Conflating Abstraction with Empirical Observation: The False Mind-Matter Dichotomy

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> Context • The alleged dichotomy between mind and matter is pervasive. Therefore, the attempt to explain matter in terms of mind (idealism) is often considered a mirror image of that of explaining mind in terms of matter (mainstream physicalism), in the sense of being structurally equivalent despite being reversely arranged. **> Problem** • I argue that this is an error arising from language artifacts, for dichotomies must reside in the same level of abstraction. **> Method** • I show that, because matter outside mind is not an empirical observation but rather an explanatory model, the epistemic symmetry between the two is broken. Consequently, matter and mind cannot reside in the same level of abstraction. **> Results** • It then becomes clear that attempting to explain mind in terms of matter is epistemically more costly than attempting to explain matter in terms of mind. **> Implications** • The qualities of experience are suggested to be not only epistemically, but also ontologically primary. **> Constructivist content** • I highlight the primacy of perceptual constructs over explanatory abstraction on both epistemic and ontic levels.
> Key words • **Idealism, physicalism, pancomputationalism, anti-realism, hard problem of consciousness, epistemic symmetry, explanatory abstraction, levels of abstraction.**

Introduction

« 1 » The (unexamined) assumption that mind and matter are jointly exhaustive and mutually exclusive concepts is pervasive today. In other words, many scholars implicitly take every aspect of existence to be either mental (e.g., thoughts, emotions, hallucinations) or physical (e.g., tables and chairs), mentality and physicality being polar opposites in some sense. Originating with René Descartes and Immanuel Kant (Walls 2003: 130), this dichotomy has been firmly entrenched in Western thought since at least the early nineteenth century. Eminent scholarly publications of the time, such as *The British Cyclopædia of Natural History,* lay it out unambiguously: "as mind is the opposite of matter in definition, the perfection of its exercise must be the opposite of that of the exercise of matter" (Partington 1837: 161). From the early twentieth century onwards, more nuanced formulations of the dichotomy were proposed. Alfred North Whitehead (1947), for instance, considered mind and matter *co-dependent* opposites. Even Henri Bergson, whose conception of an *élan vital* was meant to dilute the Cartesian split, was careful not to completely eradicate the dichotomy (Catani 2013: 94).

« 2 » Indeed, this trend towards more nuanced formulations endures to this day. Philosopher David Chalmers, for instance, wrote that the "failure of materialism leads to a kind of *dualism*: there are both physical and nonphysical [i.e., mental] features of the world" (Chalmers 1996: 124). He speaks of *property* dualism (Ibid.: 125) to distinguish it from the discredited *substance* dualism of Descartes. Nonetheless, the essence of the dichotomy persists intact. Public endorsements of property dualism by influential science spokespeople, such as neuroscientists Christof Koch (2012: 152) and Sam Harris,[1] lend academic legitimacy to it. Harris, for instance, claims that mind and matter each represent "half of reality," making the implicit assumption that they have comparable epistemic status (that is, that matter is as confidently knowable as mind). So pervasive is this assumption that it has become integral to our shared cultural intuitions.

« 3 » Whilst a fundamental dichotomy between mind and matter is readily accepted by large segments of the population – perhaps for psychological reasons (Heflick et al. 2015) – in philosophical circles the corresponding dualism is properly regarded as unparsimonious. For this reason, philosophy has historically attempted to explain one member of the alleged dichotomy in terms of the other. The ontology of idealism, for instance, attempts to reduce "all sense data to mental contents" (Tarnas 2010: 335), whereas mainstream physicalism – perhaps better labelled as "materialism," but which I shall continue to refer to as "mainstream physicalism" for the sake of consistency with some of the relevant literature – attempts to reduce all mental contents to material arrangements (Stoljar 2016). To be more specific, idealism entails that mind is nature's fundamental ontological ground, everything else being reducible to, or grounded in, mind, whereas mainstream physicalism posits that nature's fundamental ontological ground is matter outside and independent of mind, everything else being reducible to, or grounded in, matter.

1| See Harris's video titled "You Are More Than Your Brain" on *Big Think*, 4 September 2016, available at https://www.facebook.com/BigThinkdotcom/videos/10153879575418527

« 4 » The problem is that the ingrained cultural intuition that mind and matter have comparable epistemic status tends to creep – unexamined – even into philosophical thought, leading to the tacit conclusion that idealism and mainstream physicalism are mirror images of each other, in the sense of being structurally equivalent despite being reversely arranged. In the present essay, I contend that this tacit conclusion is false because it overlooks important epistemic considerations: we do *not* – and fundamentally *cannot* – know matter as confidently as we know mind. By incorrectly positing that idealism incurs an epistemic cost comparable to that of mainstream physicalism in at least some important sense, the tacit conclusion undervalues idealism and overvalues physicalism. This confusion may be a key enabler of physicalism's success in underpinning our present-day mainstream worldview. Once the tacit conclusion is properly examined and rectified, as attempted in this essay, idealism may emerge as a more plausible ontology than mainstream physicalism, at least in terms of its epistemic cost.

« 5 » Like Gilbert Ryle (2009), I argue that mind and matter do *not* form a dichotomy. My argument, however, does not depend – as Ryle's controversially does (Webster 1995: 483) – on equating mind with behaviours. Indeed, Ryle attempts to refute the alleged dichotomy by effectively relegating mind to the status of mere illusion (ibid: 461). My argument, instead, rests on the notion that mind and matter are not epistemically symmetrical – a concept I shall formally define in the section titled "Dispelling the mind-matter dichotomy" – as members of a dichotomy must be. I do not deny mind, because it is epistemically primary: all knowledge presupposes mind.

« 6 » That the notion of physically objective matter – that is, matter outside and independent of mind – is now largely taken for granted suggests cultural acclimatization to what is a mere hypothesis. After all, physically objective matter is not empirically observable, but a conceptual explanatory device *abstracted from* the patterns and regularities of empirical observations – that is, an *explanatory abstraction* (Glasersfeld 1984; more on this in the section titled "Levels of explanatory abstraction"). Indeed, there seems to be a growing tendency in science today to mistake explanatory abstraction for what is available to us empirically. This has been extensively documented before, but mostly in regard to clearly speculative ideas such as superstring theory and multiverse cosmologies (Smolin 2007). When it comes to the everyday notion of physically objective matter, however, many fail to see the same conflation at work.

« 7 » To illustrate and highlight the conflation with an admittedly extreme example, the next section briefly reviews the ontology of pancomputationalism, which posits ungrounded computation as the primary element of existence (Piccinini 2015). Indeed, the idea of replacing physicalism with ontic pancomputationalism should provide a visceral demonstration of the epistemic cost of substituting explanatory abstraction for empirical observation. In this context, my suggestion is that an analogous epistemic disparity exists between idealism and mainstream physicalism. In other words, if one is convinced that ontic pancomputationalism is absurd in comparison to physicalism, then – and on the same basis – one has reason to question the plausibility of mainstream physicalism in comparison to idealism.

« 8 » The section titled "Levels of explanatory abstraction" then elaborates more systematically on the different planes of abstract explanations used in science and philosophy. It provides the basis for the refutation of the alleged dichotomy between mind and matter later carried out in the section titled "Dispelling the mind-matter dichotomy," which forms the core of this essay. Finally, the Conclusion sums it all up.

« 9 » Before we start, however, some terminology clarifications are needed. Throughout this essay, I use the word "mind" in the sense of phenomenal consciousness. Following Thomas Nagel's (1974) original definition of the latter – which has since been further popularized by Chalmers (1996, 2003) – I stipulate that, if there is anything it is like to be a certain entity, then the entity is minded. As such, mind – as the word is used here – is epistemically primary, an assertion further substantiated in the section titled "Levels of explanatory abstraction." In this sense, mind does not necessarily entail higher-level functions such as metacognition – that is, the knowledge of one's knowledge (Schooler 2002: 340) – or even a conscious sense of self as distinct from the world. It necessarily entails only the presence of phenomenal properties, in that it is defined as the substrate or ground of experience. Moreover, insofar as what we call "concreteness" is itself a phenomenal property associated with the degree of clarity or vividness of experience, mind is the sole ground of concreteness. Anything allegedly non-mental cannot, by definition, be concrete, but is abstract instead, in the sense of lacking phenomenal properties.

