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# The Flame That Illuminates Itself: A Phenomenological Analysis of Human Phenomenology

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In a recent set of articles (Klein et al., 2023; Klein & Loftus, 2024), my colleagues and I used the logic of adaptationism—the application of evolutionary principles to study the functional design of naturally selected systems (e.g., Klein et al., 2002)—to help make sense of the role natural selection played in the evolution of consciousness. To avoid well-known, seemingly intractable problems that accompany efforts to explain “*how* consciousness is possible in a world that consists in physical objects and their relations” (the so-called “hard problem of consciousness”), we limited investigation to the question of “*why* natural selection favored consciousness?” In the present article, I try to make amends for this evasion by addressing some of the conceptual challenges posed by the hard problem. Drawing on insights from Klein et al.’s (2023) evolutionary excursion into the *why* of consciousness, I identify a potential alteration in the referential identity of “subject” and “object” when they are taken as properties of a mental state, and discuss how these changes might offer insight into the *how* question of consciousness.

**Keywords:** phenomenology of consciousness, hard problem, perceptual projection, subject/object, agency

What we observe is not nature itself but nature exposed to our method of questioning

—Heisenberg (1999, p. 58).


The theoretical challenge of consciousness<sup>1,2</sup> is called the “hard problem”—that is, how is experiential reality possible, given that the dictates of modern science demand that everything from molecules to minds is wholly physical (for reviews, see Chalmers, 1996; Crane, 2001; Crane & Mellor, 1990; Goff, 2017; Kammerer, 2019, 2022; Levine, 2001; Loar, 1990; McGinn, 2004; Seager, 2016; Strawson, 2009)? Some argue that the hard problem is, and will remain, intractable due to its incommensurability with the requirements of scientific method and explanation (e.g., Klein, 2020;

Levine, 2003; Wright, 2007). Others attribute its intransigence to shortcomings of human mentation (e.g., Chomsky, 2016; McGinn, 1991; Plonitsky, 2010). Still others question whether the hard problem exists, arguing either (a) the solution already is at hand (e.g., Graziano, 2019, 2022;

<sup>1</sup> Consciousness, in my use of the term, is the capacity to experience life (Klein, 2020; Klein et al., 2023; Klein & Loftus, 2024). More formally, an organism is conscious if and only if there is “something it is like” for “organism X to be in mental state Y” (e.g., Balog, 2019; Chalmers, 1996; Hacker, 2002; Nagel, 1974). As Hacker (2002) observed, “the subjective or qualitative feel of a consciousness experience ... is characterized in terms of there being *something it is like* for an organism to have the experience” (p. 160; emphasis in original). This usage is what most philosophers have in mind when discussing phenomenal consciousness (e.g., Block, 1995; Chalmers, 1996; Klein, 2015; Levine, 2003). Phenomenal consciousness is a mental state characterized by the manner in which it presents itself subjectively—that is, the way it feels to its possessor (e.g., Block, 1995; Chalmers, 1996; Hacker, 2002; Kammerer, 2022; Nagel, 1974). Consciousness, as I use the term in this article, consists in first-person subjectivity (i.e., phenomenal consciousness).

<sup>2</sup> In this article, I use the words sentence, consciousness, subjectivity, phenomenal, and experience interchangeably (a similar synonymy is found in Chalmers, 2018).

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Kastrup, 2019; Tsuchiya, 2017) or (b) the problem is a misguided attempt to give substance to an ill-formed question (e.g., Carruthers, 2000; Dennett, 1991; Jackson, 2003; Weisberg, 2023).<sup>3</sup>

Let me state at the outset that I have no idea *how* subjective experience is possible (nor, best I can tell, does anyone else; e.g., Klein, 2012, 2020). Accordingly, I chose to limit our initial investigations of consciousness to the question of *why* natural selection favored sentience. In my view, this line of enquiry presents a far less formidable challenge than does the attempt to explain *how* nonsentient matter evolved the capacity to partake in life from a first-person perspective (for discussion, see Klein et al., 2023).

Unfortunately, by restricting investigative scope to the *why* of sentience, I left unaddressed what is among the most significant, yet enigmatic, questions about human existence—“*how* does subjective experience arise from physical objects and their interactions” (e.g., Balog, 2019; Chalmers, 1996; Crane, 2001; Dorsey, 2015; Goff, 2017; James, 1890; Kammerer, 2019; Kant, 1998; Levine, 2001; McGinn, 1991, 2004; Strawson, 2009; Weisberg, 2023)? In the present article, I attempt to redress this epistemic evasion by directly confronting the hard problem of consciousness.

### Klein and Colleagues' Work on the Evolutionary Benefits of Consciousness

Since this article draws on insights from our evolutionary explorations of the *why* question of consciousness (Klein et al., 2023; Klein & Loftus, 2024), familiarity with that work is important to understanding what is presented herein. In the next section, I summarize the insights gleaned from our analysis of the organism's evolutionary transition from a nonconscious respondent to a conscious agent.

To fully appreciate a summary, it should be considered alongside the arguments that served as its formative background. However, a summation unfettered by the evidential and analytic considerations martialled in its support has the advantage of accentuating key points without risk of their being swallowed by that discursive background. In what follows, I adopt the latter approach. Those interested in evidence and argument are referred to Klein et al. (2023).

