

# Psychocerebrophenomenology: A Manifesto

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## Abstract

This manifesto introduces “psychocerebrophenomenology” as a novel, integrative research programme uniting phenomenological psychology, neurophenomenology, and empirical cognitive science. Building on the Husserlian method of eidetic analysis, the approach seeks to bridge first-person descriptions of experience, third-person neuroscientific data, and behavioural measures without collapsing one into the other. The framework is articulated through the distinction between ontological and explanatory levels, drawing on David Marr’s levels of analysis to clarify disciplinary interfaces and the so-called “explanatory gap.” The proposal is situated within historical and conceptual debates, including predictive coding theories and Dan Zahavi’s critique of their neo-Kantian tendencies. Future directions include refining protocols for aligning phenomenological reports with psychophysical and neuroimaging findings, developing computational models constrained by experiential structures, and interrogating the conceptual presuppositions of both philosophical and neuroscientific accounts. Psychocerebrophenomenology thus aims to reconceive the relation between mind, brain, and lived experiences, positioning philosophy and science as equal partners in the study of consciousness.

## Keywords

psychocerebrophenomenology; neurophenomenology; predictive coding; Marr’s levels; eidetic variation; consciousness

## 1 The Many Faces of Phenomenology

A famous phenomenologist Herbert Spiegelberg once wrote, “[e]ven if there were as many phenomenologies as phenomenologists, there should be at least a common core in all of them to justify the use of the common label” (1960/1982, p. 677). Following this line, in this introductory section we will explain three things: 1) what is the common label “phenomenology?” 2) what are the usual subdivisions of phenomenology? And 3) what is “psychocerebrophenomenology” as a new research programme?

Phenomenology, or more fully, “continental phenomenology,” is a philosophical tradition rooted in the early 20<sup>th</sup> century work of Edmund Husserl (various references below), and slightly earlier in the late 19<sup>th</sup> century work of Franz Brentano (1874/1973), which developed primarily within the European—often called “continental”—context. At its heart lies the ambition to *describe*, rather than explain, the *structures of lived experience* as they present themselves to

consciousness. It begins from the first-person perspective and seeks to uncover the *essential features of phenomena*, suspending (through the *epoché*) assumptions about the external world in order to focus on the way things appear to us. “*Epoché*” is from the Greek ἐποχή, meaning “suspension” or “bracketing.” It refers to the methodological act of setting aside, or “bracketing out,” our natural assumptions about the existence and nature of the external world.

While Husserl initially conceived phenomenology as a *rigorous science* of consciousness (1913/1983), his successors—figures such as Martin Heidegger, Maurice Merleau-Ponty, Jean-Paul Sartre, and Emmanuel Levinas—expanded and transformed the method. Heidegger (1927/1983) shifted the focus from pure consciousness to the *existential structures of Dasein* (roughly, human being-in-the-world). Merleau-Ponty (1945/2012) foregrounded *embodiment*, showing that perception is always mediated by our bodily engagement with the world. Sartre (1943/2003) developed phenomenology in an *existentialist* direction,

concerned with freedom, responsibility, and interpersonal relations. Levinas (1961/1969), in turn, emphasised the primacy of ethics and the encounter with the *Other*.

This continental tradition is marked by its resistance to reducing experience to natural science, its attentiveness to historical and cultural horizons, and its willingness to integrate insights from literature, art, and political thought. It differs from the more *analytic* approaches to mind and language by treating subjectivity as irreducibly *situated*, *interpretative*, and *embodied*. All the above, to be sure, are simplifications that need to be treated with caution.

Phenomenology, as a philosophical and methodological tradition, has diversified into a number of distinct yet often overlapping subfields, each emphasising *particular domains* of experience or lines of inquiry. What follows is a non-exhaustive survey of some of its more recognisable subdivisions. “Religious phenomenology” explores the structures of religious experience, seeking to describe the modes in which the sacred, the divine, or the transcendent are given in consciousness (Marcel, 1949; Marion, 2002). “Historical phenomenology” applies phenomenological methods to the study of historical life-worlds, examining how meaning, temporality, and intersubjectivity are constituted within specific historical contexts (Koselleck, 2004). “Clinical phenomenology,” often linked to psychiatry and psychology, focusses on the lived experiences of mental health and illness, offering fine-grained descriptions of conditions such as depression, schizophrenia, or trauma (Jaspers, 1913/1997; Ratcliffe, 2015). “Body phenomenology” investigates the role of embodiment in perception, action, and identity, drawing on thinkers such as Merleau-Ponty to highlight the body’s centrality in mediating our engagement with the world (Merleau-Ponty, 1945/2012). “Phenomenological psychology” adapts the method to empirical psychological research, emphasising qualitative, first-person accounts of experience (Giorgi, 2009). “Phenomenological ethics” examines the ethical significance of lived experience, including the primacy of the Other in Levinas’s work (Levinas, 1961/1969). “Analytical phenomenology,” though sometimes contested as a label, refers to attempts to integrate phenomenological insights with the conceptual clarity and argumentative rigour characteristic of analytic philosophy, particularly in the