« 10 » I am well aware that the word "mind" is used in entirely different ways – often decoupled from experience – in other contexts, such as philosophy of biology (Godfrey-Smith 2014) and artificial intelligence (Franklin 1997). Yet, I believe the usage I am defining here is adequate for the context of the present article. And given this usage, experience can be coherently regarded as an excitation of mind, whereas mind can be coherently regarded as the substrate or ground of experience.

The epistemic cost of explanation by abstraction

« 11 » By postulating a material world outside mind and obeying laws of physics, physicalism can accommodate the patterns and regularities *of* perceptual experience. *But it fails to accommodate experience itself*. This is called the "hard problem of consciousness" and there is now a vast literature on it (e.g., Levine 1983; Rosenberg 2004: 13–30; Strawson 2006: 2–30). In a nutshell, the qualities of experience are irreducible to the parameters of material arrangements – whatever the arrangement is – in the sense that it is impossible, even in principle, to deduce those qualities from these parameters (Chalmers 2003).

« 12 » As I elaborate in the section titled "Dispelling the mind-matter dichotomy," the "hard problem" is not merely hard, but fundamentally insoluble, arising as it does from the very failure to distinguish explanatory abstraction from empirical observation discussed in this article. As such, it implies that we cannot, *even in principle*, explain mind in terms of matter. But because the contemporary cultural ethos entails the notion that mind and matter constitute a di-

chotomy, one may feel tempted to conclude that there should also be a symmetrical "hard problem *of matter*" – that is, that we should not, even in principle, be able to explain matter in terms of mind. The natural next step in this flawed line of reasoning is to look for more fundamental ontological ground preceding both mind and matter; a *third* substrate to which matter and mind could both be reduced.

« 13 » A good example of this line of reasoning is brought by ontic pancomputationalism, which posits that ungrounded information processing is what makes up the universe at its most fundamental level (Fredkin 2003). As such, ontic pancomputationalism entails that computation precedes matter ontologically. But "if computations are not configurations of physical entities, the most obvious alternative is that computations are abstract, mathematical entities, like numbers and sets" (Piccinini 2015). According to ontic pancomputationalism, even mind itself – psyche, soul – is a derivative phenomenon of purely abstract information processing.[2]

« 14 » To gain a sense of the epistemic cost of this line of reasoning, consider the position of physicist Max Tegmark (2014). According to him, "*protons*, *atoms*, *molecules*, *cells* and *stars*" are all redundant "baggage" (ibid: 255). Only the mathematical parameters used to describe the behaviour of matter are real. In other words, Tegmark posits that the universe consists purely of numbers – ungrounded information – but nothing to attach these numbers to. The universe supposedly is a "set of abstract entities with relations between them," which "can be described in a baggage-independent way" (ibid: 267). He attributes all ontological value to a description while – paradoxically – denying the existence of the very thing that is described in the first place.

« 15 » Clearly, ontic pancomputationalism represents total commitment to abstract mathematical concepts as the foundation of existence. According to it, there are only numbers and sets. But what are numbers and sets without the mind or matter where they could reside? It is one thing to state in language that numbers and sets can exist without mind and matter, but it is another thing entirely to explicitly and coherently conceive of what – if anything – this may mean. By way of analogy, it is possible to *write* – as Lewis Carrol did – that the Cheshire Cat's grin remains after the cat disappears, but it is another thing entirely to conceive explicitly and coherently of what this means.

« 16 » Ontic pancomputationalism appeals to ungrounded information – pure numbers, mathematical descriptions – as ontological primitive, i.e., as the sole fundamental aspect of existence. But what exactly is information? Our intuitive understanding of the concept has been cogently captured and made explicit by Claude Shannon (1948): information is given by state differences discernible in a system. As such, it is a property *of* a system – associated with the system's possible configurations – not an entity or ontological class unto itself. Under mainstream physicalism – that is, materialism – the system whose configurations constitute information is a material arrangement, such as a computer. Under idealism, it is mind, for experience entails different phenomenal states that can be qualitatively discerned from one another. Hence, information requires a mental or material substrate in order to be even conceived of explicitly and coherently. To say that information exists in and of itself is akin to speaking of spin without the top, of ripples without water, of a dance without the dancer, or of the Cheshire Cat's grin without the cat. It is a grammatically valid statement devoid of any semantic value: a language game less meaningful than fantasy, for internally consistent fantasy can at least be explicitly and coherently conceived of and, thereby, known as such. But in what way can we know information uncouched in mind or matter?

« 17 » One assumes that serious proponents of ontic pancomputationalism are well aware of this line of criticism. How do they then reconcile their position with it? A passage by Luciano Floridi – well-known advocate of information as ontological primitive – may provide a clue. In a section titled "The nature of information," he states:

> "Information is notoriously a polymorphic phenomenon and a polysemantic concept so, as an explicandum, it can be associated with several explanations, depending on the level of abstraction adopted and the cluster of requirements and desiderata orientating a theory. […] *Information remains an elusive concept.*" (Floridi 2008: 117, emphasis added)

« 18 » Such ambiguity lends ontic pancomputationalism a kind of conceptual fluidity that renders it impossible to pin down. After all, if the choice of ontological primitive is given by "an elusive concept," how can one definitely establish that the choice is wrong? In admitting the possibility that information may be "a network of logically interdependent but mutually irreducible concepts" (Floridi 2008: 120), Floridi seems to suggest, even, that such elusiveness may be unresolvable.

« 19 » While vagueness may be defensible in regard to natural entities conceivably beyond the human ability to apprehend, it is at least difficult to justify when it comes to a *human concept* such as information. *We invented the concept*, so we either specify clearly what we mean by it or our conceptualization remains too ambiguous to be ontologically meaningful. In the latter case, there is literally *no sense* in attributing ontological value to information and, hence, ontic pancomputationalism is – once again – strictly meaningless.

« 20 » Although ontic pancomputationalism is an admittedly extreme example, an analogous attempt to reduce concreteness – that is, the felt presence of conscious perception (Merleau-Ponty 1964) – to mere explanatory abstraction lies behind both mainstream physicalism and the alleged mind-matter dichotomy, as I shall argue in the next section. At the root of this concerning state of affairs is a generalized failure to recognize that every step of explanatory abstraction away from the concreteness of conscious perception implies a reduction in epistemic confidence: we do not know that abstract conceptual objects exist with the same level of confidence that we *do* know that our perceptions – whatever their source or underlying ontic nature may be – exist. I do not know that subatomic particles outside and independent of mind exist with the same level of confidence that I *do* know that the chair I am sitting on, which I am directly acquainted with through conscious perception, exists. Worse still, with what

2| See Fredkin's online draft paper titled "On the Soul" at http://www.digitalphilosophy.org/wp-content/uploads/2015/07/on_the_soul.pdf

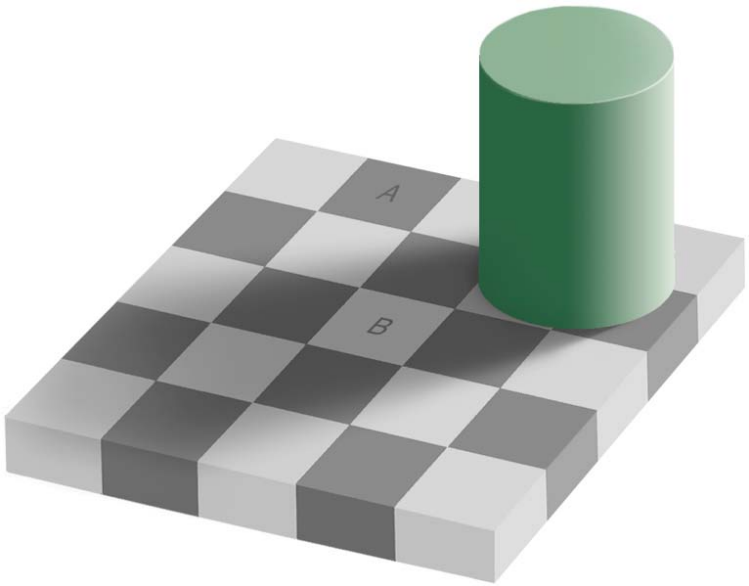


Figure 1: The "checker shadow" illusion. Despite appearances to the contrary, squares A and B are the same shade of grey.

confidence can we know that a loosely defined, possibly incoherent concept such as ungrounded information lies at the foundation of existence? As such, steps of explanatory abstraction can only be justified if the relevant empirical observations cannot be explained *without* them, lest we conflate science and philosophy with meaningless language games. This is an important claim, so allow me to dwell on it a little longer before proceeding to the next section.

