

## HOW TO LEAVE DESCARTES BEHIND. ON THE RELEVANCE OF MARXISM FOR POST-CARTESIAN PHILOSOPHY OF MIND

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Both mainstream cognitive science and analytic philosophy of mind remain wedded to the Cartesian picture of the mind as an isolated, self-sufficient, and constitutively individual phenomenon. However, recently approaches to the mind (e.g. extended mind thesis, enactivism) that depart from the standard view have emerged. A unifying thread that runs through these approaches can be summed up in the slogan: “to understand mental phenomena one cannot do away with the environment”. Differences between these related views pertain to the strength of the modal operator “cannot”. On the strongest reading the slogan implies that the mind is constituted by the environment. While this interpretation is akin to Marx view on the constitution of consciousness, this link is overlooked in the literature. In this paper, I will argue that Marxists philosophical thinking about the mind, as exemplified by the activity approach, offers a sound philosophical basis for the further development of post-Cartesian views in cognitive science and philosophy of mind. Furthermore, I will argue that the materialistic method proposed by these thinkers is the most promising approach to the problem of naturalizing the mind.

**Keywords:** activity theory, philosophy of mind, cognitive science, Marxism, enactivism

## ПРЕОДОЛЕВАЯ ДЕКАРТА: О ЗНАЧЕНИИ МАРКИЗМА ДЛЯ ПОСТКАРТЕЗИАНСКОЙ ФИЛОСОФИИ СОЗНАНИЯ

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Когнитивная наука и аналитическая философия сознания по сей день сохраняют верность картезианскому представлению о сознании как изолированном, самодостаточном и по определению индивидуальном феномене. Тем не менее, появились и новые походы к проблеме сознания (т. н. тезис о расширенном сознании, а также энактивизм), которые отходят от классической трактовки. Общий тезис, объединяющей все эти подходы, может быть сформулирован как слоган: «понять ментальные феномены невозможно в отрыве от окружающей среды». Различия между подходами сводятся к степени этой самой «невозможности». Сильная версия этого тезиса требует признания того, что сознание конституируется средой. И хотя эта идея близка марксову тезису о природе сознания, очевидная связь зачастую упускается в литературе. В этой статье я отстаиваю тезис о том, что марксистский подход к сознанию, представленный в концепции деятельностного подхода, предлагает разумную философскую основу для дальнейшего развития посткартезианских идей в когнитивной науке и аналитической философии сознания. Более того, я полагаю, что материалистиче-



ский метод, разработанный представителями этого подхода, является наиболее перспективным в решении проблемы натурализации сознания.

**Ключевые слова:** теория деятельности, философия сознания, когнитивная наука, марксизм, энактивизм

## Introduction

Recent decades have seen a flourishing, in analytic philosophy of mind and cognitive psychology, of approaches – so-called E-approaches – to mind and cognition that break with the Cartesian legacy that still animates much of contemporary theorizing about the mind. The origin of these post-Cartesian views is usually situated within philosophical and psychologic research traditions such as pragmatism, ordinary language philosophy, phenomenology, ecological psychology and American naturalism. While the genealogical focus on the Western-European and American philosophical tradition is understandable, this exclusive preoccupation with these traditions risks obscuring possible connections and fruitful engagement with other philosophical traditions. When connections have been made with other philosophical traditions, these have tended to be Eastern traditions such as Buddhism [Varela, Thompson and Rosch, 1990]. What has been almost completely overlooked is the convergence between E-approaches (especially enactivism – cf. infra) and certain Marxist approaches to the mind and cognition<sup>1</sup>. In particular, the approach to mental phenomena developed within the “activity approach” by philosophers such as E. Ilyenkov and F. Mikhailov is close in spirit to some forms of enactivism. That these trends in Soviet philosophy have been neglected is in some sense surprising, since they can be seen as allied to the socio-historical psychology of Vygotsky, whose work is well-known in Western philosophical and psychological circles. But while Soviet psychology may have been regarded in the West as a genuine cognitive endeavor, Western philosophers took a rather dim view of Soviet philosophical production. For many Soviet philosophy was merely a form of apologetics for the Soviet régime (see [Bakhurst, 1991]). This disdainful view of Soviet philosophy combined with a hostile attitude towards dialectics in analytic philosophy may account for the absence of references to Soviet philosophical literature in contemporary analytic philosophy of mind.

