acknowledged to different degrees the role of interactions in cognitive processes. Natural cognitive systems of any sort do not passively receive information from the environment, but they "participate in the generation of meaning ... engaging in transformational and not merely informational interactions: they enact a world." (Di Paolo et al. 2014) We may say that experiencing the world results from both the mutual interaction of agents and the world, and of agents themselves. The manner in which this is happening and the consequences for the theories of cognition and, more generally, for our worldview – these are key research questions that future research will have to address.

It was believed that embodied-enactive accounts of cognition, which consider finally as a series of skillful interactions, face a problem when accounting for 'higher' forms of cognition. In recent years some important steps have been taken in addressing this issue. According to Gallagher (2011), an "interaction theory" should be added to this kind of approach. He assumes that our attitude towards other people is not a detached observation, but the result of embodied interactions and communicative actions. In Gallagher's view, understanding others is a direct and spontaneous activity. In order to ground his view in cognitive science, he adopts a developmental model according to which adult communicative and narrative practices stem from strong embodied interactions with other people during childhood. This view was developed in an interdisciplinary account of human action, in which he showed that in order to understand human agency and the aspects of mind that are associated with it, we need to take into account the concept of context.

The complex integration of primary and secondary intersubjective capacities, situated within a pragmatic and social context, that is both supplemented with and supporting communicative processes, can be mapped onto the model of a "meshed architecture" (Gallagher & Varga 2020, pp. 1-9). In their analysis Gallagher and Varga showed that cognition plays a key role in performance and how other factors situate performance. Through a more detailed view of how functional integration (the coupling of agent and world) and task dependency (a notion that pertains to organization and coordination) work in situated cognition, the concept provides a fertile framework for taking into account the specific form of engagement of the agent in knowing how to perform an action as simultaneously motoric and epistemic (Gallagher and Aguda 2020; Copoeru and Ludusan 2020).

2. the interface problem

Traditionally, "higher cognitive levels" have been viewed as wholly different from "sensorimotor" ones. Many results in cognitive science and philosophy indicate that

this distinction is obsolete. Either we accept the idea that the sensorimotor level is in fact more sophisticated than we supposed or we entirely abandon the categories that we used so far. Nevertheless, the research on this topic seems to go rather in the direction of thematizing the types of relationships between "higher" and 'lower' levels of cognition - the "interface problem" (see Burnston 2017). Actions seems to require sophisticated semantic and causal interactions between cognitive and sensorimotor levels. Recent trends in research seem to take into account different kinds of relations between lexical and sensorimotor representations and to explore them in a more nuanced way. Moreover, a developmental pathway has to be defined as the unfolding of a chain of events through which the new structures of embodied interaction are forming themselves.

II.

Based on Merleau-Ponty's idea of a meaning that is inseparable from its realization through the embodied agency, the embodied-enactivist accounts might improve our understanding of the diverse forms of embodied cognitive practices. They do not assume a foundational role by considering these practices as emerging from one type of cognition or another, but rather aim at describing practices accurately and identifying the occurrences where the meaning constitution of some sequences structurally requires an embodied-enactivist concept of action and interaction.

As some authors recently highlighted (e.g. Zahavi and Martiny, 2019) enactive concepts are rarely used in investigations of complex clinical phenomena, including the evolving sense-making of people living with various health conditions and of the ways in which they engage in managing their health (Stilwell and Harman 2021). There is a strong need to investigate the mechanisms and the contexts that enable successful patient-centered care.

The embodied-enactive approaches consider intellectual and bodily activities as being on the same level and strongly interdependent (see Varela, F. J., Thompson, E., & Rosch, E. (1991)). Therefore, the body is structurally involved in learning, which is seen as a form of engagement. The embodied-enactivist understanding of embodied cognition takes into account the learning environment (see Gallagher & Lindgren 2015), which need to be investigated as specific ways of engagement, in which the situatedness of actions and interactions and the interplay of bodily and intellectual processes significantly affect skilled performance.

III.

This issue contains a selection of texts which approach, in accordance with the journal's profile, a series of philosophical topics. They are ordered alphabetically, but the reader can find below a short overview of their key topics and arguments.

1. historical explorations and re-interpretations

Several papers are dedicated to the exploration of the work of significant philosophers, which come into discussion when we try to build a new conceptual framework for embodied cognition and interaction. Ekweariri (2021) chooses to compare Heidegger's "dense ontology" to Richir's account of affectivity, which favours the indeterminate

background feelings. But Heidegger is "targeted" from another direction as well. Declerck (2021) compares his concept of equipment (*Zeug*) to James Gibson's theory of affordance perception. In contrast to mainstream interpretations, he shows that equipment and affordance have in fact little in common. His conclusion is that we need a more comprehensive account of perception in order to adequately describe the possibilities offered by the environment.

Moving from Heidegger to Gadamer and back, Noveanu (2021) underlines that both philosophers agree on the fact that human sciences involve more than the epistemic subject and that the context i.e. the phenomenological concept of 'world' becomes part of the understanding process. Nevertheless, Gadamer insisted on the idea of a practical knowledge (*Wissen*), which surpasses the separations between theory and praxis, while Heidegger pushed the idea of (active) thinking to its limit, going beyond subjectivity. Thinking (*wesentliches Denken*) is for him *Vernehmen* - receptive thinking.