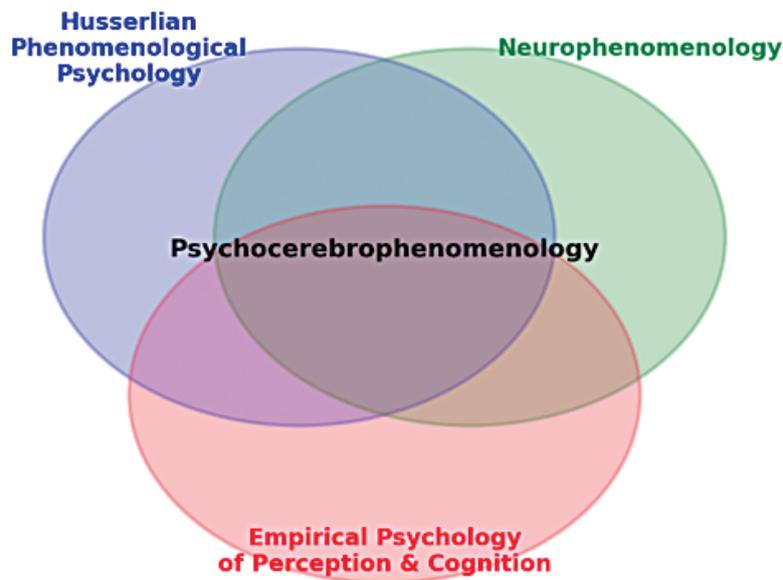
philosophy of mind and perception (Smith & Thomasson, 2005). These as well as other subfields illustrate phenomenology’s versatility: its methodological core can be adapted to address religious, historical, clinical, ethical, and analytic concerns, while remaining grounded in the disciplined description of lived experience.

Following in the trajectory of this tradition, I here propose the notion of “psychocerebrophenomenology”—a term intended to signal a deliberate integration of three complementary strands of research. First, it draws on *Husserlian phenomenological psychology*, understood as the systematic, eidetic investigation of lived experiences within the “natural attitude,” where phenomena are described in their essential structures without reducing them to neural or physical explanations (Husserl, 1925/1977). Second, it incorporates the insights of *neurophenomenology*, a programme most prominently associated with Francisco Varela, Evan Thompson, and colleagues, which seeks a mutually informing dialogue between disciplined first-person descriptions and third-person neuroscientific data (Varela, 1996; Lutz & Thompson, 2003; Varela, Thompson, and Rosch, 2016). Third, it engages with the *empirical psychology* of perception and cognition, including experimental and psychophysical approaches, in order to situate phenomenological findings within established empirical research traditions. The ambition of psychocerebrophenomenology is not merely additive but *integrative*: to develop a framework in which *first-person* phenomenological accounts, the *neural correlates* of those experiences, and *behavioural and cognitive* performance measures can be examined in concert. In doing so, it aims to address the so-called “explanatory gap” between subjective and objective accounts of mind, while resisting the temptation to collapse one into the other. Such an approach promises a richer, multi-layered understanding of consciousness, perception, and cognition—one that is faithful to the *lived texture* of experience while remaining open to empirical constraints and neuroscientific insights. A basic structure of such an integration is shown with this following diagram.

From the next section, I will go into some more details of this newly conceived research programme.

## 2 Ontological vs. Explanatory Levels

Here is another way to understand this new proposal.