« 21 » It could be argued that the existence of perceptual illusions indicates that conscious perception entails *less* epistemic confidence than abstract formal systems. For instance, in the well-known "checker shadow" illusion created by the Perceptual Science Group of the Massachusetts Institute of Technology, two identically coloured squares – *A* and *B* – of a checkerboard are initially perceived to be of opposite colours because of the different contexts in which they are perceived (see Figure 1). Should we then declare that conscious perception is fundamentally unreliable? Well, notice that *it is also conscious perception that eventually dispels the illusion*: by looking at one of the squares as it is moved to the other's context, one sees that it indeed has the same colour as the other square. So even in the case of perceptual illusions, it is still direct, concrete experience that provides us with the epistemic confidence necessary to recognize the illusion for what it is.

« 22 » Further supporting the claim that abstracting away from direct experience implies a reduction in epistemic confidence is the anti-realist view in philosophy of science. According to it, abstract theoretical entities – such as subatomic particles, invisible fields and any other postulated entity that escapes our ability to *directly* perceive – are but "convenient fictions, designed to help predict the behaviour of things in the observable world" (Okasha 2002: 61; see also van Fraassen 1990). In other words, the best we can say about subatomic particles and other abstract entities is that the observable world behaves *as if* these abstract entities existed. This does not entail or imply that the entities exist as such, which we cannot be certain of either way (van Fraassen 1980). In this sense, explanatory abstraction again implies reduction in epistemic confidence, insofar as we do not know that subatomic particles and invisible fields exist with the same level of confidence that we do know that the world we consciously perceive exists.

Levels of explanatory abstraction

« 23 » Like ontic pancomputationalism, mainstream physicalism is no stranger to the epistemic cost of explanatory abstraction: the existence of a material world outside and independent of mind is a theoretical inference arising from *interpretation* of sense perceptions within a framework of complex thought, not an empirical observation. After all, what we call the world is available to us solely as "images" – defined here broadly, so as to include any sensory modality – on the screen of perception, which is itself mental. Even physicist Andrei Linde, one of the founders of the theory of cosmic inflation, acknowledged this in a 1998 talk titled "Universe, Life, Consciousness," delivered at the Center for Theology and the Natural Sciences (CTNS), Berkeley, California:[3]

> "Let us remember that our knowledge of the world begins not with matter but with perceptions. I know for sure that my pain exists, my 'green' exists, and my 'sweet' exists […] everything else is a theory. Later we find out that our perceptions obey some laws, which can be most conveniently formulated if we assume that there is some underlying reality beyond our perceptions. This model of material world obeying laws of physics is so successful that soon we forget about our starting point and say that matter is the only reality, and perceptions are only helpful for its description."

« 24 » Now, we know that mind is capable of autonomously generating the imagery we associate with matter: dreams and hallucinations, for instance, are often qualitatively indistinguishable from the so-called "real world." Therefore, the motivation for postulating an objective material world must go beyond the mere existence of this imagery. And indeed, what the notion of objective matter attempts to make sense of are certain *patterns and regularities observable in the imagery*, such as:

- The correlations between observed brain activity and reported inner life (see, e.g., Koch 2004 for a scientific take on the

3| The transcript of this talk is available at http://web.stanford.edu/~alinde/SpirQuest.doc

neural correlates of consciousness, but consider also the obvious effects of e.g., alcohol consumption and head trauma – both of which disrupt regular brain activity – on inner experience);
- The observation that we all seem to inhabit the same world; and
- The observation that the dynamics of this world unfold independently of our personal volition.

« 25 » After all, if mind is not a product of objective arrangements of matter, how can there be such tight correlations between brain activity and experience? If the world is not made of matter outside our individual minds, how can we all share the same world beyond ourselves? If the world is not independent of mind, why can we not change the laws of nature simply by imagining them to be different? Clearly, thus, the non-mental world posited by physicalism is largely an attempt to make sense of these three basic observations. As such, it is an *explanatory abstraction*, not itself an observation. We conceptually *imagine* that there is a non-mental world underlying our perceptions – and in some sense isomorphic to these perceptions – because doing so helps explain the basic observations (see Figure 2). Nonetheless, whatever ontological class is pointed to by this conceptual abstraction remains perforce epistemically inaccessible, a recognition already present in Immanuel Kant's *Critique of Pure Reason*.

« 26 » Explanatory abstraction does not stop at this first level. After imagining a non-mental world isomorphic to our perceptions, we are left with the task of explaining how and why this world behaves the way it does. Why do objects fall when dropped? Why does a piece of amber attract chaff when rubbed? How can certain metals magnetically attract other metals? To answer these questions, we must attribute to the material world certain properties that go beyond perceptual isomorphism. We say, for instance, that matter has the properties of mass, charge and spin. These properties constitute a second-level of explanatory abstraction beyond direct experience (see Figure 2 again).

« 27 » Naturally, there can be even more levels of explanatory abstraction involved. Superstring theory, for instance, attempts to explain the properties of matter through the particular modes of vibration of imagined hyper-dimensional strings (Greene 2003). But the two levels illustrated in Figure 2 are sufficient for the discussion that follows.

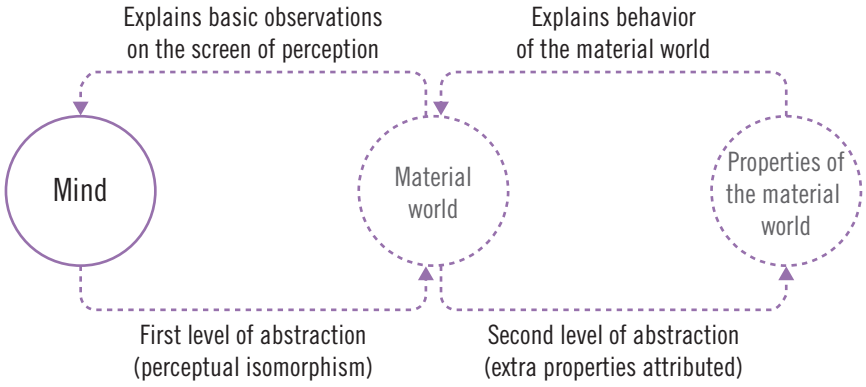


Figure 2 • Levels of explanatory abstraction. Grey and dotted parts represent steps of abstraction.

« 28 » The defining characteristic of explanation by abstraction is a progressive movement away from Edmund Husserl's (1970) "life-world," from the concreteness of direct experience. First, one posits a world devoid of qualities (Varela, Thompson & Rosch 1993) and, as such, devoid of concreteness too, for concreteness is a quality of experience. Then, one progressively loads this world with properties that entail no direct isomorphism to experience. For instance, we do not see electric charge or spin; we only see the behaviour of matter that these abstract properties supposedly explain, such as attraction and repulsion. Similarly, we do not feel mass; we only feel the weight and inertia of objects, which the property of having mass supposedly explains (Okasha 2002: 58–76).

« 29 » Because concreteness is the intuitive foundation of what we consider *real*, each step in this movement away from concreteness takes us farther from what we intuitively sense to be real (Merleau-Ponty 1964). One may then become lost in a forest of intellectually appealing but ultimately arbitrary conceptualizations. This, again, is the epistemic cost of explanation by abstraction.

Dispelling the mind-matter dichotomy

« 30 » By definition, the two members of a dichotomy are jointly exhaustive and mutually exclusive. Ontologically, this means that if one member is the case, then the other is necessarily *not* the case, and vice-versa. For instance, in the context of biological organisms, if life is *not* the case, then death is necessarily the case. In the context of a job application, if success is the case (i.e., the applicant gets the job), then failure is *not* the case. And so on. As such, a *single test* suffices to acquire knowledge about the ontological status of *both* members of a dichotomy. If I can perform a test to determine if a person is alive, then I will automatically know whether the person is dead, without having to test for death separately. If I can set a criterion for success, then that same criterion will automatically determine whether failure is the case, without my having to set a separate criterion for failure. And so on. I shall call this property of a dichotomy *epistemic symmetry*. When two concepts are epistemically symmetrical, knowledge of one implies knowledge of the other.

