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THEORETICAL CONTROVERSIES— TERMINOLOGICAL BIASES: CONSCIOUSNESS REVISITED

Abstract. Although scientific practice sometimes encounters philosophical difficulties, it cannot shoulder the burden of resolving them. This can lead to controversies. An unavoidable difficulty is rooted in the linguistic attitude, i.e., in the fact that to a considerable extent we express our thoughts in words. I will attempt to illuminate some important characteristics of linguistic expression which lead to paradoxical situations, identifiable thanks to philosophy. In my argument, I will investigate how the notion of consciousness has altered over the course of philosophical investigation and how it relates to recent scientific practice. In conclusion, I will focus on a few recent so-called *radical* positions in philosophy with regard to a framework within which consciousness and more generally mental phenomena can be regarded in a new light, as well as on the barriers we face when trying to unify scientific results.

Keywords: consciousness, sensorimotor approach, global workspace theory, Merleau-Ponty

In the first section, I will attempt to illuminate those characteristics of language that can lead to confusion or controversies both in science and philosophy. I will rely on some earlier explicit criticisms regarding abstract concepts and grammar, and relate them to polymorphism as construed by Aaron Sloman. In the next section, within the framework of a brief outline of the role consciousness was considered to play in the theory of mind, I will focus on James's (a prominent exponent of American naturalism) and Merleau-Ponty's (an early proponent of the idea of embodiment) conceptions of consciousness and their warnings with regard to the peculiar relation between abstraction and theoretical practice. Both James and Merleau-Ponty set out an alternative to the body–mind dualism, and, in the third section, I will focus on *Global Workspace Theory*, which suggests a radically different approach to this body–mind dualism.

Although scientific research has provided many details regarding how consciousness and brain function relate, some questions remain unanswered.

Under the heading of the *sensorimotor approach*, in the fourth section, I will touch upon three routes that offer an alternative to the brain-centred approach of global workspace theory and challenge some traditional frameworks in philosophy. *Radical Embodied Cognitive Science* attempts to provide an alternative to the representationalist account of cognition based on Gibsonian ecological psychology (and hence American naturalism as well) and dynamical system theory. Similarly, *radicalized enactivism*, as construed by Hutto and Myin, argues that basic cognitive processes are not best understood in terms of the manipulation of their content, but rather, in terms of interactions with the subject's surroundings. Thus, an intentionally directed mind is not inherently *contentful*. This radicalized view challenges representationalist, computationalist, and phenomenological approaches. O'Regan's *sensorimotor approach* is based on a new approach to seeing and extends to other senses. It provides a framework within which conscious *feel* can be understood in terms of interaction with the environment in accordance with the different senses, and yields an explanation for why many cognitive functions are not accompanied by *real feel*. His account of consciousness is, at least to some extent, in propinquity with Merleau-Ponty's holistic and James' functionalist approach.

In conclusion, I will take into consideration some methodological issues, such as the possibility of the reconciliation of different approaches to conscious phenomena, and, in particular, their conceptual and methodological apparatus.

1. Linguistic Stance

To begin with, I will attempt to outline two features of linguistic expression: the special *deceptive character* of concepts, and the *looseness* of grammar, as Wittgenstein would say. I will suggest that these two peculiarities lead to unnoticed tendencies, viz. the tendency to commit category mistakes and, importantly, to double certain phenomena. With regard to mental phenomena, and consciousness in particular, we can find numerous warnings against these mistakes and note how difficult it is to avoid them.

First, I will outline what constitutes the deceptiveness of concepts, relying on some remarks by Bergson and Ivins and relating their observations to polymorphism as Aaron Sloman construed it. Concepts are abstract and general, but at the same time they are highly specific. When attempting to describe an object or situation, we often find that it is difficult, if even possible, to express the actual "this-and-no-otherness", the *ipseity* of the

scenario. It is beyond question that “the object is a unity that cannot be broken into separate qualities without becoming merely a collection of *abstractions that have only conceptual existence and no actuality*” (Ivins, 1953, p. 63, emphasis added). Accordingly, a “concept can only symbolize a particular property by making it common to an infinity of things. It therefore always more or less deforms the property by the extension it gives to it. . . . Thus the different concepts that we form of the properties of a thing inscribe round so many circles, each much too large and none of them fitting exactly” (Bergson, 2007, p. 12). That is, because the meaning of a concept changes in accordance with the subject the concept is applied to and because its meaning can be extended on the basis of analogy and/or resemblance, errors and controversies can result. Additionally, when describing or explicating a phenomenon, we are liable to introduce increasingly abstract, sometimes loosely and sometimes aptly defined concepts for the sake of precision.