*Integration of first-person phenomenology, neural data, and behavioural/cognitive measures to address the explanatory gap between subjective and objective accounts of mind.*

“psychocerebrophenomenology” should be parsed as “psycho-cerebro-phenomenology”: it reflects the threefold structure we have seen above. One of the components, neurophenomenology, is itself interdisciplinary, combining neuroscience and phenomenological psychology. The reason for emphasising the component of psychology, though, is to counter the tendency of over-emphasising the physiology of the brain in the late 20<sup>th</sup> century, which can sometimes be found in projects of *naturalising phenomenology*. Our current proposal means to bring back the *psychological* level. When it comes to levels, though, there are at least two interpretations in this context, which are related in subtle ways. This section will be a detour into levels, and the next section will bring back phenomenology.

Talk about the “levels” is tricky. Sometimes people say different research subjects talk about different *aspects* of the world, but this seems metaphorical and far from straightforward. To begin with some examples, people acknowledge that there are the physical, the chemical, the biological, and the psychological levels, to say the least. Often, we go on saying that physics is at the bottom of the entire structure as the foundation. Above that, there are special sciences, including not only chemistry, biology, and psychology, but also linguistics, sociology, and economics, etc. In what follows, we will cover both the *ontological* and the *explanatory* levels, as they are equally pertinent to

psychocerebrophenomenology.

Corresponding to the two interpretations, there are two problems in the relevant literatures:

### 1. The Placement Problem

Given or assuming one worldview, such as physicalism, consider how things, properties, and phenomena, etc., can be *placed* within this picture. For example, can the physicalist worldview accommodate colours, morality, and aesthetic properties? (Price, 2010).

### 2. The Interface Problem

Even if we have solved the Placement Problem, we can still ask: why do physical, chemical, biological, and psychological explanations, etc., look *so different*? Why do some of them involve purposes, some do not, for example? (Bermúdez, 2006)

Taking the familiar mind-body problem for illustration. Scientists often use the ambiguous “mind/brain” to avoid controversies. However, to get clear about what that slash means is no easy task. The once popular mind-brain identity theory regards the mind as identical to the brain. Ontologically, there is *no level* here. From the western intellectual history, we can learn that such a theory has faced enormous problems. Often, just to be cautious, scientists and philosophers alike talk only about *correlations* between the mind

and the brain, but this does not really solve the problem: to say something correlates with itself is uninformative, so to say the mind correlates with the brain implies that they are *distinct*, which leads to dualism that is unacceptable by most researchers nowadays. The problem exacerbates when we say the brain *causes* the mind, as things do not cause themselves (cf. Searle, 1992). In neuroscience papers, you find statements such as “[t]he self is a *distinct entity* from the rest of the world” (Wen, et al., 2020. P. 1; emphasis added), which unwittingly implies dualism. In metaphysics, there are other potential answers, such as supervenience, realisation, and constitution. They are all important potential answers to the Placement Problem, but satisfactory consensus is yet to come. Sometimes this can lead to *eliminativism*, the extreme view that the mind does not exist. When this applies to other realms, some eliminativists have argued that tables, chairs, mountains, rivers also do not exist. What really exist are basic particles identified by theoretical, fundamental physics.

When it comes to physics, a related important issue concerns whether physical laws are *strict*, i.e., necessarily without exceptions. A common view is that while laws in fundamental physics are strict, laws in special sciences (if any) are non-strict. But if so, how can they be about one and the same being or system? Doesn’t this imply that there *are* ontological levels? Moreover, even if multiple levels involve strict laws, does this mean that the laws *bridging* the levels are also strict (Davidson, 1970)? Some go to the other extreme and argue that even in fundamental physics there is no strict law:

The discovery that a fundamental law of physics cannot be precisely defined challenges the ability of mathematics as we know it to describe reality completely. (Chen, 2020)

More technically, nomic vagueness is commonplace in special sciences, but can also be found in fundamental physics too. Very roughly, nomic vagueness refers to vagueness or indeterminacy that arises *not* from our language or measurement limits, but from the laws of nature *themselves*.