### Summary of the Main Findings

During the Paleozoic Era (of which the Paleozoic was the first geological period), most life-forms were simple and unicellular. It was not until the Paleozoic explosion (henceforth CE)—beginning around 545 million years ago—that complex, multicellular organisms within the subphylum Vertebrata—including mammals, birds, reptiles, and fish—first appeared.

For early members of the vertebrate lineage, an organism's behavior was not an intentional effort to act on one's surroundings. Rather, it was movement in response to stimulation of its sensory organs. For such creatures—often classified as “respondents”—behavior was caused, not chosen. Typically, the behavior of a respondent is a response to the nonsentient detection of environmental contingencies. Once commenced, the behavior continues to completion along a predetermined path, unaccompanied by awareness of having been issued from the respondent or directed toward objects existing beyond the boundaries of the respondent's body.

Thus, for organisms inhabiting the early stages of the Paleozoic Era, behavior originated within, and operated on, neurally housed representations.<sup>4</sup> Environmental stimuli were nothing over and above brain states enabled by neural systems designed to gather information (e.g., electromagnetic radiation) and translate it into electrochemical spike trains (e.g., Aljadeff et al., 2016). For a respondent, the external world has no need of

<sup>3</sup> Not all researchers accept that there is a hard problem to explain, embracing instead some version of psychoneural identity theory (e.g., Churchland, 1986; Crane, 1995; Kim, 1998; Place, 1956; Smart, 1959). Most identity theories of mind pivot on the idea that mental states and processes are identical to brain states and processes. By adopting this position, the identity theorist avoids the ontologically unattractive possibility that acceptance of consciousness as an aspect of reality requires either we broaden our assumptions about the nature of reality (e.g., Russell, 1921; Strawson, 2009) or jettison any hope for ontological monism (e.g., Chalmers, 1996; Descartes, 1984; Robinson, 2008). While the present article hardly is the place to debate this perennial issue in the philosophy of mind, my position is that consciousness cannot be “eliminated” by recourse to identity theories. It remains an unavoidable problem for any form of monistic materialism (e.g., Klein, 2016).

<sup>4</sup> In my usage, the term “representation” refers to an information-bearing neural structure (i.e., a pattern of neural activity possessing semantic properties) whose meaning may be subject to conscious apprehension (i.e., a mental representation).

organism-independent realization: It exists *for* the respondent as it exists *in* the respondent. In short, no meaningful distinction can be drawn between the physical world and its neural instantiation. For the respondent, there is no “being in the world”; rather, “the world is in the being.”

If such neural activity (and the behaviors it enables) benefits survival, natural selection has no adaptation-driven imperative to extend reality beyond its cranial confines. Accordingly, prior to the CE, all taxa possessed of motility acted from response (e.g., Feinberg & Mallatt, 2016; Ginsburg & Jablonka, 2019; Klein et al., 2023). However, as competition for resources intensified in consequence of refinement and expansion of the behavioral competencies on display during the CE (e.g., Ginsburg & Jablonka, 2007, 2019; Godfrey-Smith, 2020; Klein et al., 2023), organisms that could adapt their behavior to the demands of an increasingly unpredictable world would be favored by natural selection. The CE thus provided a context in which acts issuing from agency would have adaptive advantages over acts based solely on response.

The behavior of an “agent” is deliberate (e.g., Crane, 2001; MacMurray, 1969). Organisms acting with agency purposely choose their behaviors and intentionally direct them toward effecting change in a world existing beyond the organism. Prior to completion, an agentic act is subject to modification and correction based on the agent’s goals and interpretation of the situation (for discussion, see Ferrero, 2022; MacMurray, 1969; Walsh, 2015).

There are clear adaptive advantages to acts performed in the service of reasoned deliberation (e.g., Klein et al., 2023; Klein & Loftus, 2024; MacMurray, 1969; Pickering, 2024; Walsh, 2015). As one example, since an agent acts on its environment in virtue of being *in* its environment, agentic behavior can be tailored to contingencies as they present and respond to changes in circumstances.

Since the evolutionary transition from respondent to agent required the organism break free of its solipsistic, neural moorings,<sup>5</sup> the question naturally arises as to how these neural representations appear to exist outside the body’s surface, tethered to the spatial coordinates of an external world. As discussed by Klein et al. (2023), the likely manner in which this was achieved was by means of an evolved capacity for what has been termed “perceptual (or phenomenal) projection”—that is, the ability to project one’s neural representations

into a phenomenological space existing outside the brain in which they originate (e.g., James, 1904; Klein et al., 2023; Leontyev, 2009; Pereira, 2018; Pribram, 2004; Rudrauf et al., 2017; Velmans, 2007; Williford et al., 2018).<sup>6</sup> As Leontyev (2009) put it, it is thanks to the act of projection that “the world is seen by the subject as existing not in his consciousness but outside his consciousness as the objective ‘field’ of his activity” (p. 411). In this way, evolution positioned consciousness both as a necessary consequence of agency (via perceptual projection) and its *modus operandi* (i.e., intentional behavior).

### The Question Left Unaddressed: The Hard Problem of Consciousness

In previous work, we limited investigation to consideration of the question “*why* was conscious registration an adaptive priority?” That focus was motivated by what my colleagues and I call “investigative humility”—the idea that when embarking on examination of a difficult topic, it often is advisable to ask those questions best positioned to take advantage of topic-relevant resources (for discussion, see Klein et al., 2023).