Sloman describes these phenomena in terms of polymorphism. He distinguishes two types of polymorphic concepts: parametric and ad hoc ones. “A concept, relation, or function has parametric polymorphism if it can be applied to entities of different types, and the precise specification of the concept, relation or function, e.g. the truth conditions of a concept, depends in a principled way on the type of entity.” Ad hoc polymorphism, on the other hand, “result[s] from a sequence of extensions that some language users found convenient, rather than being determined by the previous meaning. What Wittgenstein called a ‘family resemblance’ . . . typically has this character” (Sloman, 2010, p. 8). The verbs *build*, *experience*, *notice*, *attend to*, *discover*, and *perceive*, adjectives such as *large*, *short*, *good*, and *bad*, and concepts with special importance from the perspective of the present article, such as, *aware*, *conscious of*, *what it is like to be X* are all polymorphic. I will return to polymorphism later in connection with consciousness.

To some extent, loose grammar as Wittgenstein construed it relates to polymorphism and the deforming potential of concepts. As he noted, “[o]ne of the chief troubles is that we take a substantive to correspond to a thing. Ordinary grammar does not forbid our using a substantive as though it stood for a physical body. The words ‘soul’ and ‘mind’ have been used as though they stood for a thing, a gaseous thing” (Wittgenstein, 1979, p. 31 f.). That is, sometimes we associate certain features with a concept without noticing, and consequently we deform it. As we will see, and as Wittgenstein put it, “[t]he phrase ‘in the mind’ has caused more confusion than almost any other in philosophy” (Wittgenstein, 1979, p. 114).

As mental phenomena relate to the mind, consciousness relates to mental phenomena. In the 17th century, consciousness as a specific characteristic

of the mind became an important issue in philosophical inquiries. Descartes, in *The Principles of Philosophy*, wrote “By the word thought, I understand all that which so takes place in us that we of ourselves are immediately conscious of it; and, accordingly, not only to understand (*intelligere, entendre*), to will (*velle*), to imagine (*imaginari*), but even to perceive (*sentire, sentir*), are here the same as to think (*cogitare, penser*)” (Descartes, 1901, p. 303). Some novel suggestions were considered, such as the possibility of unconscious thought,¹ and eventually the concept of consciousness became more and more detailed. Yet a generally accepted definition is still not at hand. Although we use the phrase *being conscious of something* quite often in an obvious way, consciousness seems to be rather enigmatic when we try to define or describe it. “Consciousness is both the most obvious and the most mysterious feature of our minds” (Gregory, 1987, p. 160). As our understanding of consciousness evolved from within the framework of reflexive thought and the self in connection with different mental phenomena, its meaning can vary depending on the phenomenon being referred to.

2. Efforts to Set a New Stage

Since the concept of consciousness emerged from within a substance dualist framework and is related to mental phenomena, its bodily relations have always been controversial. William James, avoiding the snares of dualism, suggested a so-called *neutral monism* (Gregory, 1987, p. 491). James advocates a neutral starting point that is neither physical nor mental, but *pure experience*. As he declared:

My thesis is that if we start with the supposition that there is only one primal stuff or material in the world, a stuff of which everything is composed, and if we call that stuff “pure experience”, then knowing can easily be explained as a particular sort of relation towards one another into which portions of pure experience may enter. The relation itself is a part of pure experience; one of its “terms” becomes the subject or bearer of the knowledge, the knower, the other becomes the object known. (James, 1987, p. 1142)

Against the background of *pure experience*, consciousness cannot be considered as an entity but rather as a relational function. James does not deny that *consciousness* “is supposed necessary to explain the fact that things not only are, but get reported, are known” (James, 1987, p. 1142); i.e., in a dualist framework, it relates to the mind, but he denies its entity-like status. As he wrote in 1904,

[f]or twenty years past I have mistrusted “consciousness” as an entity; for seven or eight years past I have suggested its non-existence to my students, and tried to give them its pragmatic equivalent in realities of experience. . . . I mean only to deny that the word [consciousness] stands for an *entity*, but to insist most emphatically that it does stand for a *function*. (James, 1987, p. 1141 f.; emphasis added)

James nicely recapitulates the way the notion of consciousness evolved on the basis of analogy:

The “I think” which Kant said must be able to accompany all my objects, is the “I breathe” which actually does accompany them. There are other internal facts besides breathing . . . and these increase the assets of “consciousness,” so far as the latter is subject to immediate perception; but breath, which was ever the original of “spirit” breath moving outwards, between the glottis and the nostrils, is, I am persuaded, the essence out of which philosophers have constructed the entity known to them as consciousness. *That entity is fictitious, while thoughts in the concrete are fully real. But thoughts in the concrete are made of the same stuff as things are.* (James, 1987, p. 1157 f.)