So much for the ontological levels. What about the *explanatory* ones? Coming back to the Interface Problem, with the mind-body problem as our prime

example, we may ask: even assuming the mind-body identity theory, we should still press on and query why physical, chemical, biological, and psychological explanations look so different. Sometimes *reduction* is proposed as an answer, but controversies continue when we consider complicated issues concerning bridge laws, compositional principles, etc. More intuitively, we may use the famous “explanatory gap” to illustrate the problem (Levine, 1983). Even if in the future the perfect neuroscience can tell us (say) a neural correlate A corresponds to red experiences, and another neural correlate B corresponds to green experiences, etc., it seems that we can still legitimately ask: why not the opposite? Why is this *specific* set of correlations in particular? Now, one might object that consciousness is a very special case. To this, we may respond that there are other apt examples too. Consider “long-term potentiation” (LTP), a phenomenon in which simultaneous stimulation of two neurons produces a lasting enhancement in signal transmission between them. It is considered the main molecular mechanism underlying learning and long-term memory. However, this seems worlds apart from the concept of long-term memory and its explanations as discussed in psychology. The *psychological* phenomenon and its *chemical* basis just seem very different.

Now, very famously, vision scientist David Marr (1982) has proposed the following three levels of analysis:

1. Computational level – What is the goal of the computation, and why is it necessary? It defines the problem the system solves and the logic behind it.
2. Algorithmic level – How is this goal achieved in terms of representation and process? It specifies the steps, procedures, and formats for manipulating information.
3. Implementational level – How is this physically realised in hardware or biology? It describes the physical substrate and mechanisms that carry out the algorithms.

For our purposes, we can think of cognitive psychology, developmental psychology, and linguistics, etc., as corresponding to the computational level. Then, mathematical neuroscience, artificial intelligence, and deep learning, etc., as corresponding to the arithmetic

level. Neuroscience and molecular biology, etc., correspond to the implementational level. Finally, cognitive neuroscience, neurolinguistics, etc., correspond to computational plus implementational levels. These can be very complicated, but the framework can help us conceptualise the current interdisciplinary structure.

Let's take stock. Psychocerebrophenomenology combines several disciplines; to understand the convoluted relations between them, we introduced both the ontological and the explanatory levels. We did not, however, provide a definite answer as to how those levels can satisfactorily explicate the relations of the disciplines. We did make use of several concrete examples to illustrate how the framework might work, as the end of the previous paragraph showed.

Now it is time to come back to phenomenology.

### 3 Phenomenology Strikes Back

With the above framework, we see that there are two sets of issues, one horizontal and one vertical. The former concerns issues *within* a level, while the latter concerns issues *between* levels. Since our main theme is phenomenology, it is natural if not necessary to take *consciousness* as our central example:

- A. Vertical Questions: How do consciousness and other related psychological phenomena relate to the brain and other physiological structures?
- B. Horizontal Questions: What are the key features of consciousness and other related psychological phenomena? Do they have any necessary, essential properties?

How does phenomenology contribute to these questions, if at all? Can phenomenology be accommodated by Marr's three levels of analysis?

At this point, it is instructive to compare two paradigms of phenomenological psychology. The Husserlian version primarily concerns the clarifications of psychological concepts, and the investigations of their foundations. The Merleau-Pontyan version, by contrast, develops the clinical approach, and therefore has more applications to the real-world cases. Since our project here is more theoretical than practical, we will follow the Husserlian line to begin with. The first key point is that Husserl's line seems to stay silent about the *vertical* questions. In fact, the entire phenomeno-

logical tradition does not speak too much of the mind-body problem, understood as a vertical issue. Rather, they focus on the *horizontal* questions, specifically about *eidos*, or eidetic characters of consciousness. Such characters refer to the essential, *invariant* structures that define conscious experience, regardless of its particular contents. "Eidetic" comes from the Greek *eidos*, meaning "form" or "essence." The aim of eidetic reduction is to move beyond the *contingencies* of individual experiences and grasp the *universal* features without which consciousness would not be what it is. Here are two initial observations: firstly, this seems to go beyond Marr's level. It is at a level that is even *above* the computational one. Secondly, there seems to be a tension within Husserlian phenomenology, one that between *pure descriptions* and *characterising essence*. This is so due to the common conception that pure descriptions cannot go beyond contingent properties. In later developments, even Husserlians tend to admit the limitations of pure descriptions, holding that both Brentano and Husserl can accept *argumentative structures*, which have more to say about essence and eidetic features.