A strong case can be made for this approach when consciousness is the target of inquiry. Research concerning natural selection’s role in the evolution of consciousness (the *why* question) can draw on an extensive body of available scientific knowledge (e.g., the paleontological record; the mechanism of natural selection). This has the effect of enhancing the credibility of the resulting thesis in the eyes of the scientific community.

Answers to questions regarding the hard problem of consciousness, in contrast, can enhance their credibility by availing themselves of insights into *how* evolutionary processes enabled the emergence of conscious organisms. Unfortunately, such resources presently do not exist. In consequence, when undertaking an exploration of consciousness, it is advisable to

<sup>5</sup> It is important to recognize that the transition to agency during the CE was not accompanied by the elimination of nonagentic behavior. Agency was added to, not positioned in place of, the organism’s existing ways of acting (e.g., Klein et al., 2023).

<sup>6</sup> Although perceptual projection remains a hotly debated topic in philosophical discourse (e.g., Lehar, 2003; Pereira, 2018; Pribram, 2004; Velmans, 2007), the phenomenon itself is an undeniable experiential fact in need of explanation, not verification.

limit investigative efforts to *why* questions (for fuller discussion, see Klein et al., 2023).

Investigative humility thus comes at a cost—explanatory scope. For instance, while it is likely to enhance the probability a resulting thesis receives serious consideration from the academic community, the “humility” approach is poorly positioned to offer insight into the perennial mysteries of consciousness—for example, how did subjectivity arise in a universe assumed to consist in its entirety of nonsentient material objects (e.g., Balog, 2019; Chalmers, 1996; Churchland, 1986; Earp, 2012; Hacker, 2002; Levine, 2001; McGinn, 1991, 2004; Meixner, 2008; Strawson, 2009; White, 2021)? To address such questions, one must broaden the scope of his or her inquiries to include topics lying outside the safe haven fashioned by investigative humility. I adopt this approach in what follows.

### Reexamining the Subject–Object Relation in Theories of Mind

Wittgenstein (1997) noted that we do not always need to look for something beneath the surface, hidden from view. Sometimes that something “already lies open to view and ... becomes surveyable by a rearrangement” (p. 92). It is my contention that a careful reexamination of the evolutionary progression from respondent to agent reveals that the canonical treatment of “subject” and “object” in matters pertaining to consciousness is in need of emendation. This revision, in turn, provides insight into (not an explanation of) how the objects of subjective apprehension came to be imbued with the feeling of “what it is like”—that is, the hard problem of consciousness.

The proposition that the world can meaningfully be partitioned into the categories “subject” and “object” has been debated for centuries by scholars representing a diverse array of academic disciplines (for reviews and discussion, see Albahari, 2006; Antognazza, 2021; Bliss, 1917; Brown, 1955; Buber, 1970; W. Earle, 1955; W. E. Earle, 1972; Groff, 2014; Klein, 2012, 2014; Loy, 1988; Lund, 2005; Mann, 2000; McGinn, 2004; Neuhauser, 1990; Nualláin, 2008; Shadworth, 1887; Strawson, 2009; Walter, 1915; Zahavi, 1999, 2005). My point of entry into these deliberations concerns the manner in which perceptual projection repurposed the referential identities of “subject” and “object.”

This, I argue, offers a way to narrow the epistemological gap revealed by the hard problem.

It is generally (though not universally; for review and discussion, see Crane, 2001) thought that consciousness is directed at some content originating from sensory registration, internally generated cerebration, or both (e.g., Brentano, 1995; Chalmers, 1996; W. Earle, 1955; W. E. Earle, 1972; Gallagher & Zahavi, 2008; Groff, 2014; James, 1890; Klein, 2012, 2024; Lund, 2005; Zahavi, 2005). Viewed this way, consciousness can be conceived of as the *subject* having an experience, and content can be considered the *object* being experienced (for discussion, see Bliss, 1917; Brentano, 1995; Crane, 2001; Siewert, 2022; Textor, 2013; Welton, 1999; Woźniak, 2018).

A fundamental assumption about the relation between subject and object is that the subject must direct its attention toward that which it is not—some “other” that can serve as its target (e.g., Antognazza, 2021; W. Earle, 1955; W. E. Earle, 1972; Foster, 1991; Husserl, 1964; Klein, 2012, 2014; Krueger, 2011; Martin, 2008; Neuhauser, 1990; Persson, 2005; Sartre, 1984; Woźniak, 2018; Zahavi, 1999, 2005; but see Bauer, 2019). As Chisholm (1969) noted:

One is never aware of oneself ... although we may apprehend things that are *pour-soi*, things that are manifested or presented to the self, we cannot apprehend the self to which, or to whom, they are manifested—we cannot apprehend the self as it is in itself, as it is *en-soi*. (p. 7)

Accordingly, nothing can be an *object* for the subject unless it is *other to* the subject: The subject cannot apprehend itself (e.g., Albahari, 2006; W. Earle, 1955; W. E. Earle, 1972; Foster, 1991; Gallagher & Zahavi, 2008; Klein, 2013, 2014; Lund, 2005; Sartre, 1984; Zahavi, 1999, 2005).