Whatever the historical reasons might be for this neglect, in this paper I want to excavate some of the common ground between E-approaches to cognition and the Soviet activity approach. In particular, I will argue that the rejection of the Cartesian picture of the mind turns these approaches

<sup>1</sup> A notable exception is [Lektorsky, 2016].



into close allies when it comes to understand the mind. I will start with an outline of the Cartesian picture of the mind and how it still dominates current theorizing in analytic philosophy of mind (Section 2). In Section 3 I then turn to a discussion of the so-called E-approaches to cognition that have emerged in recent decades in the philosophical and psychological literature. I will argue that among the various E-approaches only enactivism effects a radical break with Cartesianism. In Section 4 I give an account of those aspects of activity theory that are relevant for the present discussion. While the presentation will make it clear that there are indeed close links between enactivism and the activity approach I will conclude this paper by pointing out a few areas in which a closer interaction between the two approaches might be beneficial for both.

### The Cartesian legacy

The idea that Cartesian presuppositions continue to shape much of the contemporary discussion about mind and cognition may look bizarre at first sight. After all, very few philosophers, psychologists or cognitive scientists are willing to defend one of the central Cartesian claim, viz. that the mind is a non-material substance. And if there are indeed very few theorists that defend the non-materiality of the mind, it would seem, there can be barely any lingering Cartesianism in the contemporary discussion on mind and cognition.

However, this argument is predicated on the assumption that Descartes' theory of the mind can be reduced to the non-materiality of the mind. While substance dualism was indeed a central claim put forward by Descartes, his view of the mind cannot be reduced to it. Indeed, a classical Cartesian view of the mind asserts the following theses on the mind:

- The mind is immaterial
- The mind is self-sufficient
- The mind is self-contained
- The mind is representational

The first thesis is a statement of substance dualism which is rejected by an overwhelming majority of contemporary philosophers of mind and cognitive scientists. Thesis (b) states that the individual mind has its powers and contents by itself or can develop its powers and contents by itself. Tyler Burge succinctly characterizes the self-sufficient or individual nature of the mind as follows:

an individual person's or animal's mental state and event kinds.... can in principle be individuated in complete independence of the natures of empirical objects, properties, or relations (excepting those in the indi-



vidual's own body, on materialist and functionalist views) – and similarly do not depend essentially on the natures of the minds or activities of other (non-divine) individuals [Burge, 1986, p. 118–119].

This does not necessarily imply that newborn infants would have the same mental capacities as adult humans. It does however imply that a newborn infant could acquire, through natural maturation or development, the same mental capacities of an adult without being immersed in a socio-cultural environment. The mental development can thus in principle unfold in complete isolation<sup>2</sup>. While the thesis of self-sufficiency expresses the idea that the mind is diachronically independent of external factors, the idea of self-containment is meant to capture the idea that the mind is synchronically independent of the external environment. Another way to express this idea is to say that the mind is turned onto itself and cannot and need not turn to the external environment to function. The idea that the mind is in some way identical with or a function of the brain is a popular contemporary interpretation of these ideas. Indeed, if the mind is a biological organ, then its maturation and function is ultimately genetically determined. Hence, it is not dependent for its development as mind on interaction with the environment<sup>3</sup>. If the mind is only inward-looking the question arises how the mind can come to obtain knowledge about the external world. The Cartesian answer is that the mind comes into contact with the external world via intermediary representational vehicles, i.e. mental ideas or mental representations. Starting from perceptual impressions the mind constructs its knowledge of the external world by transforming and manipulating the perceptual impressions according to certain rules. The mind is thus essentially a representational device. In contemporary philosophy of mind and cognitive science, the idea that the mind's essential function is that of representing is widely accepted. Dretske, a leading analytic philosopher of mind, expresses a mainstream view when he writes that “the manipulation and use of representations is the primary job of the mind” [Dretske 1995, p. xiv].

The predominance of the representational theory of mind (RTM hereafter) is connected with the cognitive revolution in psychology in the mid-twentieth century. The central proposal of cognitivism is that the mind

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<sup>2</sup> This is not to deny that in comparison to subjects who developed in a socio-cultural environment, the mental capacities of the subject who developed in complete isolation would be impoverished. However, self-sufficiency does imply that the mind of such Robinson Crusoe subjects would still share the essential features of normal human minds.