« 31 » Now notice that *epistemic symmetry can only hold for concepts residing in the same level of explanatory abstraction*. If they do not, then there necessarily is at least one extra inferential step necessary to know whether one of the concepts obtains. This breaks the symmetry, for then we cannot ac-

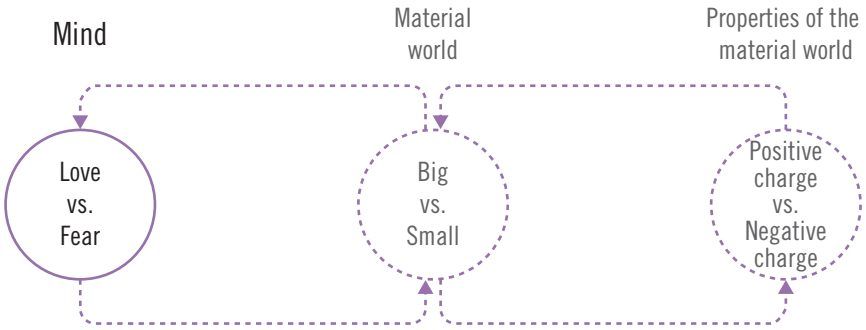


Figure 3 • Dichotomies in their respective levels of explanatory abstraction.

quire knowledge of the ontological status of both concepts with a single test.

« 32 » Here is an example: the presence of a negative feeling can be tested for directly through introspection – thus entailing no inferential steps – whereas testing for the presence of a positive electric charge requires an inference by observation of the associated behaviour of matter. Because of this need for an extra inferential step, knowing the negative feeling cannot imply knowledge of the positive electric charge. The negative feeling and the positive electric charge are not, therefore, epistemically symmetrical and cannot constitute a dichotomy.

« 33 » Conversely, positive and negative electric charges are both properties of matter, residing in the second level of explanatory abstraction illustrated in Figure 2. As such, they are epistemically symmetrical and can constitute a dichotomy. Indeed, every level of explanatory abstraction can encompass dichotomies. For instance, the size of material objects is isomorphic to perceptual qualities: we can subjectively test whether an object is big or small in relation to another object. As such, bigness and smallness both reside in the first level of explanatory abstraction and are epistemically symmetrical; they can constitute a dichotomy (see Figure 3).

« 34 » *But* – and here is the key point – *mind and matter do not reside in the same level of explanatory abstraction*. Mind – as defined in the Introduction – is the ground within which, and out of which, abstractions are made. Matter, in turn, is an abstraction *of* mind (see Figure 2 again). This breaks the epistemic symmetry between them: we do not know matter in the same way that we know mind, for – as cogently argued by Linde in the earlier quote – matter is an inference and mind a given. Consequently, although mind can encompass polar opposites – such as the feelings of love and fear in the context of a situation where someone feels passionate about a particular aspect of someone else (assuming that other passions, such as hate, which is arguably a form of fear, are particular instances of love or fear) – it cannot itself be the polar opposite of matter or matter's properties. It follows that we have no reason to conclude that reducing matter to mind is as challenging as reducing mind to matter, and there is thus no substantiation for a "hard problem of mind." Stronger still, insofar as what we call "matter" can be parsimoniously construed as phenomenal patterns of excitation of mind, matter is on an epistemic par with mind and can, in principle, be reduced to the latter, for both already reside in the same ontological domain. This move takes mind itself to be an ontological primitive and eliminates any conceivable "hard problem of mind," since mind now does not need to be reduced.

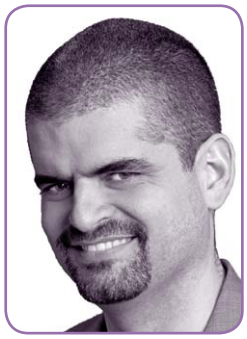
« 35 » The notion of a dichotomy between mind and matter arises from language. In order to speak of the substrate of experience we must give it a name, such as "mind" or "consciousness," thereby linguistically objectifying the subject. Then, we conflate language with what language attempts to describe, implicitly assuming that mind is an object just as matter allegedly is. We forget that there is no epistemic symmetry between the two.

« 36 » Indeed, because the concept of mind-independent matter, as an explanatory abstraction, arises *in mind*, as an "excitation" *of* mind, to say that mind and matter constitute a dichotomy is akin to saying that ripples and water constitute a dichotomy. Dichotomies can exist only between different kinds of ripples – say, those that flow mostly to the right versus those that flow mostly to the left – not between ripples and the substrate where they ripple. Mind is the substrate of the explanatory abstraction we call matter, so when we speak of a mind-matter dichotomy we fall into a fundamental "category mistake," as Ryle (2009) put it. *However, contrary to what Ryle suggests, it is matter that is the abstraction, not mind.*

« 37 » The notion that idealism and mainstream physicalism are mirror images of each other arises from a failure to grasp this point. Lucid contemplation of these ontologies shows that idealism attempts to reduce an explanatory abstraction (physically objective matter) to that which articulates and hosts the abstraction in the first place (mind). This is *prima facie* eminently reasonable. Mainstream physicalism, in turn, attempts to reduce mind to mind's own explanatory abstractions, an obvious paradox that constitutes the crux of the "hard problem."

« 38 » There would be no "hard problem" if one did not conflate explanatory abstractions with concrete ontological primitives, if one did not attempt to paradoxically reduce mind to abstractions *of* mind. The "hard problem" is not something empirically observed but the salient result of internal contradictions in a logico-conceptual schema; contradictions that I hope to have helped make explicit with the present article.

« 39 » Naturally, circumventing the "hard problem" in the way suggested above ultimately forces us to make do with mind alone as an ontological primitive and thereby entertain some form of idealism—more specifically, a form of idealism wherein mind is the experientially given ground of existence, whose manifestations comprise the concrete phenomenality you and I undergo in everyday life. And whereas idealism in the West has had its heyday in the eighteenth (e.g., Berkeley) and early nineteenth (e.g., Hegel) centuries, it is now enjoying renewed interest (Chalmers 2018) for



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having been updated and revitalized with compelling new formulations (e.g., Kastrup 2017a, 2017b; Yetter-Chappell 2018; as well as Fields et al. 2017, insofar as the latter can be construed as a form of idealism). These are sometimes proposed under new names, such as "cosmopsychism" (e.g., Shani 2015; Nagasawa & Wager 2016), which, as the name suggests, posits that the cosmos as a whole is essentially phenomenal. Even "radical constructivism" can be construed as a form of idealism, insofar as its claims are not merely epistemic, but ontic:

> "Radical constructivism […] develops a theory of knowledge in which knowledge does not reflect an 'objective' ontological reality, but *exclusively* an ordering and organization of a world *constituted by* our experience." (Glasersfeld 1984: 24, emphasis added)

Finally, the strongest objections usually leveraged against idealism have recently also been tackled (Kastrup 2017d).

« 40 » Having said all this, it should be noted that, in and of itself, the argument provided in this article, despite being supportive of idealism, does not necessarily *imply* idealism. I have focused on epistemic cost considerations and did not show whether or how idealism can account for all relevant empirical observations we make of nature. Indeed, an articulation of an idealist ontology is not within the scope of this article. But if it is demonstrated – as some of the papers cited above claim to do – that idealism *can* account for all empirical observations that mainstream physicalism allegedly accounts for, then epistemic cost considerations certainly tilt the balance in favour of idealism, due to the latter's lack of reliance on inflationary, epistemically unreliable, paradoxical abstractions. As such, the core claim of this essay is not so much the validity of idealism as that physically objective matter is a doubtful *cognitive construct*, in the strict constructivist sense: insofar as we believe to see matter outside and independent of mind when we look at the world around ourselves, we are conflating a rational-linguistic construction with what is empirically observed.

Conclusion

« 41 » The pervasive but unexamined assumption that mind and matter constitute a dichotomy is an error arising from language artifacts. Members of dichotomies must be epistemically symmetrical and, therefore, reside in the same level of abstraction. Physically objective matter – as an explanatory model – is an abstraction *of* mind. We do not *know* matter in the same way that we know mind, for matter is an inference and mind a given. This breaks the epistemic symmetry between the two and implies that mainstream physicalism and idealism cannot be mirror images of each other.

« 42 » Failure to recognize that different levels of epistemic confidence are intrinsic to different levels of explanatory abstraction lies at the root not only of the false mind-matter dichotomy, but also of attempts to make sense of the world through increasingly ungrounded explanatory abstractions. Lest we conflate science and philosophy with hollow language games, we must never lose sight of the difference between an abstract inference and a direct observation. Keeping this distinction in mind allows us to construct useful predictive models of nature's *behaviour* – which ultimately is what science is meant to do – without restrictive and ultimately fallacious inferences about what nature *is*. This, in turn, liberates us from thought artifacts such as the "hard problem of consciousness" and opens up whole new avenues for making sense of self and world.