In *Psychological and Transcendental Phenomenology and the Confrontation with Heidegger* (1927-31/1997), Husserl writes that "...an experience and theoretical inquiry which consistently and continuously moves *from mental to mental* and thus *never deals with the physical*" (p. 215; emphasis added). Here, we clearly see that he sees phenomenology as focussing on horizontal issues only. Actually, in contemporary, Anglo-Saxon tradition of philosophy, which is non-phenomenological, philosophers also sometimes discuss horizontal questions only, such as the relation between consciousness and intentionality (i.e., aboutness), the classifications of mental phenomena including attention and memory, etc. To be sure, these questions tend to have indirect connections to vertical questions, as in an age of neuroscience we care much about the *neural substrates* about those psychological phenomena. Still, it should be acknowledged that horizontal and vertical questions are conceptually distinct. Continuing the same line of thought, Husserl says more in the same work:

Phenomenological psychology in this manner undoubtedly must be established as an "eidetic phenomenology;" it is then exclusively directed

toward the *invariant essential* forms. For instance, the phenomenology of perception of bodies will not be [simply] a report on the factually occurring perceptions or those to be expected; rather it will be the presentation of *invariant structural* systems without which perception of a body and a synthetically concordant multiplicity of perceptions of one and the same body as such would be unthinkable. (Husserl, 1927-31/1997, p.165; emphasis added).

Relatedly, Husserl's "eidetic intuition" (also called *Wesensschau* in German) is the act of directly grasping the essence of something—its necessary, defining features—rather than just noticing its accidental or changeable aspects. In this method, we start from a concrete example and use *imaginative variation*: we mentally alter aspects of the example to see what can change without it ceasing to be the kind of thing it is. The features that *cannot be removed* without destroying its identity are its essential features. Eidetic intuition is the clear "seeing" of those features in thought. For Husserl, this is not a mystical vision but a disciplined, reflective activity, central to phenomenology's aim of describing the *universal* structures of experiences. This echoes analytic philosophy's "conceivability" approach, according to which certain kind of conceivability is a reliable guide to metaphysical possibility (Yablo, 1993; Chalmers, 2002). In a different work, Husserl says even more:

...by an act of volition we produce *free variants*, each of which, just like the total process of variation itself, occurs in the subjective mode of the "arbitrary." It then becomes evident that a unity runs through this multiplicity of successive figures, that in such free variations of an original image, e.g., of a thing, an *invariant* is necessarily retained as the necessary general form, without which an object such as this thing, as an example of its kind, would not be thinkable at all. While what differentiates the variants remains indifferent to us, this form stands out in the practice of voluntary variation, and as an absolutely identical content, an *invariable* what, according to which all the variants coincide: a *general essence*. (Husserl, 1939/1973, p.340; emphasis added)

Since this is not an occasion on Husserl scholarship, we shall not go into more details here. Instead, we will end this section by coming back to our main line, psychocerebrophenomenology. As a research programme, it can accommodate many ideas from multiple researchers, and some can even be incompatible with one another. As a starter, I will put two claims on the table:

Weak: Psychological explanations (especially those involving consciousness) are *indispensable*. Without them, the world becomes unintelligible.

Strong: We may infer the *ontological reality* of the psychological level with consciousness from the *epistemic significance* of such a level.

Obviously, the latter view is much stronger, and therefore more difficult to be defended. And even if it can be established, we need to answer the ensuing vertical question, namely: how do those conscious episodes relate to their physiological bases? Are those episodes *grounded in* the corresponding physiological structures, for example?

This completes our initial setup for psychocerebrophenomenology. Further investigations can take up this starting point and develop it into many subprojects. In the next, final section, we will look into some ramifications into empirical studies and the history of philosophy.

#### 4 Ramifications: Predictive Coding Meets Kantian Transcendental Philosophy

Predictive coding, sometimes called predictive processing, is a leading framework in cognitive science and neuroscience that treats the brain not as a *passive* receiver of sensory data, but as an *active* prediction machine. On this view, perception is not simply a matter of collecting information from the outside world; instead, the brain is constantly generating its own *best guesses* about what is out there, and then using incoming sensory input to correct these guesses when necessary. This can be applied to mental episodes other than perception (Friston, 2010; Clark, 2013; Hohwy, 2013). At the heart of the theory is the idea of a "prediction-error" loop. The brain maintains a model of the world—built from past experience and learned regu-

larities—and uses this model to *predict* the sensory signals it expects to receive. When actual sensory input matches these predictions, the brain can largely ignore the data, saving time and energy. When there is a *mismatch*—a prediction error—the brain updates its internal model to *reduce future errors*.