<sup>3</sup> Biological organisms do of course depend on exchange of matter and energy for their biological maturation. Proponents of self-containment and self-sufficiency do not deny this obvious fact. They do deny however that the mind/brain is dependent on any other interaction with the environment to develop its mental capacities. The popularity of various “brain in a vat” scenarios in the philosophy of mind attests to the widespread acceptance of the assumption of self-containment and self-sufficiency of the mind.



is an information-processing device that can be best understood on the model of digital computers. What the computer model adds to the classical RTM is that it conceives of the rules according to which ideas are manipulated as syntactic rules akin to the rules of a logical calculus. According to the proponents of contemporary cognitivism it is the formalizability of these rules that gives the computer model of the mind a decisive predictive and explanatory advantage over its rivals<sup>4</sup>.

In so far as current philosophy of mind and cognitive science remains wedded to cognitivism, its theorizing remains firmly within the Cartesian framework. Some theorist however reject the classical computer model of the mind and cognition and replace it with a model in which the mind is conceived of as a neural network. Do these models fall outside the Cartesian framework? As it turns out, trading the classical computer model for connectionist models does not necessarily imply a repudiation of the basic Cartesian assumptions. Firstly, there are those philosophers who believe that connectionist models of the mind are fully compatible with a RTM [Clark, 1989]. But even those who argue that connectionism is incompatible with a RTM remain wedded to the idea that cognitive processes do occur internally and need not involve any interaction with the environment (see e.g. [Churchland, 1989]). In other words, even those theorists who reject the representational assumption remain wedded to the idea that the mind is self-sufficient and self-contained.

But as Rowlands justly points out the inner aspect of mental processes is a hallmark of Cartesianism:

Cognitive processes – the category of mental processes with which cognitive science is concerned – occur inside cognizing organisms, and they do so because cognitive processes are, ultimately, brain processes (or more abstract functional roles realized exclusively by brain processes). It is this unquestioned assumption that makes Cartesian cognitive science Cartesian. [Rowlands, 2010, p. 3]

As can be seen from the above overview much of contemporary theorizing about the mind remains firmly within the Cartesian paradigm. While substance dualism is almost universally rejected, a majority of philosophers of mind and cognitive scientists accept at least one of the remaining assumption of Cartesianism. In the next section I will present a set of approaches to the mind which depart in various degrees from the remaining Cartesian assumptions.

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<sup>4</sup> For a critical discussion of this point see [Varela; Thompson; Rosch, 1993, p. 138].



## Leaving Descartes behind: recent trends in analytic philosophy of mind

As I have argued in the previous section, mainstream contemporary theorizing about the mind remains wedded to a Cartesian view of the mind. Admittedly in their striving to naturalize the mind, the assumption that the mind is a separate, non-material substance has been dropped. However, the Cartesian assumption that the mind is a self-contained, self-sufficient and representational device remain firmly in place. There are however various philosophical and psychological conceptions of the mind that are critical of the latent Cartesianism in philosophy of mind and cognitive science.

Western philosophical traditions and philosophers that have challenged the Cartesian assumptions include phenomenology, American naturalism and pragmatism, ordinary language philosophy and Wittgenstein<sup>5</sup>. Partly inspired by these philosophical traditions and drawing on empirical work in, inter alia, the tradition of Gibson's ecological psychology and robotics, the so-called E-approaches have recently come to the foreground as challengers of mainstream conceptions of mind and cognition. The term "E-cognition" does not refer to a single approach to cognition but rather to a set of loosely related paradigms in the study of cognition that depart, in various degrees, from the classical approach to cognition and the mind. What relates those different approaches can be summed up in the slogan: to understand mental phenomena one *cannot* do away with the environment". Differences between these related views pertain to the strength of the modal operator "cannot". While more conservative E-approaches tend to interpret the "cannot" to mean that the causal influences of interaction between the subject and the environment are necessary to understand the workings of the mind, more radical approaches interpret the "cannot" to mean that the mind is not merely causally influenced by the environment, but that the mind is constituted by the interaction with the environment. In what follows I will briefly present the various types of E-cognition.

The paradigm of Embedded Embodied cognition stresses the fact that intelligent behavior does not only result from internal (brain) structures but is the product of dynamic interaction between brain, body and world.