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Open Peer Commentaries

on Bernardo Kastrup's "Conflating Abstraction with Empirical Observation: The False Mind-Matter Dichotomy"

Conflating the Concept with the Thing

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> Upshot • Kastrup's attempt to undermine the dichotomy between mind and matter is interesting but it leaves much to be desired. In particular, it suffers from the following three difficulties. First, it is predicated on a *misguided* working definition of dichotomy. Second, it *conflates* the concept of matter with the putative denotation of that concept. Lastly, it effectively *presupposes* the refutation of materialism, making it pointless to argue (as he does) that materialism is epistemically more costly than idealism.

« 1 » In this ambitious target article Bernardo Kastrup attempts to undermine the dichotomy between mind and matter and, correspondingly, between idealism and materialism. More specifically, his argument is meant to establish two major points. First, that idealism and materialism are not, epistemically speaking, on par since the latter, but not the former, necessitates abstractions that transcend all possible experience. Second, and consequently, that while materialism is burdened with a hard problem of consciousness there is no analogous "hard problem of matter" to encumber idealism. Ultimately, his conclusion is that reductive materialism is epistemically more costly than reductive idealism, making it the lesser alternative of the two.

« 2 » The thrust of Kastrup's argument reflects a familiar line of reasoning within metaphysical idealism – beginning with Berkeley and reaching its apex in Post-Kantian idealism – which strives to derive ontic conclusions from epistemic considerations. Much ink, both critical and supportive, was spent on debating the strengths and weaknesses of such epistemic arguments in favor of idealism (see, e.g., Ewing 1934: chap. II), and it is unfortunate that Kastrup shows little awareness of this relevant history. More regrettable, however, is the worry that although Kastrup is exploring a fascinating terrain, and although there is definitely something to be said in favor of linking the abstractions involved in the concept of matter to the difficulties facing materialism (a theme that was explored in detail by eminent philosophers such as Bergson and Whitehead), the logic of his argument is rife with lacunae. In what follows I focus on what I take to be the most serious of these. But first, a few more words about the gist of Kastrup's argument.

« 3 » At the heart of Kastrup's target article are the following two claims. First, that mind and matter are epistemically non-symmetrical and therefore that they do not constitute a dichotomous pair. Second, that mind is the concrete ground for the abstraction identified as "matter." In an important sense the second claim is the more basic of the two since it is this alleged non-symmetrical dependence of matter on the abstracting activities of mind that enables Kastrup to undermine the presumed dichotomy between mind and matter. He then goes on to argue that in the absence of such a dichotomy one cannot conclude that idealism suffers from a "hard problem of matter" parallel to the hard problem of consciousness afflicting orthodox materialism. Moreover, using the crucial assumption that matter is ultimately an abstraction of mind, Kastrup proceeds to argue that while mind cannot be reduced to matter (as per the hard problem of consciousness), matter is, in principle, reducible to mind. This brings him to the conclusion that materialism is epistemically more costly than idealism, tilting the balance in favor of the latter.

« 4 » Ironically, the most formidable difficulty in Kastrup's argument is a well-known problem in the history of philosophy, one which had had a devastating effect on the fate of idealism in 20th century philosophy. As mentioned, Kastrup's entire argument is founded upon the assertion that matter is an abstraction of mind. The justification for this controversial claim is based on the assumption that we arrive at the concept of an experience-transcending matter as a result of the abstracting faculties of consciousness. However, the obvious response to this type of argument is to insist that while the *concept* of matter is contingent upon the constructive activities of mind, in no way does this prove that the *denotation* of the concept – namely, matter itself, should it exist – is thereby contingent upon such acts. It seems a logical fallacy to conclude that matter itself is mind-dependent simply because such is the predicament of the concept of matter. This was the main point of a highly influential critique of idealism (in particular Berkeley's) due to George Edward Moore (1903) and Bertrand Russell (1974) and it is bewildering that Kastrup appears oblivious to the challenge.

« 5 » For this reason, nor is the analogy between the mind-matter relation and the

manner in which water relates to ripples on its surface an adequate one. For while ripples are patterns of, or constructions within, a water mass one cannot conclude that matter is a pattern of mind merely because such is the status of the *concept* of matter (or perhaps more precisely, of the process whereby such a concept is formed). To be clear, this is not an argument against the idea that matter might ultimately *be* an excitation of (some kind of) mind; rather, it simply goes to show that Kastrup's argument falls short of establishing the point. As a result, the argument also fails to show that there is a category mistake in supposing that mind and matter are dichotomous (more on this below).

« 6 » Worse still, because Kastrup's reasoning rests on the assumption that matter is nothing but an abstraction of mind, much of the rest of his argument is rendered obsolete. For if matter is ontologically grounded in mind then this constitutes a *refutation* of materialism (at any rate, of the materialism targeted by Kastrup), thereby making it pointless to proceed to argue that materialism is epistemically more costly than idealism. Evidently, it makes no sense to compare the cost of two rival positions if one of them is already presumed null and void.

« 7 » Returning now to the question of whether mind and matter (and consequently idealism and materialism) constitute a dichotomy, it should be pointed out that here, too, there are serious flaws in the argument. To begin with, even if Kastrup's conceptual analysis of dichotomy is taken for granted, his argument succeeds only in proving that there is an asymmetry between the cognitive processes responsible for our confidence in the metaphysical reality of mind and those responsible for our belief in the objective existence of matter: mind being a given, whereas the putative existence of matter is inferred. While this asymmetry of knowledge justification has been a staple of modern philosophy ever since Descartes, it does little to show that the *metaphysical* dichotomy between mind and matter is unsound (clearly, Descartes himself did not think that there was any inconsistency on his part in endorsing both of these tenets and in making them pillars of his system).

« 8 » But Kastrup's analysis of dichotomy is highly tendentious. The problem consists in his claim that the members of a dichotomous pair <*x*, *y*> are mutually exclusive and jointly exhaustive. For whereas mutual exclusiveness is undeniable the condition of joint exhaustiveness is untenable. Clearly, while some dichotomies are exhaustive, e.g., <dead, live> or <odd, even>, many others are not. "Black" and "white," for example, or "young" and "old," or "beautiful" and "ugly," are dichotomous terms not because there are no other logical options around but because they constitute polar opposites, namely, ostensible ends of a spectrum of differences. In particular, many philosophical dichotomies are emphatically non-exhaustive. To mention but one notable example, realism and nominalism form a dichotomous pair with respect to the problem of universals, but they are not jointly exhaustive: one could be an agnostic (professing no knowledge as to whether there are universals), or a nihilist (who holds that nothing exists), or a trope theorist (denying universals but affirming the existence of abstract particulars).

« 9 » The <idealism, materialism> dichotomy constitutes a similar case. The pair is dichotomous not because it exhausts the conceptual terrain (other options include dualism, neutral monism, double aspect theory, etc.) but because its members are, in a relevant sense, hyper-contrastive. Likewise, the pair <mind, matter> is dichotomous in spite of there being other options possible (e.g., a neutral substance, or an ontology consisting of wholly abstract entities). Yet, if the members of a dichotomous pair need not be, and often are not, jointly exhaustive, then Kastrup's single yes-or-no test – his criterion for a bona fide dichotomy – is untenable: one cannot infer ugly from non-beautiful, matter from non-mind, idealism from non-materialism, and so on. And since this criterion is crucial for his definition of epistemic symmetry, which, in turn, is decisive for the rest of the argument, the entire edifice suffers.

« 10 » Nor is Kastrup entitled to conclude that the presumed dichotomy between mind and matter is the only reason to consider the reduction of matter to mind to be as challenging as the reduction of mind to matter. Many thinkers are deeply skeptical regarding the ability of a strictly idealist metaphysics to account for certain cardinal features of physical reality such as causation or the nature of space. They may be wrong (I lean in the same direction as Kastrup on this point) but such conviction is surely a reason to believe in a so-called hard problem of matter.