A prominent contemporary phenomenologist, Dan Zahavi, argues that predictive coding, especially in its more ambitious philosophical formulations, risks sliding into a kind of *neo-Kantianism*—and, for Zahavi, this is problematic because it distorts the relation between mind and world.

Neo-Kantianism, in this context, refers to the idea—rooted in Kant’s original transcendental philosophy—that the mind never has direct, *unmediated* access to the world “as it is.” Instead, it can only encounter the world through the *organising forms*, categories, or models supplied by the mind itself. Many strong versions of predictive coding appear to reinforce this stance. On the “brain as prediction machine” picture, perception is not a straightforward causal registration of worldly features; it is the brain’s best *internal hypothesis* about the hidden causes of its sensory input. What we *consciously experience*, then, is not the world in itself, but the content of the *brain’s generative model*.

For Zahavi, this way of framing things risks overstating the mediating role of internal models to the point of *cutting us off*, in principle, from direct contact with the world. It becomes unclear how our perceptual states could be about real objects and events, rather than merely about the brain’s own representational constructs. In phenomenological terms, this undermines the central claim that perception is an intentional relation in which the subject is *directly acquainted* with worldly entities. The worry is not just theoretical; if the model is taken too literally, it could lead to a self-enclosed, constructivist view of the mind—one that turns the world into a mere “inference” rather than the very thing we are experiencing.

Zahavi’s critique is grounded in his broader phenomenological commitments, where perception is understood as an *openness to the world*, not as a veil of hypotheses between us and reality (Zahavi, 2018; also see McDowell, 1996). For him, a plausible theory of perception must accommodate the immediacy and world-disclosing character of perceptual experience, something he thinks strong predictive processing mod-

els jeopardise. While predictive coding could, in principle, be reformulated to avoid this *representational isolation*—by adopting a more *enactive* or *direct* realist interpretation (Clark, 2013)—many of its popular articulations, he argues, still lean toward a neo-Kantian, and therefore problematic, stance (Hohwy, 2013; Seth, 2021).

Now, although powerful, Zahavi’s objections are not unanswerable. Recall Marr’s levels of analysis introduced above. Also recall our point that phenomenology occupies a level that is *above* Marr’s three levels. Neo-Kantianism, understood in this context, is making use of *transcendental arguments* and deriving conclusions concerning the computational and arithmetical levels. By contrast, phenomenology concerns only the horizontal issues *within* a level. Therefore, this phenomenological *horizontal* project would not be incompatible with the neo-Kantian *vertical* project.

Let’s take stock and conclude. The future of psychocerebrophenomenology lies in its capacity to *move beyond the parallel play* of its constituent disciplines and toward genuine methodological integration. In the short term, this entails refining protocols for the disciplined collection of *first-person* reports and their rigorous alignment with both *behavioural* indices and *neural* measures. In the longer term, the challenge will be to develop theoretical architectures capable of explaining how *phenomenological invariants*, *psychological functions*, and *neurophysiological mechanisms* co-constitute one another in the living subject. Such architectures must remain sensitive to the irreducibility of the experiential domain while also honouring the constraints imposed by empirical science.

This integrative ambition opens several concrete research pathways. One is the systematic application of *eidetic* variation to *experimental* paradigms, thereby generating hypotheses about experiential structures that can be tested against both psychophysical and neuroimaging data (cf. Husserl, 1925/1977; Varela, 1996). Another is the development of computational models that do not merely simulate *neural dynamics*, but are constrained by—and in turn constrain—the *phenomenological characterisations* of the relevant mental episodes (Lutz & Thompson, 2003; Friston, 2010). A third is the *historical* and *conceptual* excavation of the assumptions implicit in both phenomenological and neuroscientific frameworks, clarifying where integration is conceptually possible and where

deep divergences remain (McDowell, 1996; Zahavi, 2018).

If successful, psychocerebrophenomenology could yield *more than the sum of its parts*. It could demonstrate that phenomenology is not a relic of *pre-scientific* philosophy, but a *living method* capable of informing—and being informed by—the *most advanced empirical* inquiries into the mind. By doing so, it would offer a model for interdisciplinary research in which first-person experience is neither reduced to nor isolated from the brain and behaviours, but understood as an *essential* dimension of our cognitive being. The promise, then, is not only to close the explanatory gap, but to reconceive it as a productive space for discovery—one where philosophy and science can meet as *equal* partners in the study of consciousness.

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