<sup>5</sup> For the relationship between current non-Cartesian approaches and phenomenology see e.g. [Varela; Thompson; Rosch, 1993]; for connections with American naturalism and pragmatism see e.g. [Chemero, 2009]. The non-Cartesian orientation of ordinary language philosophers' approach to the mind is exemplified by Gilbert Ryle's *The Concept of Mind* [Ryle, 2009]. Wittgenstein's radical non-Cartesian approach is clear throughout his later works, in particular *Philosophical Investigations* [Wittgenstein, 2009] and *Remarks on the Philosophy of Psychology* [Wittgenstein, 1980]. For a discussion of Wittgenstein's relevance for contemporary non-Cartesian approaches see [Moyal-Sharrock, 2013].



Theorists taking an embodied and embedded approach to cognition point to a wealth of experimental evidence showing that in the performance of cognitive tasks such as remembering, linguistic communication and reasoning we make extensive use of body and environment to complete these tasks<sup>6</sup>. Proponents of Extended cognition take the embodied and embedded insight a step further and argue that external artefacts can become literally a part of our mind<sup>7</sup>.

Despite their emphasis on the embodied and embedded aspects of cognition, it is far from clear whether the types of E-approaches discussed in the above fundamentally challenge the classical Cartesian picture of the mind. While they do display a greater sensitivity than the classical approach towards the fact that in order to understand mental phenomena, one needs to pay close attention to the interaction between brain body and world, they seem to leave the self-sufficiency, self-containment and representational assumptions fundamentally unchallenged.

Indeed, while the interaction between embodied subject and environment is taken into account, it would seem that the interaction is merely of instrumental value for the subject. For example, embodied and embedded theorists, when describing the role of external artefacts, often talk as if the environment and body act merely as a medium in which the subject can off-load some of the cognitive tasks it usually performs internally. The interaction with the environment thus merely allows us to perform mental tasks more efficiently – mental tasks that could be performed, although slower and less reliable, by isolated minds. Describing the role of body and environment in terms of “off-loading” pre-supposes that these cognitive tasks can be performed by an isolated mind. In particular, this implies that the mind is self-sufficient, and does not depend for the growth of his mental capacities on the environment in a constitutive way. True, minds that do not enjoy immersion in a socio-cultural environment may not be as proficient as those that are so immersed in performing cognitive tasks, they are nevertheless fully functioning organs of thought. The self-sufficiency of minds is also presupposed by extended mind theorists. For example, Clark and Chalmers in their defense of the concept of extended cognition proposes that we treat processes that involve external activity as cognitive if they are in certain respects isomorphic to internal (brain) processes [Clark; Chalmers, 1998, p. 8]. Whatever the *prima facie* plausibility of this idea, it clearly presupposes that the processes that go in the head/brain are intrinsically cognitive. Rather than taking the interaction between

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<sup>6</sup> For example, the psychologist David McNeill showed that the use of gesture facilitates language processing, thus showing that embodied action helps the mind/brain in its linguistic capacities [McNeill, 1996].

<sup>7</sup> For example, extended mind theorists argue that the regular use of a notebook by an amnesiac subject to recall information makes that notebook literally a part of the subject’s memory and thus of her mind [Clark; Chalmers, 1998].



subject and environment as being constitutive for the mental phenomena, it assumes that the internal processes are intrinsically cognitive and they do not depend on anything outside the brain for their mental status.

The same goes for that other quintessential Cartesian assumption of the mind as a representational device. As already noted the representational assumption derives from a strict separation between a cognitive subject and its environment. This presupposition is taken over by the E-theorist mentioned up until now. They differ from more classical representational theories in that they conceive of these representations not as complete representations of a state of affairs in the environment as such, but rather as representations that represent those aspects of the world that are relevant for the subject's ongoing interaction with the world<sup>8</sup>.

As can be seen from the discussion the aforementioned positions depart from the standard Cartesian view of the mind in that they try to accommodate the idea that interaction between the cognitive subject and the environment plays a role in the cognitive life of the subject. However, these positions remain firmly wedded to the basic assumptions of Cartesian philosophy of mind. They remain averse to the idea that the mind is not merely causally influenced by the interaction with environment, but that this interaction constitutes the mind.