At this point, the advantage of neutral monism is clearly visible: thoughts and things are made of the same stuff, only their relations vary.

From this perspective, it becomes apparent that, whether on the basis of dualism or for the sake of scientific rigour, there is a strong inclination towards duplicating certain phenomena. The distinction between the physical and the mental, the perceptual and the conceptual, the subject and the object doubles the same thing unnoticed. “As ‘subjective’ we say that the experience represents; as ‘objective’ it is represented” (James, 1987, p. 1151), and in the case of recalling a room, for example, the room plays “two different rôles, being *Gedanke* and *Gedachtes*, the thought-of-an-object, and the object-thought-of, both in one” (James 1987, p. 1151). Abstraction from percepts implies duplicating. As James put it,

any single non-perceptual experience tends to get counted twice over, just as a perceptual experience does, figuring in one context as an object or field of objects, in another as a state of mind: and all this without the least internal self-diremption on its own part into consciousness and content. It is all consciousness in one taking; and, in the other, all content. (James, 1987, p. 1148)²

James’ suggestion that consciousness “connotes a kind of external relation” and the idea that, thanks to pure experience, we have access to things which earlier were considered as being different in kind, seems to be a good

candidate for building an alternative scenario for cognition. “The peculiarity of our experiences, that they not only are, but are known, which their ‘conscious’ quality is invoked to explain, is better explained by their relations—these relations themselves being experiences—to one another” (James, 1987, p. 1152).

Merleau-Ponty suggested a dynamic and holistic comprehension of consciousness, which has much in common with James’s ideas. Just as James suggests that *consciousness* “is supposed necessary to explain the fact that things not only are, but get reported, are known”, Merleau-Ponty believes that *consciousness* is basically a frame of reference within which things gain signification and the perceiving body, its physical and cultural environment, and the subject (self) inseparably belong together.³ In *The Structure of Behaviour*, he wrote that “what we call nature is already consciousness of nature, what we call life is already consciousness of life and what we call mental is still an object vis-à-vis consciousness” (Merleau-Ponty, 1963, p. 184). Merleau-Ponty calls our attention to the notion that consideration of consciousness within a representationalist framework, i.e., considering the “consciousness of the act”, implies the reduction of it “to representation of its goal on the one hand and possibly to that of the bodily mechanisms which assure its execution on the other” (Merleau-Ponty, 1963, p. 181). That is, it entails externality with regard to the relation of “means to end”, and accordingly the relation of the physical to the mental. Consciousness is not exclusively representational, rather it has more general forms which can be defined “by reference to an object”, and in this case goals and their execution are inseparable (Merleau-Ponty, 1963, p. 173 f.). As his famous football match example suggests,

the player becomes one with it [the field] and feels the direction of the “goal” . . . just as immediately as the vertical and the horizontal planes of his own body. It would not be sufficient to say that consciousness inhabits this milieu. At this moment consciousness is nothing other than the dialectic of milieu and action. (Merleau-Ponty, 1963, p. 168 f.)

Consciousness provides the ground for a meaningful unity where in cases of normal functioning, the ambient world, the acting subject and its body, and thus the mental and the physical, are inseparable. A human being, the so-called subject, “lives in a universe of experience, in a milieu which is neutral with regard to the substantial distinctions between the organism, thought and extension; he lives in a direct commerce with beings, things and his own body” (Merleau-Ponty, 1963, p. 189).

Merleau-Ponty took himself not to be eliminating the dualism of the soul

and the body, but rather transforming it into the distinction of “the lived and the known”. That is, it is “the problem of the relations of consciousness as flux of individual events, of concrete and resistant structures, and that of consciousness as tissue of ideal significations” (Merleau-Ponty, 1963, p. 215). But, *consciousness as tissue of ideal significations* can be manifested either in bodily activity or in linguistic form. Merleau-Ponty speaks about a double function of the body:

Through its “sensory fields” and its whole organization the body is, so to speak, predestined to model itself on the natural aspects of the world. But as an active body capable of gestures, of expression, and finally of language, it turns back on the world to signify it. (Merleau-Ponty, 1964, p. 7)

This has far-reaching consequences for cultural and scientific evolution. In *Phenomenology and the Sciences of Man*, he explains: “Consciousness is accessible only to intentional analysis and not to mere factual observation. The psychologist always tends to make consciousness into just such an object of observation” (Merleau-Ponty, 1964, p. 58). A similar idea had already emerged in 1942, when he described the object of science as being “defined by the mutual exteriority of parts and processes” (Merleau-Ponty, 1963, p. 9).