Put differently, the object is the aspect of physical reality disclosed by subjective experience, whereas the subject consists in the subjective awareness that enables the object to be experienced (for discussions, see Brentano, 1995; Collins, 2008; Gallagher & Zahavi, 2008; Husserl, 1964; Klein, 2012, 2013, 2014; Krueger, 2011; Lund, 2005; Martin, 2008; Meixner, 2005, 2008; Nagel, 1974; Popper, 1994; Siewert, 2022; Woźniak, 2018; Zahavi, 1999, 2005). This ontological bifurcation is (a) the hard problem’s *raison d’être* and (b) the centerpiece of my revisionist claim about the role of agency in the evolution of conscious organisms.



According to canon, a defining feature of the subject is phenomenal experience (e.g., Almog, 2002; Antognazza, 2021; Bliss, 1917; Brentano, 1995; Descartes, 1984; James, 1904; Kant, 1998; McGinn, 2004; Merleau-Ponty, 2013; Nagel, 1974, 1986; Robinson, 2008; Russell, 1948; Van Gulick, 2022; Zahavi, 2005; for reviews see Rebughini, 2014; Taylor, 1992). Yet, the ice cream we eat, the flower we see, and the piano we hear all are experienced as objects exhibiting phenomenal properties (e.g., gustatory, visual, auditory) in virtue of which they assume their identities. The taste of the ice cream, the color of the rose petal, and the sound of the keys as they are played are experiences felt as residing in and emanating from their respective objects. When apprehended by the subject, the object is experienced as alive with phenomenal qualities; it has subjective presence. Yet, according to scholarly consensus, subjective experience is a property of the sentient subject, not of the physical object (dissenting views can be found; e.g., Strawson, 2011; Strong, 1932).

In the next section, I argue that perceptual projection enables the subject to take *itself* as the object under consideration. This ontological reorientation provides a means by which objects can become bearers of qualitative experience.

### A Revisionary Analysis of the Agentic Stance and Its Relevance to the Relation Between the Subject and Object of Consciousness

My colleagues and I have argued that to meet the adaptive challenges faced by vertebrates during the CE, natural selection endowed organisms with the ability to adopt an agentic stance toward environmental contingencies (Klein et al., 2023; Klein & Loftus, 2024). A necessary step in the evolution of agency was for the subject to appreciate there is a world in which to behave. To experience a world external to itself, the agent must feel that its experiences are presented to, not simply present within, itself. This, we argued, was accomplished by enabling the agent to project its internally situated neural representations into a landscape of phenomenal objects situated outside the body in which they originate (e.g., James, 1904; Klein et al., 2023; Leontyev, 2009; Pereira, 2018; Pribram, 2004; Rudrauf et al., 2017; Velmans, 2007; Williford et al., 2018). As Pereira (2018) observed, “We ‘project’ our neural representations into the experiential physical space in

such a way that conscious experience is not of a solipsistic kind (it is not ‘locked’ in the brain), but somehow ‘reflects’ reality” (p. 206). Perceptual projection thus serves as the mechanism by which external reality acquires a feeling of subjective presence (see Footnote 6).

The evolution of agency flips the traditional subject–object relation on its head. Rather than existing as an externally located, physically propertied “other,” the object of perceptual projection consists in neural activity produced by the subject and projected into phenomenal space. The content of subjective registration is an “object” that has been fashioned by the subject within the constraints imposed by Kant’s (1998) noumena, but whose essence consists in the neural-based phenomenality of the subject.

In this way, neural representations derived from sensory registration get a secondary “objectivized” existence, which, in consequence of perceptual projection, is made accessible to sensory registration. Having been transcribed and projected into a space existing outside the brain that constructed them, the subject apprehends his or her own neural representations as the objects of perception (e.g., Leontyev, 2009; Pereira, 2018; Pribram, 2004; Rudrauf et al., 2017; Velmans, 2007). The object of subjective experience is the subjectivity being experienced.<sup>7</sup>

In sum, the subject is not presented with an external reality consisting in physical objects devoid of subjective qualities, but rather a

<sup>7</sup> A related view—arrived at from different theoretical considerations—is presented by Antognazza (2021), who concludes “What is distinctive of this relationship of a subject to an object is that, *in the act* of perceiving/knowing there is a *sui generis* unification between perceiver and perceived, knower and known, with no gap between them” (p. 522; emphases in original). The self-referential nature of consciousness also has been noted by McGinn, who argues that: “... we perceive our own consciousness (more exactly, we perceive a property that is a product of our consciousness)... Thus it is that consciousness is self-referential ... perception is a world suffused with our own subjectivity, so awareness of objects in that world involves awareness of that very subjectivity. We might express this by saying that perceptual consciousness is ‘covertly self-referential’—implicitly, consciousness is consciousness of consciousness.” He concludes: “When I am aware of my environment I am aware of it as instantiating properties that make reference to my own states of consciousness. That is, I am aware of it as instantiating properties that depend for their very existence on consciousness ... I am seeing my own conscious constitution in front of me—projected, spread ... So consciousness does involve a kind of self-reference—it loops back on itself.” (McGinn, 2021; emphasis not in original).

phenomenally “live” version of itself projected as its object of apprehension. The act of repositioning phenomenal qualities in objects occupying external space places the subject in a relation to itself. Seen this way, consciousness can be viewed as the natural consequence of the subject taking *itself* as its object. In response to the Buddhist koan “can a flame illuminate itself?” (e.g., Loy, 1988; Williams, 2013; Zahavi, 2005), the answer seems to be affirmative—provided the question is considered in the context of the relation between the subject and object of consciousness.