A radical break with the Cartesian conception of the mind can be found, *inter alia*, in the various forms of Enactivism that have been proposed in the last decades. What all the various forms of enactivism have in common is that they reject the idea that there is a fundamental separation between the cognitive subject and the environment in which the cognitive subject is situated. Rather than regarding the subject as a fully-fledged and self-contained thing that exists prior to its immersion in an environment, enactivism starts from the premise that the cognitive subject arises out of its interaction with the environment. It is thus a form of embedded and embodied view of cognition, but it departs from the more conservative embodied and embedded views discussed above in that it radically rejects the Cartesian presuppositions of self-sufficiency and self-containment. One strand of enactivism, initiated by Varela, Thompson and Rosch [1990] is autopoietic enactivism. For autopoietic enactivism mentality arises out of the self-organising and self-creating activities of all living beings. Any living organism is, according to the proponents of autopoietic enactivism, not a passive object that simply undergoes the pressures of the environment but is an agent that structures its environment in order to maintain life. There is thus a reciprocal and continuing dynamics between the organism and the environment in which both are constantly shaping one and other. This dynamic coupling of the agent with its environment implies that there is no absolute ontological border between the subject and its environment,

<sup>8</sup> Examples of such pragmatic notions of representation include action-oriented representations [Mandik, 2005] and pushmi-pullyu representations [Clark, 1997].





and hence on this account it does not make any sense to view a cognitive agent or mind as self-contained or self-sufficient? Autopoietic enactivism is premised on the deep continuity thesis between mind and life. Evan Thompson, one of the leading theorists of autopoietic enactivism describes this thesis as follows: “The organizational properties distinctive of mind are an enriched version of those fundamental to life” [Thompson 2007, p. 9].

This implies that life and mind go hand in hand, or, that living beings are always in some sense minded<sup>9</sup>. Autopoietic enactivism offers thus a thoroughly biological picture of cognition and mind in which the reproducing and creative activity of the biological subject play a central role in the constitution of mentality. In particular, its explicitation of goal-directed behavior in terms of biological normativity (i. e. in terms of self-preservation) offers an attractive view of adaptive behavior that does not rely on such Cartesian posits such as ideas reflecting or representing the state of the environment. This approach has, despite its attractiveness, a number of problems. In particular, the continuity thesis implies that even such simple life-forms as bacteria experience their environment as laden with meaning and value<sup>10</sup>. In terms of the activity approach, the continuity thesis implies that simple life forms already interact with the “ideal” properties of their environment. As Hutto and Myin [2017] rightly observe, it is difficult to see how a simple organism can acquire the capacity to engage with ideal properties without having gone through a process of enculturation.

Another version of enactivism, radical enactivism, was introduced by Hutto and Myin [2013, 2017]. The point of departure for radical enactivism is the observation that the RTM lacks a naturalistic account for meaning or representational content<sup>11</sup>. Recall that according to the RTM the mind contains representations that represent the outside environment, hence they are semantic entities that have a meaning. But how can the semantic content of these syntactic objects be accounted for? Since the RTM assumes that the mind is self-contained and self-sufficient the semantic content of mental representations cannot be rooted in socio-cultural practices such as language use, hence the semantic content of mental representations is intrinsic<sup>12</sup>. The most promising solution strategy to semantic problem that is consistent with the basic assumptions of the Cartesian assumptions of the RTM, the so-called teleosemantic approach initiated by Millikan [1984] and Dretske [1981], so they argue, has failed to provide a solution<sup>13</sup>. According

<sup>9</sup> See also [Colombetti, 2014, p. xvi] for an explicit statement that “life is always minded”.

<sup>10</sup> See e.g. [Thompson; Stapleton, 2009, p. 26].

<sup>11</sup> Naturalism is here to be understood in the sense of materialism.

<sup>12</sup> Searle, who is highly critical of the computer model of the mind, argues that the meaning of public language derives from the (presumed) intrinsic meaning of mental representations. [Searle, 1992].

<sup>13</sup> For a discussion of the problems encountered by teleosemantic strategies to solve the problem of semantic content see [Hutto; Myin, 2013] and [Godfrey-Smith, 2006].



to proponents of radical enactivism this failure to solve the semantic problem for mental representations implies that we should look for another conception of the mind. Like autopoietic enactivism radical enactivism stresses the idea that the mind should be understood as emerging from the dynamic interaction between an organism and its environment. However, unlike autopoietic enactivism, it holds that meaning and value do not arise at the level of simple life organisms but only in organisms that are initiated in socio-cultural practices. Radical enactivists thus present a view of the mind in which some basic forms of mentality can be ascribed to non-human animals, while only enculturated organisms have the capacity to engage with meaning and value. In particular, they do not deny that cognition may involve the manipulation of representation. However, radical enactivism conceives of representations as public representations that emerge out of socio-cultural practices. Unlike the more moderate E-approaches, it rejects the Cartesian assumption that representation is the mark of the mental.