« 11 » Finally, equally questionable is Kastrup's swiping contention that steps of explanatory abstraction can only be justified if the relevant empirical observations cannot be explained otherwise. While I sympathize with Kastrup's respect for concrete experience as the ground of all knowledge, he seems to ignore the notion that the simplicity of a theory is measured not only by the number of types of basic entities it postulates but also by the efficiency with which it derives the existence of *non*-basic entities. Often there is a trade-off between these two methodological virtues. In formal systems, for example, one can choose between relying on axioms or on added rules of inference: the fewer rules there are, the simpler the system's base, but the derivation of theorems becomes more complicated. And while in formal systems the choice between these two competing dimensions of simplicity is merely pragmatic, when it comes to scientific and philosophical issues it can give rise to legitimate theoretical disagreements. Suppose, as some Millian phenomenalists argue (see Pelczar 2015), that it is possible, in principle, to reduce all of reality to human-level experience. Does this undermine the status of related metaphysical positions such as panpsychism, or cosmic idealism, whose articulation necessitates the irreducibility of other types of experiencing beings? The answer, of course, is "not necessarily," since what such phenomenalism may gain by avoiding certain abstractions might nevertheless be outweighed by the convoluted manner in which it strives to derive the familiar world around us. Analogously, the mere possibility of one's being able to construct an ontology free of the theoretical abstraction of an experience-independent matter does not, in itself, disprove materialism: the alternatives must be measured with respect to various dimensions of simplicity, plausibility, and overall explanatory power. The upshot, then, is that considerations of explanatory power are more complicated than Kastrup imagines, and that they may legitimate theoretical abstractions even if the latter

are not absolutely necessary from a strictly logical point of view.

« 12 » In conclusion, Kastrup deserves some praise for braving the attempt to revive the tradition of deriving metaphysical idealism from epistemological idealism. As I understand it, the constructivist approach in science and philosophy is committed to *epistemological idealism*, namely, to the view that our knowledge of mind-independent reality is suffused with the constructive activities of our own minds and, therefore, that all knowledge involves self-knowledge (see Guyer & Horstmann 2018). However, more often than not, constructivists are reluctant to take an explicit extra step in the direction of *metaphysical idealism*, viz. the contention that mind, or consciousness, constitutes the ultimate make-up of existence. If Kastrup's argument is sound, it follows that the only form of metaphysical realism (broadly conceived as the doctrine that there exists an external reality independent of human observers) consistent with epistemological idealism is metaphysical idealism. As such, the conclusion is of relevance to constructivists insofar as it shows that metaphysical idealism is the only form of metaphysical realism compatible with the constructivist approach.[1] Unfortunately, better arguments are needed in order to substantiate the inference from epistemological to metaphysical idealism.

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1| Though, of course, many constructivists may still prefer not to engage with *any* form of metaphysics. I thank the journal's editor for helping me clarify this point as well as the entire last paragraph of the commentary.

Mind Is an Abstraction

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> Upshot • While instantaneous phenomenal consciousness may be (and I would argue should be) regarded as fundamental, as soon as consciousness is extended in time and memory is invoked, the resulting notion of "mind" is as abstract as that of "matter."

« 1 » Bernardo Kastrup mounts a contemporary version of an argument for ontological idealism familiar since Descartes: since matter can only be known via mind, it cannot be rational to attribute ontological primacy to matter. Mind, on the other hand, is known "directly." Filling in the tacit premise that being known directly is at least a necessary condition for ontological primacy, the conclusion that mind is at least a better candidate for ontological primacy follows.

« 2 » The premise that "direct" knowledge of X is necessary for, or even evidence for, X being ontologically primary can be questioned, and I will question it later. First, however, let us ask about mind and matter. Kastrup does not define "matter" beyond a few examples (e.g., tables and chairs in §1) and emphasizing that it is "physically objective" (§6). A traditional definition might be "that which occupies space and has mass." "Matter" on this definition being ontologically primary is difficult to reconcile with contemporary physics, and what, if anything, "physically objective" means has been unclear since the 1920s. The relevance of physics to attributions of ontological primacy can, however, also be questioned. Kastrup clearly questions it; his intuition pump against "ontic pancomputationalism" is aimed squarely at those who would find nonlocality, acausality, superdeterminism or emergent spacetime outlandish. There are doubtless many philosophers, scientists and members of the general public who subscribe to the far more intuitive notions that Kastrup comprehends under "mainstream physicalism," and Kastrup's point that the "matter" or "physical objects" to which they appeal are abstractions is difficult to argue with.

Is mind a "given"?

« 3 » Kastrup explicitly defines "mind" as "phenomenal consciousness" with the clarifications that "(mind) entails only the presence of phenomenal properties, in that it is defined as the substrate or ground of experience" (§9) and "experience can be coherently regarded as an excitation of mind" (§10). Kastrup's argument for an epistemological asymmetry between mind and matter depends on "mind" so defined being not an abstraction, or at any rate significantly less of an abstraction than tables or chairs.

« 4 » Interestingly, Kastrup gives no explicit argument that either "phenomenal consciousness" or "the substrate or ground of experience" are not abstractions. He states that mind is "a given" (§34), pointing to an argument of Andrei Linde quoted in §23. Linde is not, however, talking about mind (as Kastrup defines it) in the quoted passage; he is talking about perception. Perceptions, Linde argues, are given; "everything else is a theory" (§23). The examples Linde lists – pain, green and sweet – are, however, not strictly speaking perceptions; they are rather raw qualia. Perceptions are complex experiences that join such raw qualia with other raw qualia of a distinct, "epistemic" class, those involved in "source monitoring" (e.g., Griffin & Fletcher 2017), i.e., distinguishing perceptions from imaginations, intuitions or memories, in assigning levels of what Kastrup calls "concreteness" (§9), assigning subjective probabilities given background knowledge, and so forth. Such epistemic qualia are subject to their own illusions, which can be recognized from a third-person perspective but not corrected from a first-person perspective; the "more real than real" experiences accompanying insular-cortex seizures are compelling examples (e.g., Picard 2013).

« 5 » The signal failure of materialist, physicalist, computational, or to date any other approaches to explain the presence of raw qualia in terms of anything else (e.g., Chalmers 1996; Dietrich 2015) makes it reasonable, at any rate, to take raw qualia as given. Raw qualia occur, and though much can be said about the correlates of their occurrence, their occurrence itself seems inexplicable. But raw qualia are not mind for Kastrup, they are "excitations of mind." They are, moreover, by their very nature instanta-

neous and ever-changing. We all know what pain is, but separating a particular raw quale of pain – *this* pain – out from the flow of experience is difficult at best.

Experience and its "ground"

« 6 » Mind is, for Kastrup, both the "ground" of experience and "the ground within which, and out of which, abstractions are made" (§34). This "ground" is, crucially, extended in time, "for experience entails different phenomenal states that can be qualitatively discerned from one another" (§16). It must also be extended in *capacity*: it must be able to "hold" phenomenal states to be discerned from one another and their discerned differences, and phenomenal states to be abstracted and their recognized abstraction(s). To perform either of these operations, moreover, it must have *inferential capabilities* that act on experiences to generate other experiences, e.g., an experienced difference between two phenomenal states, or the experienced conceptualization of an abstraction.

« 7 » What, however, is this "time" that allows different phenomenal states to be discerned? Once can "experience" time, e.g., while waiting for a traffic light, but what one is experiencing in such cases is itself a difference between phenomenal states (e.g., Allman et al. 2014). Experiencing this difference requires memory, an ability to "hold" a phenomenal state – or an abstracted representation of a phenomenal state – for some period of time so that it can be compared with a later phenomenal state. But what is "later"? Appealing to an external clock is appealing to an external system, and must be disallowed in the present context. From a phenomenal perspective, a "memory" is an experience that includes a particular epistemic quale, a "marker" that indicates that the rest of the experience happened in the "past," perhaps accompanied by other qualia indicating how "far" in the "past" it occurred. The "past" or "external (clock) time" from this perspective are explanatory abstractions, inferences from the experience of such markers.

« 8 » These notions of "markers" for "memory" or "duration" are, however, themselves abstractions. The idea that mind has the "capacity" to "hold" multiple experiences – much less "representations" of experiences – is an abstraction. "Inferential capabilities" are abstractions. "Excitation" and "ground" are abstractions; indeed, the latter in its present usage is a philosophical term of art understandable only as metaphor. These abstractions – the philosophical usage of "ground" aside – are the stock in trade of abstract, computational models of "mind" as a processor of the information contained in experiences (e.g., Fields et al. 2018).