### Final Thoughts

My meditation on the complex interplay between evolution and consciousness clearly does not bridge the explanatory gap. At best, it narrows the gulf separating “subject and object”—two constructs whose presumed metaphysical incommensurability is considered by many to be a prime reason for the hardness of the hard problem (e.g., Chalmers, 1996; Collins, 2008; Descartes, 1984; Dorsey, 2015; Gallagher & Zahavi, 2008; Goff, 2017; Klein, 2014; Levine, 2001; Lund, 2005; McGinn, 2004).

Realistically, my deliberations are unlikely to provide more than a faint glimpse into the means by which natural selection enabled organic matter to have subjective experience. Yet, rather than feel discouraged, I take comfort in the sentiment that “opening the windows to shed light on difficult topics is likely to bring advantages when compared to a life behind shutters, even if the view outside is somewhat limited and distorted” (Danziger, 2008, p. 21).<sup>8</sup>

<sup>8</sup> During the proofing stage of article preparation, I discovered a chapter by Tsou (2013) in which he expresses general agreement with my thoughts about the relation between scientific credibility and the “why vs. how” lines of inquiry. Although I was unaware of Tsou’s work until page proofing was in progress, I feel it proper to add this footnote (and accompanying citation) in recognition of overlap between his arguments and those in the present article.

### References

Albahari, M. (2006). *Analytical Buddhism: The two-tiered illusion of self*. Palgrave Macmillan. <https://doi.org/10.1057/9780230800540>

- Aljadeff, J., Lansdell, B. J., Fairhall, A. L., & Kleinfeld, D. (2016). Analysis of neuronal spike trains, deconstructed. *Neuron*, 91(2), 221–259. <https://doi.org/10.1016/j.neuron.2016.05.039>
- Almog, J. (2002). *What am I? Descartes and the mind-body problem*. Oxford University Press. <https://doi.org/10.1093/0195146468.001.0001>
- Antognazza, M. R. (2021). Subject, object, and knowledge as first-person. *Grazer Philosophische Studien*, 98(4), 516–529. <https://doi.org/10.1163/18756735-00000143>
- Balog, K. (2019). Hard, harder, hardest. In A. Sullivan (Ed.), *Sensations, thoughts, and language: Essays in honor of Brian Loar* (pp. 265–289). Routledge. <https://doi.org/10.4324/9781351017435-13>
- Bauer, R. (2019). Merleau Ponty: Subjectivity as the field of being within beings. Awareness as existingness. *Revista Científica Arbitrada de la Fundación MenteClara*, 4, 81–93. <https://doi.org/10.32351/rca.v4.1.61>
- Bliss, H. E. (1917). The subject–object relation. *The Philosophical Review*, 26(4), 395–408. <https://doi.org/10.2307/2178486>
- Block, N. (1995). On a confusion about a function of consciousness. *Behavioral and Brain Sciences*, 18(2), 227–247. <https://doi.org/10.1017/S0140525X00038188>
- Brentano, F. (1995). *Descriptive psychology*. Routledge.
- Brown, J. (1955). *Subject and object in modern theology*. Macmillan.
- Buber, M. (1970). *I and thou* (W. Kaufmann, Trans.). Simon & Schuster.
- Carruthers, P. (2000). *Phenomenal consciousness: A naturalistic theory*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511487491>
- Chalmers, D. J. (1996). *The conscious mind: In search of a fundamental theory*. Oxford University Press.
- Chalmers, D. J. (2018). The meta-problem of consciousness. *Journal of Consciousness Studies*, 25, 6–61.
- Chisholm, R. M. (1969). On the observability of the self. *Philosophy and Phenomenological Research*, 30(1), 7–21. <https://doi.org/10.2307/2105917>
- Chomsky, N. (2016). *What kind of creatures are we?* Columbia University Press.
- Churchland, P. S. (1986). *Neurophilosophy: Toward a unified science of the mind-brain*. MIT Press. <https://doi.org/10.7551/mitpress/4952.001.0001>
- Collins, R. (2008). Modern physics and the energy-conservation objection to mind-body dualism. *American Philosophical Quarterly*, 45, 31–42.
- Crane, T. (1995). The mental causation debate. *Proceedings of the Aristotelian Society, Supplementary*, 69, 211–236.
- Crane, T. (2001). *Elements of mind*. Oxford University Press.
- Crane, T., & Mellor, D. H. (1990). There is no question of physicalism. *Mind*, 99(394), 185–206. <https://doi.org/10.1093/mind/XCIX.394.185>