In the above I have merely sketched the basic ideas that motivate enactivism and much more needs to be said in order to argue comprehensively for the conceptual and empirical viability of the enactivist approach. However, for the purpose of this article, viz. highlighting the common ground between enactivism and the activity approach, this brief sketch will suffice.

## **Leaving Descartes behind: mind in the activity approach**

The activity approach finds its origin in the attempts Soviet philosophers and psychologists, to develop a Marxist theory of knowledge and a Marxist theory of mind out of the scattered remarks by Marx and the writings of Engels and Lenin. That such a Marxist approach should adhere to the basic epistemological and ontological principles of Marxism, i.e. that it should be both materialistic and dialectical, was agreed upon by the Soviet philosophical community. However, there was considerable disagreement about what exactly a dialectical and materialistic approach to the mind should consist of. The fundamental disagreement between the various Soviet approaches to the mind can be best understood if we focus on the anthropological pre-suppositions of these various approaches. These anthropological pre-suppositions all depend on how one conceives of the human subject as a subject of cognition, for which there are, according to Mikhailov two options:

[...] either man is an object, a body on whose structural peculiarities all its functions depend, or man is the subject of historical action, a history-maker, a being who lives in time and not merely in space and who realizes



in his personal bodily life-activity the universal forms of historical development of the means of people's objective action, and who only for this reason is capable of setting goals, of thinking [Mikhailov, 1980, p. 136].

Proponents of the activity approach opted for the second alternative, arguing that the first option is a return to pre-Marxist materialism. Soviet thinkers, like Dubrovsky, more aligned with natural sciences – in particular with genetics and cybernetics – regarded the first option as the only genuine scientific and materialist approach, claiming that the activity approach was a return to idealism<sup>14</sup>.

Mikhailov's short description of the basic outlook of the activity approach gives already a clear idea of its anti-Cartesian orientation. The emphasis on bodily life-activity as a pre-condition for thought makes clear that there is no room for mind as a non-material substance. Furthermore, the emphasis on activity and universal forms of historic development (i. e. culture) as necessary for thinking indicate a rejection of the mind as self-contained and self-sufficient.

Ilyenkov similarly stresses that to understand thinking one cannot focus one's attention to what happens inside an individual's mind:

In order to understand thought as a function, i.e. as the mode of action of thinking things in the world of all other things, it is necessary to go beyond the bounds of considering what goes on inside the thinking body [Ilyenkov, 1977, p. 52].

A necessary corollary of this point of view is that it is a mistake to think that one can understand the cognitive capacities of human subjects by restricting one's attention to the brain or nervous system of an individual. Neither Ilyenkov nor Mikhailov deny that having a mature and well-functioning brain is a necessary condition for being able to cognize. On the contrary they state that without a brain, cognition would be impossible:

Of course, if certain physiological processes did not take place in the brain I could not think or comprehend [Mikhailov, 1980, p. 116].

However, that the brain is the "material substratum of the mind" [Mikhailov, 1980, p. 117] does not imply that an investigation of the mind reduces to the investigation of the brain. Following Vygotsky, proponents of the activity approach adopt a functional view with respect to mental capacities according to which a mental capacity such as perception, thought or memory is to be understood in terms of what it does or brings to a set of activities of the subject. But, it is hard to see how the study of physiological processes in the brain can reveal the function of a given psychological capacity. For example, with respect to the capacity of thinking Ilyenkov remarks that:

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<sup>14</sup> See [Bakhurst, 1991] for an overview of this discussion. For precedents to this discussion in the history of Soviet philosophy see [Bakhurst, 1991] and [Sheehan, 2017].



[...] you can find the functional determination of thought only if you do not probe into the thinking body (the brain) [...] Within the skull you will not find anything to which a functional definition of thought could be applied, because thinking is a function of external, objective activity [Ilyenkov, 1977, p. 73].

Ilyenkov thus argues that the functional definition of thought, since it involves external objective activity, is such that it cannot apply to any neurophysiological processes<sup>15</sup>. But even if one accepts that Ilyenkov has a valid point as far as thought is concerned, one may still argue that the functional determination of other psychological functions like perception or memory can be established by probing into the thinking body. However, one could interpret Ilyenkov's point as meaning that without a prior functional determination of a mental capacity, one cannot even begin to examine the underlying material processes that make it possible. Alternatively, one may point out that Vygotsky's and Ilyenkov's functionalism holds the development of the each of the psychological capacities depends on, and is modified by, the development of the others. This implies that, for example, the development of the human perceptual capacities is a function of the development of the capacity to think. If the latter's functional determination cannot be read off from the brain, then the same goes for other capacities.