Merleau-Ponty illuminates the paradoxical situation we face when trying to keep in mind the holistic nature of an organism and at the same time attempt to investigate the relations it can enter. He showed that

to the extent that the scientific knowledge of the organism becomes more precise, it becomes impossible to give a coherent meaning to the alleged action of the world on the body and of the body on the soul. The body and the soul are significations and have meaning, then, only with regard to a consciousness. (Merleau-Ponty, 1963, p. 216)

And with consciousness the situation becomes even more complicated. Although consciousness can be considered as a foundation of significations, it suggests an unavoidable polymorphism because of its relational character. With regard to imagining, for example, Merleau-Ponty considers it as being “an operation of my whole consciousness. To perceive oneself as imagining is to set up *a certain kind of relation with the absent thing*” (Merleau-Ponty, 1964, p. 60; emphasis added). Since body and soul bears meaning only pertaining to consciousness, and “the human order of consciousness” is the “condition of possibility and . . . foundation” of “dialectical relations in which the effect of each partial action is determined by its signification for the whole” (Merleau-Ponty, 1963, p. 202), consciousness has a fundamental

and extensive role: “consciousness is the subject for every possible object” (Merleau-Ponty, 1964, p. 57).

Beyond the difficulty with the concept of consciousness, there is a built-in mechanism in both philosophical and scientific practice whereby

the realistic thesis of common sense disappears at the level of reflexive thought, which encounters only significations in front of it. . . . As philosophy, realism is an error because it transposes into dogmatic thesis an experience which it deforms or renders impossible by that very fact. But it is a motivated error; it rests on an authentic phenomenon which philosophy has the function of making explicit. (Merleau-Ponty, 1963, p. 216)

That is, catching hold of the function of the human order seems to be almost impossible because its holistic and dynamic nature plus the means of expression and investigation cannot fit: the latter separates the elements of the investigated phenomena and makes them external to each other, while descriptions are not able to reproduce the holistic and dynamic nature of the process.

3. Consciousness as Brain Events

In what follows, I will outline the notion of consciousness according to Global Workspace Theory (GWT), and then by reincarnating some of Merleau-Ponty’s key ideas I will focus on the radical versions of embodied and enacted cognition.

GWT, as B. J. Baars conceives it, “is a cognitive architecture with an explicit role for consciousness in humans. It suggests that conscious contents involve a fleeting integrative memory capacity in the brain, in which only one consistent content can be dominant at any given moment” (2010, p. 287). Consciousness seems to be crucial in the case of integrating and combining new information, which requires additional brain resources. In this process, episodic memory—a memory of conscious events as opposed to long-term memory—plays an important role. “A body of evidence now indicates that consciousness is the primary agent of such a global access function in humans and other mammals” (Baars, 2010, p. 287). Consciousness, therefore, has highly significant and diverse functions and can be considered as a fundamental biological adaptation.

Despite the functional importance of consciousness and a considerable body of scientific evidence, the study of consciousness is still controversial. Baars believes that these controversies are rooted in the metaphysical

mind–body dualism, which seems resistant to a resolution. Avoiding this obstacle, he suggests seven testable criteria along which scientific research can advance to gain more evidence of and knowledge about consciousness. Baars’ suggestion, that it is more promising to consider consciousness as being a variable instead of defining it, is reasonable even if at first sight it seems counterintuitive.⁴ I will not provide a detailed list of his seven criteria here, but will rather focus on some elements of his argument which relate to the problem of polymorphism and to the commitment to certain presuppositions. The promise is that if consciousness is conceived as a variable, this releases the scientist from the burden of the metaphysical mind–body dualism and helps avoid the smuggled premise of dualism. The very question “What is the relationship between mind and body?” suggests a mind–body dichotomy, and, accordingly, fixes the framework within which the argument can be formed.