« 9 » Kastrup suggests that abstractions such as these may be artifacts: "in order to speak of the substrate of experience we must give it a name, such as 'mind' or 'consciousness,' thereby linguistically objectifying the subject" (§35). It is, however, the very notion of a *substrate* that is the key abstraction here. We are given raw qualia – instantaneous experiences. Among these is a sense of coherence. It is this coherence that we objectify, thinking it to be observer-independent, meaningful, informative coherence. We seek to explain it, and postulate a "ground" with a set of abstract properties such as duration, capacity, inferential power and memory. These must be *objective* properties of mind if they are to bear any explanatory weight. Thus, we convince ourselves that we objectively have minds, not just fleeting experiences. This self-convincing seems automatic; Philippe Rochat (2012) argues that it is innate.

The grin without the cat?

« 10 » Kastrup's primary objection to ontic pancomputationalism is precisely that it rejects the abstraction of a "ground" for information: "To say that information exists in and of itself […] is a grammatically valid statement devoid of any semantic value" (§16). Hence an obvious question: Is any claim that instantaneous experiences are what is fundamentally given, and exist in and of themselves, similarly "devoid of any semantic value"? (Q1) For the claims seem entirely parallel. The slogan "information is physical" refers to information that has been recorded in a thermodynamically irreversible way (Landauer 1999); it refers to a memory that can be counted on to faithfully preserve its content. That content is preserved is, however, inevitably just an assumption: that the content is experienced now is no guarantee that it was ever experienced previously, and indeed no guarantee that a past even exists. Memory and time are not given; they are explanatory abstractions.

« 11 » The idea that information itself is the fundamental given, at least among physicists, has its origins with John Archibald Wheeler (1983: 195): "what we call 'reality' […] consists of an elaborate papier-mâché construction of imagination and theory fitted in between a few iron posts of observation." But as Wheeler emphasizes, the "iron posts" are only iron, and indeed only posts, given another abstraction from experience: that there are other observers and that communication between observers is possible. Other observers are, effectively, memories into which records of observations can be encoded and from which records of observations can be obtained. They are memories of a particular sort: a kind that can also make their own observations that may confirm or disconfirm your own.

« 12 » Kastrup also objects to the ambiguity of the term "information," claiming that as it is merely a "*human concept*," its ambiguity renders any claims for an ontological status of information "strictly meaningless" (§19). This is clearly question-begging, as any proponent of ontic information would claim that information is a "natural entity," indeed the fundamental natural entity. But, again, the parallel between information and instantaneous experience is striking. The nature of instantaneous experience is hard to pin down, as 3,000 years of recorded philosophy attest. Hence the question: Is instantaneous experience itself a mere abstraction, a "human concept" for which any claim to ontological status is strictly meaningless? (Q2)

Is ontology possible?

« 13 » All theories have ontologies, relational networks (in some cases hierarchical) specifying what the theory is about. The "entities" represented may be events (e.g., observations) or processes; they need not be "things." Such ontologies can be viewed as purely pragmatic.

« 14 » What is of concern here, however, is not the pragmatic ontology of some theory, not even that of quantum cosmology. It is *fundamental* ontology. But this concern rests on an assumption: that fundamental ontology is possible, that there are answers to the questions of whether mind derives

from matter, matter from mind, or both from something else. "Answer" here means an authoritative answer, an in-principle, objective, observer/theorist-independent, completely trustworthy answer. The ontologist's quest is, as Kastrup puts it, for an answer that "liberates us," that allows "making sense of self and world" (§42).

« 15 » Perhaps, however, this is all a chimera. Matter, mind, memory, spacetime, information, inferences, knowledge … all are abstractions. Once the cat has been deconstructed, even the grin appears suspect.

« 16 » Perhaps, in other words, it is this quest for an authoritative answer that should be rejected. Perhaps self and world do not make sense, at least not in combination (Dietrich & Fields 2015). A dialetheic world – one in which some contradictions are true as well as false (Priest 1994) – permits limited and pragmatic theories, but disallows any universal and fundamental ontology.

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Concepts, Intuitions, and Hypotheses

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> Upshot • In this comment I formulate two questions. The first concerns the role and nature of concepts and intuitions; the second is about the status of the "existence of objective matter" as a "hypothesis" or "explanatory model."

« 1 » Bernardo Kastrup's ultimate goal is to show that – ontologically speaking – idealism is more parsimonious than physicalism, since the latter involves more abstractions and less direct observation. As an example of the "epistemic cost of substituting explanatory abstractions for empirical observation" (§7) he alludes to ontic pancomputationalism. According to this view, neither mind nor matter constitutes the fundamental bits of a mind-independent reality but "ungrounded information." Abstract mathematical entities and their relations are the basic building blocks of everything, not entities like atoms, molecules, qualia, or experiences.

« 2 » Kastrup criticizes this view on the ground that he does not agree with the concept of "information" employed by pancomputationalists. To support his claim he cites Luciano Floridi, who admits that "information" may be an elusive concept. Against this, Kastrup appeals to another understanding of "information" which – as he assumes – expresses "[o]ur *intuitive understanding* of the concept" (§16, emphasis added) and he implies that the meaning of his understanding is clear, i.e., without any vagueness or elusiveness. Since "information" is a concept invented by humans, it is either possible to clearly define what it means, or the concept is not ontologically meaningful at all.

« 3 » I want to seize on two conditions on which this claim rests: first, that concepts necessarily need to be clear and distinct in order to have an ontological meaning and, second, that the intuitiveness of a concept is a reason for or against employing it. First, it seems dubious to say that we must be able to clearly define what a concept means for it to be meaningful. Since, as Kastrup agrees, concepts are *human* concepts, we have only our human, finite set of experiences to define them. What follows from this observation, as Friedrich Waismann puts it, is that

> "we can never exclude altogether the possibility of some unforeseen situation arising in which we shall have to modify our definition. Try as we may, no concept is limited in such a way that there is no room for any doubt." (Waismann 1945: 123)

This is why our concepts have what Waismann called an "open texture."[1] Note that open texture is not simply vagueness. The point is not that we are not able to determine, say, large quantities because of our perceptual limitations. Rather, open texture is more fundamental and concerns all sorts of concepts: empirical, conventional and logical. In none of these contexts can we, even in principle, foresee all possible further uses of our concepts, so we can never clearly and unambiguously define them. Changes in our definitions are always possible, and sometimes they may even be very fundamental ones. An example is the use of "subjective" and "objective" in the Middle Ages, which, back then, meant the exact opposite of our use of these terms today (Daston & Galison 2007: 29). Why should "information" be immune to this possibility of changing its meaning? And does this make this concept ultimately meaningless?

« 4 » Our situation is not that either there is a clear definition available, or the concept is "ontologically meaningless." Ever since the collapse of the project of creating an ideal language, philosophers have been amenable to accepting that our concepts – in philosophy, in science as well as in everyday life – are defined well enough for the given purposes; if not, we refine them by adding further requirements, or by altering or deleting older ones. The criterion for being defined "well enough" is that the relevant peer group accepts the definition as sufficiently exact. More cannot be achieved since all our concepts are open textured. And they are open textured because we are finite beings who cannot foresee the future. If this impossibility of providing clearly specified definitions would make the concept of information ontologically meaningless, then every concept is ontologically meaningless.

« 5 » This understanding of concepts and how they function links back to the second condition I find problematic in Kastrup's line of thought. As I have presented my concern so far, Kastrup could reply by saying that the pancomputationalists' concept of information is wrong since it is counterintuitive. Our intuitive understanding of "information" is expressed in saying that information is the state of a system, that is, dependent on there being a system in the first place (§16). I will leave aside the question of how it is possible that intuitions – something like educated linguistic guesses – are

1| Of course, this is the same idea as expressed in Ludwig Wittgenstein's "language games" but here I prefer Waismann's way of putting it since it is much more concise.

philosophically relevant at all; for the sake of argument, I assume that they are. But, and this is important, who is the relevant group alluded to in Kastrup's formulation? It surely is not the intuition pancomputationalists entertain. Is it the intuition constructivists have, or philosophers other than pancomputationalists, or do laypeople entertain it too? To be a strong enough assumption in an argument, I guess it must mean something like "our common-sense understanding."