Ilyenkov's reasons for claiming that thought is an outward activity, are based on his theory of the "ideal". Under the category of the ideal fall the non-material properties of the world such as meaning and value. Any materialistic theory that wants to make sense of the ideal should start by describing the ideal as something that is amenable to materialistic analysis. Ilyenkov takes as his point of departure the analysis of the ideal property of (economic) value by Marx in *Capital*. From Marx's discussion on (economic) value and value representation through money he extracts the conclusion that the ideal is a "relationship between at least two material objects (things, processes, events, states), within which one material object, while remaining itself, performs the role of a *representative of another object*" [Ilyenkov, 2014, p. 33]. Ilyenkov thus follows the Cartesian tradition in accounting for meaning and value in terms of representations but gives it a Marxian twist by holding that representations are constituted by socio-cultural practices. This Marxian twist puts his analysis in opposition to the Cartesian tradition which conceives of mental representations as mental states of individual minds. Nor does he hold, as contemporary philosophers of mind tend to do, that material objects or processes (e.g. brain processes) are intrinsically representative. What turns one material object or process into the representation of another material object is the social activity of human subjects. Just like the representation

<sup>15</sup> This point is akin to the point made by, inter alia, Bennett and Hacker that using psychological predicates to describe brain functions is based on the mereological fallacy [Bennett; Hacker, 2003].



of the value of a commodity in the medium of money depends on a whole socio-cultural practice of economic reproduction, so any representation depends on socio-cultural practices. It in turn follows that ideal properties that are not the externalization of individual states of minds, but rather that individual minds grasp ideal properties through engagement with the external world which through the history of human activity has become idealized. Ilyenkov defends this account of the ideal as a materialistic account and castigates those materialists who want to reduce the ideal to materialistic processes in the brain:

Materialism in this case does not consist at all in identifying the ideal with the material processes taking place in the head. **Materialism** is expressed in understanding that the ideal, as a socially determined form of the activity of man creating an object in one form or another is engendered and exists not in the head but with the help of the head in the real objective activity (activity of things) of man as the active agent of social production [Ilyenkov, 1977, p. 261].

If the above account of ideal properties in terms of representation is correct and if thought involves interaction with ideal properties, it follows that the mental activity of thought cannot be the activity of a self-contained and self-sufficient organism. In order to think one must engage with the externally given and “historically established and socially established (‘institutionalised’) *universal representations*” [Ilyenkov, 2014, p. 33], and since self-contained and self-sufficient organisms lack the capacity to do so, it follows that the brain by itself lacks that capacity.

This brief sketch of the account of the mind by philosophers in the activity-tradition shows that it constitutes a definite break with the Cartesian tradition.

## Conclusion

In the previous sections I have given an overview of recent E-approaches to the mind and the activity approach to the mind. I have argued that among the various E-approaches, only enactivism breaks radically with the Cartesian view of the mind. Like the activity approach it denies that

- (A) the mind is identical with or a function of the brain
- (B) individual brains/minds can develop in isolation
- (C) material processes or objects can represent independent of socio-cultural practices

Given that the E-approaches and the activity approach developed without any notable interaction, one may wonder whether this common ground can be useful for the further development of a post-Cartesian view of the mind. I will end by briefly discussing two relevant points. Firstly,



enactivism has been criticized for its supposed inability to account for more abstract forms of cognition such as ethical or esthetical cognition. In order to meet this challenge enactivists will have to reconceive the ethical and the esthetical so that is amenable to an enactivist approach. Ilyenkov's treatment of the ideal may serve as an inspiration to develop such a naturalistically respectable account. Secondly, the activity theory's view of the mind, with its emphasis on human socio-cultural history, seems to imply that non-human animals must be completely devoid of mentality. In the light of recent discoveries concerning the behavior of other social animals this may seem to be overly restrictive. The conceptual toolbox of radical enactivism – in particular the distinction between basic minds and encultured minds – may offer a way to reconcile the evolutionary continuity of human and non-human organisms on the one hand and the distinctiveness of human minds on the other hand.

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