Keeping in mind that consciousness is a theoretical construct, if we want to treat it as a variable we must be able to *contrast* it with unconsciousness. That is, instead of trying to answer questions such as “What is the relation between mind and brain?”⁵ we should find observable and measurable states as they relate to conscious and unconscious conditions. In the case of perceptual consciousness, subliminal perception (such as inattention blindness, binocular rivalry, etc.) is a good candidate for comparison. Similarly, wakefulness vs. sleep and focal vs. contextual consciousness are well studied pairs for comparison—just to mention a few examples. An additional criterion is the *operational index*, as Baars calls it, which refers to two necessary conditions: One, that consciousness is based on public evidence, even though it is a theoretical construct; in this respect there is no considerable difference between consciousness and memory, perception, and similar cognitive constructs. And secondly, the operational index refers to the problem of *reportability*.⁶ It is generally accepted that unconscious states do not lead to accurate reports, and it is almost universally accepted that reports of conscious experiences are not exclusively verbal (e.g., eye-movements and button-pressing can also serve this purpose). As Baars suggests, we do not have any reason to take reportability for granted, since we do not know why certain mental phenomena are without conscious feedback (such as motor functions and decision-making), and in the case of animals, “[i]n principle, it is difficult to make a distinction between AR [accurate report] and other behavioral indices of sensory categories” (Baars, 2005, p. 121). And although it now seems the conscious state and voluntary reporting can be related on the basis of brain activity, in more complicated cases (as compared with the experiment) this relation is, I believe, still puzzling.⁷

In any respect, it seems uncontroversial to note that “[c]onsciousness involves widespread, relatively fast, low-amplitude interactions in the thalamocortical core of the brain, driven by current tasks and conditions. Unconscious states are markedly different and much less responsive to sensory input or motor plans” (Baars, 2005, p. 122). That is, conscious states are clearly distinguishable from unconscious or low-conscious states.

Baars suggests that different conscious content is clearly distinguishable in the brain.

Consciousness presents an extraordinary range of contents—perception in the different senses, imagery, emotional feelings, concepts, inner speech, and action-related ideas. . . . [T]he content of a visual experience is very different from the taste of a lemon, or the sound of a bell. These differences may be related to the fact that, although a large proportion of the mammalian cortex is rather uniform in its histology (it is sometimes called isocortex), input to different cortical areas varies greatly. For example, visual input is very different in its statistical description from proprioceptive input, or olfactory input. (Baars et al., 2005, p. 124)

Conscious content in this case shows up thanks to brain imaging, and accordingly, statistical means gain a particular shade when compared with James’s caveat.

Baars also illuminates the difficulty in testing causal relations between brain states and subjective consciousness. Causal relations between the mind and brain seem to be inherently untestable, and the study of conscious experience is limited to the empirical methods of science. Because of this, thought experiments such as zombies and conscious machines are beyond the field of testability or even controlled comparison.

Baars suggests investigating how consciousness takes part in a theoretical, and at the same time empirical network. He listed twelve aspects, including limited capacity, seriality, internal consistency, sensory binding, fleetingness, etc.,⁸ which are separately examined. At the moment, taking into account all these aspects seems highly challenging.

As the criterion of discriminative validity suggests, we have to be able to differentiate between the conscious state and related constructs such as attention, working memory, sensory knowledge, and executing processes. Attention and working memory contain both conscious and unconscious elements; counterintuitively, execution processes are sometimes unconscious; and conscious perception is not reducible to sensory knowledge since we have conscious access to non-sensory phenomena such as emotions, mental images, etc.

Within the framework of GWT, conscious perception is presumed to enable access to widespread brain regions (as compared with unconscious perception) and working memory functions including executive control; conscious events are presumed to enable learning; conscious perceptual feedback probably enables voluntary control over motor functions; conscious contents can evoke selective attention and be reciprocally evoked by it; and consciousness enables access to the *self* (Baars, 2007, p. 241). As the list shows, consciousness has exceedingly extensive functions, however its broadcasting function in the brain eliminates, at least to some extent, the burden of polymorphism. Accurate reporting provides the basis of comparison between the investigated phenomenon and its equivalent mechanisms detectable in the brain. There has been considerable advancement regarding the relation between conscious experience and its report; and experiments are increasingly well-designed, i.e., the searched conscious act is known thanks to the detailed design of the experiment. Accordingly, its relation to brain processes is also considered unambiguous. But these precisely designed and measured conscious states are far from being as complex as the normal functioning that is performed even in the case of the simplest mundane activity. Maybe it is only a question of time.

4. The Sensorimotor Approach

The sensorimotor approach offers a comprehensive, or let us say holistic, attitude towards different mental phenomena such as conscious and non-conscious experience. Consciousness enters the scene against a radically different background: consciousness, it is suggested, emerges from a complex interaction between the environment and the actively engaged perceiving subject.

As we can see, the idea of embodied and enacted cognition had already explicitly emerged with Merleau-Ponty. His comprehension of consciousness suggests the inseparability of the body and its environment, the idea of restricting the role of mental representation, and the notion of perception as being an active bodily engagement.⁹ I believe these aspects of cognition have gained a great deal of credibility and have been revived and reformulated in recent decades. Subsequently, I will outline some branches of embodied and enacted cognition, particularly radical embodied cognitive science as Chemero explicated, radicalized enactivism as Hutto and Myin conceived it, and O'Regan's views on consciousness.