In her paper, Kiss (2021) attempts to connect the phenomenological approach of intersubjectivity to the psychological approach to embodiment. For this, she relies on Maurice Merleau-Ponty's work in an attempt to dissolve the classical mind-body dualism. She enlarges the conceptual discussion by taking into account the therapeutic process, as it appears in Ben Rumble's psychological approach and Sándor Ferenczi's psychoanalytic theory.

2. co-creation of meaning

How does the body-mind relationship function in the act of creation? Patricia Apostol shows that, while the construction of meaning starts from the subject, in the sense that it is the subject who by his embodied cognitive activity produces meaning, the construction of a concept or a work of art solicits a "super-personal force that engenders the subject himself: a heccéité, in the sense of Deleuze." (Apostol 2021, p. 15). She underlines that, taking into account the act of creation, the embodied cognition uncovers a level of de-subjectivation and thus mobilises the power of passivity.

Anne Gelhardt's paper focuses on the reciprocal intercorporeal attunement and co-creation of meaning *in a specific environment*: the interaction of d/Deaf persons and animals. The enactive approach opened new perspectives on the mechanisms of interaction as well as new approaches to respective research options. She is championing a qualitative approach combined with a quantitative research approach in a mixed-methods design. It is essential – she points out - to leave the anthropocentric perspective behind in order to capture the animal's perspective and the 'In-Between`. (Gelhatdt 2021, p. 97)

Bringing forward characteristics such as the autopoietic feedback loop, the spectator - performer exchange, and oscillation of the dichotomous subject-object pair, Ianniello (2021) proposes performing arts as a model for the investigation of the nature of our perception, seen as essentially relational, participative, and transformative. As Sara Incao and Carlo Mazzola (Incao and Mazzola, 2021) noticed, new technologies are progressively involved in art creation and exhibition, questioning the body and the human body's capabilities and motor potential. The Virtual Reality aesthetic experience is then susceptible to produce a new bodily configuration: hybrid and split into the virtual realm.

3. embodied affectivity

Two contributions to this dossier describe the transformations of the concept of affectivity in the context of the embodied cognition paradigm. In an investigation of the dialogical form of philosophical practice, Cosmescu (2021) brigs forward the *inter-affection* as a specific form of interaction. Taking another path, Dominic Nnaemeka Ekweariri (already mentioned above) points out that Richir's account of affectivity, "where indeterminate background feelings (affections) could give rise to a determinate and occurent emotion (affects)." (Ekwaeriri 2021, p. 55). In both papers we have not only a pladoyer for a richer account of affectivity, but also for a greater role of embodied affectivity in the description of human phenomena.

4. "higher order cognition": embodied language, thinking, and education

Outlining Merleau-Ponty's interpretation of higher-order cognition as a fundamentally embodied process that is enacted by a motor subject situated in a natural and cultural environment, Jan Halák showed that the body is involved in cognition as an operator of the phenomenal structuration of the environment even at the level of linguistic, rational, and abstract experience. He convincingly argues that Merleau-Ponty's dynamic structural interpretation of cognition offers us new insights on the relationship between "lower" and "higher" types of cognition. Merleau-Ponty was able, in his view, to pinpoint the articulatory power of language as a "finer differentiation of the articulatory power that we find in perceptual experience in the form of motor intentionality." (Halák 2021, p. 118)

Prakash Mondal's paper discussed the role of specific natural languages in structuring and shaping cognition in the context of language-thought relations. He advocated the need to take into account the constraints of body-world interactions that operate on modes/modalities of cognition. Thus, language-specific influences on thought, thinking and cognition are regulated by the constraints of embodiment. (Mondal 2021)

Inspired by an experimentalist conception of school and life, as well as the method of inquiry developed by Dewey, Anda Fournel and Jean-Pascal Simon (Fournel and Simon 2021) invite us to conceptualize and reason philosophically in a collaborative manner with the children involved in a P4C programme. In order to find out if these practices implement an embodied cognition approach, they selected a case study and analyzed it with the means of the analysis of verbal and co-verbal interactions. The study contributes to the definition of a framework of analysis of a corpus that could be applied to other topics. It is supposed to allow a better understanding of the way in which the participants are mobilising the image-schema in abstract collective reasoning and more specifically in a philosophical conceptualization. It will be a future task to determine if they play a role in the interactional dynamic.

Enactivism in education, especially in mathematics education, is currently a well established topic. Andrei Simionescu-Panait makes from the cases described by Davis, Proulx and Simmt a showcase for the idea that the enactivist approach is a viable alternative to constructivism or to classical views of learning. It proposes the idea that "the student collaboratively produces the problem, being able to see multiple solutions, and eventually becoming a performer of

knowledge." (Simionescu-Panait 2021, p. 191). The paper discusses the students' problem of being unable to link a new philosophical text discussed in class with their intuition and offers an example of a lesson design.

Martina Properzi's paper (Properzi 2021) deals with the issue of the embodiment of computing systems from the point of view of Unconventional Computation, focusing on the paradigm known as Morphological Computation. She expresses the view that Embodied Artificial Intelligence may be seen as embracing both conventional and unconventional approaches to the artificial emulation of natural intelligence and draws attention on the concept of "organic reconfigurability". Two advanced cases of study of organic or living morphological computers are discussed and the progress made in understanding the embodiment of computing systems is evaluated.

As a conclusion, I consider that the papers reunited in this issue of Studia UBB - Philosophia might be seen as a contribution to the philosophical framework for the study of interaction and embodied cognition. The implications of this approach for other philosophical or culturally relevant topics are still to be determined.

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