- Danziger, K. (2008). *Marking the mind: A history of memory*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511810626>
- Dennett, D. C. (1991). *Consciousness explained*. Little, Brown and Company.
- Descartes, R. (1984). *The philosophical writings of Descartes* (J. Cottingham, Ed.; Vol. 2). Cambridge University Press.
- Dorsey, J. E. (2015). Four conceptions of the hard problem of consciousness. *Journal of Consciousness Studies*, 22, 129–144.
- Earle, W. (1955). *Objectivity: An essay on phenomenological ontology*. The Noonday Press.
- Earle, W. E. (1972). *The autobiographical consciousness*. Quadrangle Books.
- Earp, B. (2012). I can't get no (epistemic) satisfaction: Why the hard problem of consciousness entails a hard problem of explanation. *Dialogues in Philosophy, Mental and Neuro Sciences*, 5, 14–20.
- Feinberg, T., & Mallatt, J. (2016). *The ancient origins of consciousness*. The MIT Press. <https://doi.org/10.7551/mitpress/10714.001.0001>
- Ferrero, L. (2022). *The Routledge handbook of philosophy of agency*. Routledge.
- Foster, J. (1991). *The immaterial self*. Routledge.
- Gallagher, S., & Zahavi, D. (2008). *The phenomenological mind*. Routledge.
- Ginsburg, S., & Jablonka, E. (2007). The translation to experience: Limited learning and limited experiencing. *Biological Theory*, 2, 218–230. <https://doi.org/10.1162/biot.2007.2.3.218>
- Ginsburg, S., & Jablonka, E. (2019). *The evolution of the sensitive soul: Learning and the origins of consciousness*. The MIT Press. <https://doi.org/10.7551/mitpress/11006.001.0001>
- Godfrey-Smith, P. (2020). *Metazoa: Animal life and the birth of the mind*. Farrar, Straus and Giroux.
- Goff, P. (2017). *Consciousness and fundamental reality*. Oxford University Press. <https://doi.org/10.1093/oso/9780190677015.001.0001>
- Graziano, M. S. A. (2019). *Rethinking consciousness: A scientific theory of subjective experience*. W.W. Norton.
- Graziano, M. S. A. (2022). A conceptual framework for consciousness. *Proceedings of the National Academy of Sciences of the United States of America*, 119(18), Article e2116933119. <https://doi.org/10.1073/pnas.2116933119>
- Groff, R. (2014). *Subject and object: Frankfurt school writings on epistemology, ontology, and method*. Bloomsbury.
- Hacker, P. M. S. (2002). Is there anything it is like to be a bat? *Philosophy*, 77(2), 157–174. <https://doi.org/10.1017/S0031819102000220>
- Heisenberg, W. (1999). *Physics and philosophy*. Prometheus Books. (Original work published 1958)
- Husserl, E. (1964). *The phenomenology of internal time-consciousness*. Indiana University Press.
- Jackson, F. (2003). Mind and illusion. In A. O'Hear (Ed.), *Minds and persons* (pp. 251–272). Cambridge University Press. <https://doi.org/10.1017/CBO9780511550294.014>
- James, W. (1890). *Principles of psychology* (Vol. 1). Henry Holt and Company.
- James, W. (1904). Does 'consciousness' exist? *The Journal of Philosophy, Psychology, and Scientific Methods*, 1(18), 477–491. <https://doi.org/10.2307/2011942>
- Kammerer, F. (2019). Does the explanatory gap rest on a fallacy? *Review of Philosophy and Psychology*, 10(4), 649–667. <https://doi.org/10.1007/s13164-018-0424-1>
- Kammerer, F. (2022). How can you be so sure? Illusionism and the obviousness of phenomenal consciousness. *Philosophical Studies*, 179(9), 2845–2867. <https://doi.org/10.1007/s11098-022-01804-7>
- Kant, I. (1998). *The Cambridge edition of the works of Immanuel Kant: Critique of pure reason* (P. Guyer & A. W. Wood, Trans.). Cambridge University Press.
- Kastrup, B. (2019). *The idea of the world*. John Hunt Publishing.
- Kim, J. (1998). *Philosophy of mind*. Westview Press.
- Klein, S. B. (2012). The self and its brain. *Social Cognition*, 30(4), 474–518. <https://doi.org/10.1521/soco.2012.30.4.474>
- Klein, S. B. (2013). Images and constructs: Can the neural correlates of self be revealed through radiological analysis? *International Journal of Psychological Research*, 6, 117–132. <https://doi.org/10.21500/20112084.727>
- Klein, S. B. (2014). *The two selves: Their metaphysical commitments and functional independence*. Oxford University Press.
- Klein, S. B. (2015). The feeling of personal ownership of one's mental states: A conceptual argument and empirical evidence for an essential, but underappreciated, mechanism of mind. *Psychology of Consciousness: Theory, Research, and Practice*, 2(4), 355–376. <https://doi.org/10.1037/cns0000052>
- Klein, S. B. (2016). The unplanned obsolescence of psychological science and an argument for its revival. *Psychology of Consciousness: Theory, Research, and Practice*, 3(4), 357–379. <https://doi.org/10.1037/cns0000079>
- Klein, S. B. (2020). Thoughts on the scientific study of phenomenal consciousness. *Psychology of Consciousness: Theory, Research, and Practice*, 8(1), 74–80. <https://doi.org/10.1037/cns0000231>
- Klein, S. B. (2024). Consider the source: An examination of the effects of externally and internally generated content on memory. *Psychology of Consciousness*:



- Theory, Research, and Practice*, 11(3), 311–323. <https://doi.org/10.1037/cns0000339>
- Klein, S. B., Cosmides, L., Tooby, J., & Chance, S. (2002). Decisions and the evolution of memory: Multiple systems, multiple functions. *Psychological Review*, 109(2), 306–329. <https://doi.org/10.1037/0033-295X.109.2.306>
- Klein, S. B., & Loftus, J. (2024). Creating a world in the head: The conscious apprehension of neural content originating from internal sources. *Psychology of Consciousness: Theory, Research, and Practice*. Advance online publication. <https://doi.org/10.1037/cns0000402>
- Klein, S. B., Nguyen, B. N., & Zhang, B. M. (2023). Going out of my head: An evolutionary proposal concerning the “Why” of sentience. *Psychology of Consciousness: Theory, Research, and Practice*. Advance online publication. <https://doi.org/10.1037/cns0000364>
- Krueger, J. W. (2011). The who and how of experience. In M. Siderits, E. Thompson, & D. Zahavi (Eds.), *Self, no self: Perspectives from analytical, phenomenological and Indian traditions* (pp. 27–55). Oxford University Press.
- Lehar, S. (2003). Gestalt isomorphism and the primacy of subjective conscious experience: A Gestalt Bubble model. *Behavioral and Brain Sciences*, 26(4), 375–408. <https://doi.org/10.1017/S0140525X03000098>
- Leontyev, A. N. (2009). *The development of mind: Selected works of Aleksei Nikolaevich Leontyev*. Marxist Internet Archive. (Original work published 1977)
- Levine, J. (2001). *Purple haze: The puzzle of consciousness*. Oxford University Press. <https://doi.org/10.1093/0195132351.001.0001>
- Levine, J. (2003). Knowing what it is like. In B. Gertler (Ed.), *Privileged access: Philosophical accounts of self-knowledge* (pp. 45–53). Ashgate.
- Loar, B. (1990). Phenomenal states. *Philosophical Perspectives*, 4, 81–108. <https://doi.org/10.2307/2214188>
- Loy, D. L. (1988). *Nonduality: A study in comparative philosophy*. Yale University Press.
- Lund, D. H. (2005). *The conscious self*. Humanity Books.
- MacMurray, J. (1969). *The self as agent*. Farber and Farber. (Original work published 1957)
- Mann, W.-R. (2000). *The discovery of things*. Princeton University Press. <https://doi.org/10.1515/9780691221595>
- Martin, C. B. (2008). *The mind in nature*. Oxford University Press.
- McGinn, C. (1991). *The problem of consciousness: Essays toward a resolution*. Blackwell Publishers.
- McGinn, C. (2004). *Consciousness and its objects*. Oxford University Press. <https://doi.org/10.1093/019926760X.001.0001>
- McGinn, C. (June 4, 2021). *Consciousness and self-reference*. <https://www.colinmcginn.net/consciousness-and-self-reference/>
- Meixner, U. (2005). Physicalism, dualism and intellectual honesty. *Dualism Review*, 1, 1–20.
- Meixner, U. (2008). The reduction of reductive and non-reductive materialism—And a new start. In A. Antonietti, A. Corradini, & E. J. Lowe (Eds.), *Psycho-physical dualism: An interdisciplinary approach* (pp. 143–166). Rowman & Littlefield Publishers.
- Merleau-Ponty, M. (2013). *Phenomenology of perception*. Routledge. <https://doi.org/10.4324/9780203720714>
- Nagel, T. (1974). What is it like to be a bat? *The Philosophical Review*, 83(4), 435–450. <https://doi.org/10.2307/2183914>
- Nagel, T. (1986). *The view from nowhere*. Oxford University Press.
- Neuhouser, F. (1990). *Fichte's theory of subjectivity*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511624827>
- Nualláin, S. Ó. (2008). Subjects and objects: Metaphysics, biology, consciousness, and cognition. *Biosemiotics*, 1, 239–251. <https://doi.org/10.1007/s12304-008-9016-2>
- Pereira, A., Jr. (2018). The projective theory of consciousness: From neuroscience to philosophical psychology. *Trans/Form/Ação*, 41, 199–232. <https://doi.org/10.1590/0101-3173.2018.v41esp.11.p199>
- Persson, I. (2005). Self-doubt: Why we are not identical to things of any kind. In G. Strawson (Ed.), *The self?* (pp. 26–44). Blackwell Publishing.
- Pickering, A. (2024). What is agency? A view from science studies and cybernetics. *Biological Theory*, 19(1), 16–21. <https://doi.org/10.1007/s13752-023-00437-1>
- Place, U. T. (1956). Is consciousness a brain process? *British Journal of Psychology*, 47(1), 44–50. <https://doi.org/10.1111/j.2044-8295.1956.tb00560.x>
- Plonitsky, A. (2010). *Epistemology and probability*. Springer. <https://doi.org/10.1007/978-0-387-85334-5>
- Popper, K. R. (1994). *Knowledge and the body-mind problem: In defense of interaction*. Routledge.
- Pribram, K. H. (2004). Consciousness reassessed. *Mind and Matter*, 2, 7–35.
- Rebughini, P. (2014). *Subject, subjectivity, subjectivation*. Retrieved March 30, 2022 from [https://www.researchgate.net/profile/Paola-Rebughini/publication/n264466714\\_Subject\\_subjectivity\\_subjectivation/links/540733ee0cf2bba34c1e938a/Subject-subjectivity-subjectivation.pdf](https://www.researchgate.net/profile/Paola-Rebughini/publication/n264466714_Subject_subjectivity_subjectivation/links/540733ee0cf2bba34c1e938a/Subject-subjectivity-subjectivation.pdf)
- Robinson, D. N. (2008). *Consciousness and mental life*. Columbia University Press.
- Rudrauf, D., Bennequin, D., Granic, I., Landini, G., Friston, K., & Williford, K. (2017). A mathematical