Radical embodied cognitive science suggests combining nonrepresentational theories in psychology and dynamical models in order to be able to “explain cognition as the unfolding of a brain–body–environment system, and not as mental gymnastics” (Chemero, 2009, p. 47). Like Merleau-Ponty, Chemero underscores that “the phenomenological world of experience is neither in the head nor in the external world—it is fundamentally relational.” (Chemero & Silberstein, 2012, p. ??). Within this relational framework, experience and consciousness are conceived as being relational and not limited to brain processes. “Experiences do not happen in brains. Even though it is perfectly obvious that *something* has to be happening in neurons every time an animal has an experience, for the radical embodied cognitive scientist, as for the enactivist, this something is neither identical to, nor necessary and sufficient for, the experience” (Chemero, 2009, p. 200). Similarly, as conscious experience is relational, “intentionality and consciousness are inseparable. That is, (1) perceiving something as being a particular way is inseparable from (2) experiencing it as being that way” (Chemero, 2009, p. 202). This works even in the case of infants: whilst they are exploring their environments they discover affordances and learn how to fit and therefore utilize them. It is beyond question that neuronal activity plays a part, but “we have a three-part, coupled, non-linear dynamical system in which the nervous system partly determines and is partly determined by the sensorimotor abilities which partly determine, and are partly determined by the affordances available to the animal” (Chemero & Silberstein, 2012, p. ??). This reciprocally interrelated connectedness excludes the possibility of separating each part. The nervous system, the sensorimotor system, and the environment play an active role and are in a reciprocal relation to each other. Accordingly, “using information to perceive affordances and guide behaviour in real time just is having conscious experience” for radical embodied cognitive science (Chemero, 2009, p. 205).

Hutto and Myin chose a different route of argumentation, but with a similar intention of avoiding mental representations and keeping action and perception integrated. By all accounts, their concluding idea, viz. that “there can be intentionally directed cognition and, even, perceptual experience without content” (Hutto & Myin, 2013, p. x) is provocative and may seem to be counterintuitive to some.¹⁰ Through an elaborate conceptual analysis, they give a list of advantages we can enjoy if we accept their basic suggestion. The authors seem to take up a line close to that of *Type B materialism*, which accepts an epistemic and explanatory gap but denies the ontological one regarding the Hard Problem of Consciousness, and suggests that the “phenomenal might just be the physical described differently—

under a different guise or mode of presentation” (Hutto & Myin, 2013, p. 170). But there is a considerable difference between *Radical Enactive (or Embodied) Cognition* (REC) and Type B materialism, namely that REC “cannot accept the existence of special phenomenal concepts”; rather they hold “that anything that might answer to the name ‘phenomenal concept’ will be a public concept” (Hutto & Myin, 2013, p. 173). They consider so-called phenomenal concepts to be parasitic ones, since these refer to certain activities as their background. Accordingly, they define phenomenality as it is related to active engagement in the environment. “Phenomenal character of experiences must, ultimately, be understood by appealing to interactions between experiences and aspects of their environment” (Hutto & Myin, 2013, p. 177).

In line with the above considerations but closer to the notion of consciousness, I would like to recapitulate some key ideas by Kevin O’Regan. In his 2011 book, he highlighted two aspects of consciousness: different levels of knowledge (such as awareness, self-awareness, and consciousness as it relates to attention), and the so-called *raw-feel*. As the term *sensorimotor approach* suggests, even “[f]eeling is something we do” (O’Regan, 2011, p. 68). Accordingly, when considering vision as experience, it is logically insoluble to relate neuronal activity to the *feel* of seeing. O’Regan attempts to give a framework within which the feel of seeing and that of memory and imagining are clearly distinguishable.

As to consciousness, O’Regan suggests some key distinctions with regard to the differentiation between access- and phenomenal consciousness.¹¹ Ned Block describes access-consciousness as a relation to something when we are “‘poised’ (i.e., ‘ready’ or ‘prepared’) to make use of that thing” (O’Regan, 2011, p. 90). O’Regan suggests a further distinction when he proposes the term *cognitive access*, since conscious access implicates an additional step. “Having conscious access involves not only cognitively accessing something in order to exercise a choice about what to do with respect to that thing but also being aware of the whole context within which you are doing that cognitive assessing”; that is, “[t]he agent must have cognitive access to the fact that it has cognitive access to that something” (O’Regan, 2011, p. 91). Conscious access makes it possible to manage a wider context for the agent compared with cognitive access. Conscious access enables the reference to the self, a socially defined self.