- model of embodied consciousness. *Journal of Theoretical Biology*, 428, 106–131. <https://doi.org/10.1016/j.jtbi.2017.05.032>
- Russell, B. (1921). *The analysis of mind*. George Allen and Unwin.
- Russell, B. (1948). *Human knowledge—Its scope and limits*. Simon and Schuster.
- Sartre, J.-P. (1984). *Being and nothingness* (H. E. Barnes, Trans.). Washington Square Press.
- Seager, W. (2016). *Theories of consciousness: An introduction and assessment* (2nd ed.). Routledge. <https://doi.org/10.4324/9780203485583>
- Shadworth, H. H. (1887). Subject and object in psychology. *Mind*, 12, 423–429.
- Siewert, C. (2022). Consciousness and intentionality. In E. N. Zalta (Ed.), *The Stanford encyclopedia of philosophy*. Metaphysics Research Lab, Stanford University. <https://plato.stanford.edu/archives/su/m2022/entries/consciousness-intentionality/>
- Smart, J. J. C. (1959). Sensations and brain processes. *The Philosophical Review*, 68(2), 141–156. <https://doi.org/10.2307/2182164>
- Strawson, G. (2009). *Mental reality* (2nd ed.). The MIT Press. <https://doi.org/10.7551/mitpress/9780262513104.001.0001>
- Strawson, G. (2011). Radical self-awareness. In M. Siderits, E. Thompson, & D. Zahavi (Eds.), *Self, no self: Perspectives from analytical phenomenological and Indian Traditions* (pp. 274–307). Oxford University Press.
- Strong, C. A. (1932). On the subject–object relation. *Mind*, 41(164), 476–480. <https://doi.org/10.1093/mind/XLI.164.476>
- Taylor, C. (1992). *Sources of the self: The making of the modern identity*. Harvard University Press.
- Textor, M. (2013). Brentano on the dual relation of the mental. *Phenomenology and the Cognitive Sciences*, 12(3), 465–483. <https://doi.org/10.1007/s11097-012-9281-z>
- Tsou, J. Y. (2013). Origins of the qualitative aspects of consciousness: Evolutionary answers to Chalmers’ hard problem. In L. Swan (Ed.), *Origins of mind* (pp. 259–269). Springer.
- Tsuchiya, N. (2017). “What is it like to be a bat?” A pathway to the answer from the integrated information theory. *Philosophy Compass*, 12(3), Article e12407. <https://doi.org/10.1111/phc3.12407>
- Van Gulick, R. (2022). Consciousness. In E. N. Zalta & U. Nodelman (Eds.), *The Stanford Encyclopedia of philosophy*. <https://plato.stanford.edu/archives/win2022/entries/consciousness/>
- Velmans, M. (2007). Reflexive monism. *Journal of Consciousness Studies*, 15, 5–50.
- Walsh, D. M. (2015). *Organization, agency, and evolution*. Cambridge University Press. <https://doi.org/10.1017/CBO9781316402719>
- Walter, J. E. (1915). *Subject and object*. Johnston and Penney.
- Weisberg, J. (2023). *Explanatory optimism about the hard problem of consciousness*. Routledge. <https://doi.org/10.4324/9781003411581>
- Welton, D. (1999). *The essential Husserl—Basic writings in transcendental phenomenology*. Indiana University Press.
- White, B. (2021). The hard problem isn’t getting any easier: Thoughts on Chalmers’ “Meta-Problem”. *Philosophia*, 49(1), 495–506. <https://doi.org/10.1007/s11406-020-00210-9>
- Williams, P. (2013). *The reflexive nature of awareness: A Tibetan Madhyamaka defense*. Routledge. <https://doi.org/10.4324/9781315027302>
- Williford, K., Bennequin, D., Friston, K., & Rudrauf, D. (2018). The projective consciousness model and phenomenal selfhood. *Frontiers in Psychology*, 9, Article 2571. <https://doi.org/10.3389/fpsyg.2018.02571>
- Wittgenstein, L. (1997). *Philosophical investigations* (G. E. M. Anscombe, Trans.; 2nd ed.). Blackwell.
- Woźniak, M. (2018). “I” and “me”: The self in the context of consciousness. *Frontiers in Psychology*, 9, Article 1656. <https://doi.org/10.3389/fpsyg.2018.01656>
- Wright, W. (2007). Explanation and the hard problem. *Philosophical Studies*, 132, 301–330. <https://doi.org/10.1007/s11098-005-2220-x>
- Zahavi, D. (1999). *Self-awareness and alterity: A phenomenological investigation*. Northwestern University Press.
- Zahavi, D. (2005). *Subjectivity of selfhood: Investigating the first-person perspective*. The MIT Press. <https://doi.org/10.7551/mitpress/6541.001.0001>

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