Instead of phenomenal consciousness, O’Regan suggests *raw feel*. Raw feel is based on public evidence since people think there are grounds upon which we can distinguish different feels. Accordingly, raw feel must be a feel which is bereft of “add-ons” such as mental associations, linguistic utter-

ances, habituated bodily reactions, and psychological stances.¹² Raw feel “is related to what philosophers call ‘qualia’, the basic quality or ‘what-it’s like’ of experience” (O’Regan, 2011, p. 96). I will not provide a detailed summary of the argument regarding why it is not possible and would not be satisfactory to search for raw feel in the field of neuronal activity, but I would like to emphasize the embedded and intertwining character of the embodied mind in a sensorimotor setting. “[F]eels should be conceived of as qualities of our mode of interaction with the world. Taking this view will provide a way of overcoming the four mysteries of feel” (O’Regan, 2011, p. 110). These include (i) raw feel feels like something, (ii) it has different qualities, (iii) there is a structure in the differences, and (iv) raw feel is ineffable. Regarding (i), interaction with the world as compared with thinking, remembering, and automatic functioning has four special characteristics which provide the feeling of presence or phenomenality, viz., richness, bodiliness, partial in-subordinateness, and grabbiness.¹³ When focusing on interaction with the world, different qualities (ii) emerge from the fact that feels are constituted “by different modes of interaction” (O’Regan, 2011, p. 113). Accordingly, structural differences (iii) are rooted in the difference of activities, i.e., the differences between the laws that applied. With regard to the last mystery (iv), “you don’t have complete cognitive access to what you do when you squish a sponge or drive a Porsche. . . . There always remain details to which you yourself don’t have access” (O’Regan, 2011, p. 115).

Raw feel, cognitive access, and conscious access can be ordered in a hierarchy where raw feel, as “the root of the feel” (O’Regan, 2011, p. 95) and as something which may be close to so-called ‘phenomenal consciousness’ or ‘qualia’, provides the “perceived quality of sensory experience” (O’Regan, 2011, p. 180). Not contesting the role of neuronal processes, raw feel is constituted not in the brain but occurs when we do something.

There is nothing more to feeling a touch than the fact that the brain has registered that the laws currently apply. And why do we feel the touch on our arm rather than in the brain? Because what we mean by feeling something in a particular place in our bodies is precisely that certain sensorimotor laws apply. The felt location is determined by which laws apply. (O’Regan, 2011, p. 158)

6. Conclusion

There is controversy regarding whether workspace theory and the sensorimotor approach can be considered as complementary theories as Degenaar and Keijzer suggest.

While the conscious/not conscious contrast does not figure within the subject's experience, we suggest that workspace theory adds to the picture by providing a subpersonal theory of the neuronal dynamics that form a precondition for experience. Workspace theory can provide a framework to understand the mechanisms by which processes become integrated to enable thought, speech and further action, thus helping to explain some of the preconditions on which a sensorimotor theory depends. (Degenaar & Keijzer, 2009, p. 16)

Both theories are capable of explaining and explicating certain basic questions. As the authors suggest, GWT provides an answer to the question "Why do we have conscious experience at all?", i.e., it bridges the *absolute* gap; while the sensorimotor approach bridges the *comparative* gap, i.e., it can address the problem of "Why do experiences have the specific qualities that they have?"

As we can see, both provide us with satisfying and convincing solutions to at least one of the above-formulated questions, and their practical utility is proven by their applicability. Although neither of the two theories denies the importance of neuronal activity and environmental stimuli, their successful combination, I believe, requires a common or at least a compatible ground. I feel it is uncertain whether externalism and internalism as regards the processes underlying consciousness can be fused.

As I suggested, terminological biases can result in theoretical controversies. As Sloman illuminated, the extensive use of polymorphic terms in everyday communication does not cause any difficulty because the context makes their meaning unambiguous. In the case of theoretical constructs, polymorphic concepts may imply a considerable burden. Over time, the meaning of the notion of consciousness underwent slight modifications whilst its polymorphism remained. Originally it was related to reflexive thought and self, later it was considered as a function, and recently philosophical interest turned to conscious experience. Not surprisingly, the avoidance of polymorphism seems to be possible only within a well-restricted framework where, in the case of GWT, consciousness can be defined in tangible terms. Similarly, in the case of radical embodied cognitive science within the framework of a dynamical interrelatedness of brain–body–niche, conscious experience is unambiguously defined. That is, the concept of consciousness has a clear-cut working definition, but any extension can threaten its intact and unambiguous comprehension.

Wilfrid Sellars, among others, considered theoretical constructs as linguistic affairs (Sellars, 1963, p. 160), and linguistic affairs can be (and sometimes definitely are) deceptive. Sellars' distinction between the scientific and the manifest image of man illuminated a peculiar situation, i.e., a vicious

circle when trying to create a casual relation between sensation and its neural equivalent. As he saw it, a dualism which presupposes the correlation between conscious sensation and neural processes “is an unsatisfactory solution, because *ex hypothesi* sensations are essential to the explanation of how we come to construct the ‘appearance’ which is the manifest world.” That is, “the explanation will be in terms of the constructs of neurophysiology, which . . . do not involve the ultimate homogeneity, the appearance of which in the manifest image is to be explained” (Sellars, 1963, p. 36). We may have the impression that we are again faced with the paradoxical situation that scientific and especially philosophical explanations imply an additional barrier when they try to relate different phenomena, i.e., phenomena of theoretical constructs and everyday experience. From this perspective, it doesn’t seem possible to integrate stimuli into conscious processes within the framework of GWT without the loss of unambiguity and without giving up homogeneity, or a certain kind of monism. Similarly, polymorphism seems to be rooted in dualism but not in the dualism of substances. Rather it is rooted in the dualism of perspectives or aspects.

Of course, it is a valid question to ask whether we are talking about the same phenomena when identifying consciousness with special brain activity versus when we consider it as being a general function of living beings as they relate to their environment relying on their evolving bodily skills. From a methodological perspective, it appears promising to take a homogeneous framework within which consciousness is defined with regard to its theoretical setting but its validity seems to be restricted. In such a case, the realm of possible questions is relatively restricted and needs to face the difficulty of reconciling different theoretical settings. Defining a theoretical construct within the framework of monism, where pure experience, dynamic relations, or brain functions provide the scene is a promising enterprise, but reaching beyond that stage leads to unbridgeable gaps. It may be that, as with physics, we need to accept the application of different theories on different scales.

N O T E S

¹ This idea was first examined by Leibniz, but by the 19th century consciousness and thought were considered roughly as being the same.

² Cf. the core idea of radical enacted/embodied cognition by Hutto and Myin (2013).

³ Cf. Merleau-Ponty’s reconstruction of the evolution of Husserlian phenomenology where he notes that regarding consciousness as “the theater of all being and of the transcendental positing of any object” is too Platonic (Merleau-Ponty, 1964, p. 55).

⁴ Taking into account Sloman’s concern regarding polymorphic concepts, in terms of operation we may doubt whether it is possible “to produce a machine model of consciousness”. It is “analogous to trying to produce a machine model of efficiency, or tallness, or danger, whose labels also refer to different things in different contexts” (Sloman, 2010, p. 30).

⁵ It is not by chance that the answers to this question are controversial: mind and brain are “insufficiently constrained”. (Baars, n.d., p. 5) Similarly, the causal relation between the body and the mind is hardly, if at all “testable experimentally because there are no clear comparison conditions.” (Baars, n.d., p. 25)

⁶ Conscious reports are considered to be metacognitive because they refer to conscious content and “their perceived sources” (Baars, n.d., p. 14) external to the perceiving body. Thus the problem of the body–mind divide re-enters the scene. Mental processing of the perceived refers to its material source. That is, despite the effort to avoid dualism, terminology itself suggests a dualist and representationalist account.

⁷ As scientific research inexorably advances, Baars and his colleagues have provided evidence in a more recent study with regard to accurate reporting. “For the first time in history we are able to look at the cortex in real time and with high spatial resolution as the patient hears a spoken word and then reports it. . . . A d[ynamic]GW interpretation would suggest a broadcast from auditory cortex in the first condition (a), spreading to Broca’s area and setting up adaptive resonance lasting for several seconds (about the duration of working memory, 10–30s). When the patient repeats the word in part (b) the relevant speech production regions are already primed by the stimulus broadcast” (Baars et al., 2013, p. 18).

⁸ For the complete list see Baars (n.d., pp. 25–27).

⁹ See especially Merleau-Ponty (2008, p. 235 ff.) and (1963, p. 190).

¹⁰ I have in mind the tradition of phenomenology. As we can see above in the case of GWT, conscious content is considered as distinguishable and measurable.



¹¹ Phenomenal consciousness refers to the experience itself. O’Regan suggests *raw feel* as being able to describe the phenomenality of experience. Cf. Sloman’s criticism, which suggests phenomenal consciousness is semantically disengaged or empty, i.e., “instances of P-C have no effects” per definition (Sloman, 2010, p. 19).

¹² The example of seeing red can be easily linked to the listed “add-ons”. For details see O’Regan (2011, p. 95).

¹³ For details see O’Regan (2011, p. 30 ff., pp. 110–113).

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