« 6 » But the philosophical value of alluding to our common-sense understanding of "information" in his argument remains dubious. Does Kastrup think that his way of stating that, say, "the existence of objective matter is just a hypothesis" is intuitive to laypeople and philosophers alike? If he does, I beg to differ. The mind/matter dichotomy he is concerned with is not a distinction that plays a role in laypeople's lives. It poses problems only for those few people who are trained in a certain philosophical tradition.[2] And even if I am wrong about this point, insisting on a common-sense status quo expressed by the majority is very unlikely to give rise to conceptual change and philosophical invention. There are two reasons for this. The first is conceptual; to say that "I insist on the status quo" implies "I do not want things to change." The second is historical; so far only very few philosophers have been impressed by any common-sense status quo. Since Kastrup's argument is a prime example of philosophical invention and creativity, such insistence on the "intuitive status quo" cannot be in his interest.

« 7 » Let us not forget that the idea of the dichotomy between mind and matter, the very dichotomy Kastrup wants to dissolve, began to emerge with René Descartes and his conceptual work on the dualism between *res cogitans* and *res extensa*. Descartes's description of this distinction was not intuitive to most of his contemporaries, and it needed much further conceptual work to arrive at the concepts of "mind" and "matter" we deem to be authorized and intuitive today. At the time of Descartes these concepts could not be clearly defined, otherwise the philosophical work of modifying and altering them would have come to an end. Even though Descartes's conceptualizations were not clear and distinct, I doubt that Kastrup would say that Descartes's efforts were "too ambiguous to be ontologically meaningful" (§19).

« 8 » The upshot of these considerations is the following. Kastrup writes that

> "if one is convinced that ontic pancomputationalism is absurd in comparison to physicalism, then – and on the same basis – one has reason to question the plausibility of mainstream physicalism in comparison to idealism." (§7)

But as I have argued, just because a philosophical view makes new and creative use of a concept it does not make it necessarily absurd. Therefore, I presented a reason to be *not* convinced that ontic pancomputationalism is absurd, which means that also the claim that mainstream physicalism is absurd in comparison to idealism seems less plausible.

« 9 » Now I turn to a second question sparked by Kastrup's article. A main premise for his argument is that physically objective matter, matter outside and independent of mind, is a "hypothesis" (§6).[3] The main characteristic of a hypothesis, as it is standardly construed in philosophy of science, is that for some statement to be a hypothesis, we must be able to tell, in principle, what would count as evidence for or against the hypothesis. Broadly construed, the emphasis depends on one's being an adherent of verificationism or falsificationism.

« 10 » From the perspective of verificationism, the hypothesis that needs to be verified is: "there is matter outside and independent of mind." By definition no constructivist is able to provide verification for this claim. If we could verify that there are objects outside and independent of our minds, constructivism would become superfluous. So, this is not a viable route for the constructivist.

« 11 » Therefore, we tend to falsificationism. As far as I can see, constructivists have three options. First, the hypothesis may fail because of reality. But what could lead to the assumption that our hypothesis failed? Presumably, it would require nothing less than an (evil or benevolent) demon scenario. So, imagine we are deceived in thinking that there is matter but there are only minds that are misled by the demon. But how can we find out about this being the case? Since the assumption of there being matter is so fundamental to all our thoughts and actions, it is difficult to imagine what we could accept as a method of falsifying the alleged hypothesis. As far as I can imagine that in any given case, I would rather question the method used for falsification than give up the assumption that matter exists. Even the most straightforward way I can think of – a thunderous, all-embracing voice in my head declaring that it is the demon bewitching me – would rather lead me to doubt my sanity than give up the assumption of there being matter outside of my mind. But, if this is the case, falsification of the hypothesis fails.

« 12 » Regarding the second option, constructivists could argue that the hypothesis is refuted by factors inherently built into our conceptual system. The prime example of such a case is Gottlieb Frege's epiphany after it had been pointed to him that his theory falls prey to Bertrand Russell's paradox. But this is not what Kastrup attempted to show. Rather, he tried to convince us that the claim that "there is objective matter" resides on a higher level of abstraction than that of the claim that "there are qualia." Consequently, as it stands, we are not rationally forced by system-inherent factors to repudiate the alleged hypothesis. Maybe a falsification along these lines is possible, but Kastrup has not provided it (and this would take quite some philosophical work).

« 13 » Third, constructivists could argue that the hypothesis is falsified by being superfluous. But, as it stands, this is not a case of falsification but of refusing to answer the question. I agree that we could discard the possibility of matter outside and independent of mind from the outset, but this means that we are not taking it seriously: we would dismiss it from the perspective of a higher level of abstraction, as it were.

« 14 » Therefore, as far as I can see, the assumption that "there is physically objective matter outside and independent of my

2| I focus here on the skeptic-philosophical dichotomy rather than on, e.g., the dichotomy in a religious context that distinguishes "soul" and "lived body."

3| Or, as Kastrup also puts it, as an "explanatory model" (§41). However, since Kastrup seems to consider them synonymous, I will only use "hypothesis."

mind" is not a hypothesis but the fundament on which most of our hypotheses gain their meaning.

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Epistemology, Metaphysics and the Preconditions of Science

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> Upshot • Based on epistemological considerations, the author of the target article proposes an idealist solution to the mind-body problem. But is such a transition from epistemology to ontology justified? This commentary briefly asks about the historical motives underlying the dichotomy of mind/matter and argues that science requires metaphysical commitments. This gets illustrated with respect to some of the material mentioned at the end of the target article.

« 1 » In his target article, Bernardo Kastrup argues that the dichotomy between "mind" and "matter" is ill-conceived. Conventionally it is assumed that mind (i.e., phenomenal consciousness as the author understands it) should eventually be explained in terms of matter. This finds its expression today, e.g., in David Chalmer's (1995) notion of the "hard problem of consciousness." Kastrup argues that approaches leading to the hard problem are built on a wrong premise: "mind" is not the thing that needs explanation. It is the other way around, and "matter" is an abstraction that has been posited to explain the concrete (conscious) experiences you and I have. The hard problem is not a problem for science but a puzzle stemming from metaphysical confusion. It is thus only fair to adopt a new metaphysical view that respects this asymmetry and avoids similar pitfalls. Adopting a new metaphysical view might create new such puzzles, but it might also lead to new interesting science. In this commentary, I am mainly interested in the metaphysical alternative and how it could be spelled out in terms of an operational framework.

« 2 » The thrust of Kastrup's argument revolves around epistemic asymmetry, i.e., the claim that things normally subsumed under the heading of "matter" (particles, fields, substances, brains…) epistemologically do not stand on the same footing as conscious experiences. The former are nothing but abstractions from the latter and "do not reside in the same level of explanatory abstraction" (§34). The mind/matter dichotomy is ultimately an artifact of language (mis-)use, and thus the attempts of "substance-" or "property dualism" are problematic from the very beginning. Physicalist attempts do not fare much better, though, because they approach the issue from the wrong side: instead of acknowledging the role of the abstract ("matter") to explain the regularities encountered by the concrete (experience), physicalists try to explain the basis of abstraction itself – using abstractions. Both the dualist and the physicalist project seem thus quite impossible when accepting Kastrup's arguments.

« 3 » It is interesting to speculate on how the mind/matter-dichotomy became an "ingrained cultural intuition" (§4) in the first place. As far as I see it, intuitions do not arise spontaneously, but have a long history. In the case of the mind/matter dichotomy, things probably go back to the works of René Descartes and Galileo Galilei, but, opposed to what conventional wisdom tells us, it was not just an "intellectual mistake" to posit "mind" and "matter" as two distinct substances but an important conceptual precondition to start the scientific project: only if the ghost is expelled from the machine, does it make sense to speculate about "objective" regularities governing the clockwork-world. Of course, our knowledge has increased since then, and it might be time to go back and revise some of the original assumptions. We now know that the world is not clockwork, and we now know that expelling experience from it leads to a dilemma. Still, the dichotomy might have had its merits. The lesson to learn (if only history had its students) is that changing one's (metaphysical) assumptions is sometimes necessary in order to start doing science. Kastrup's article can also be read as an invocation to do exactly this, and to start taking consciousness seriously again.

« 4 » It is one thing to argue against epistemological prejudices. It is another to draw (positive) ontological conclusions. It is here that I am somewhat unconvinced by the solution the author suggests, i.e., idealism. I am very sympathetic to the idea that one might just adopt one's favored philosophy and see how far it takes one. At the same time, I do not see the necessity to espouse the idealist standpoint based solely on insights into mental economy (§29) and epistemic asymmetry (§§30–35). Granted, idealism seems a natural starting point given the arguments presented in the article. But is there any reason why idealism is the only metaphysical view that acknowledges this epistemic asymmetry? For example, Alfred North Whitehead's cosmology, put forth in *Process and Reality* (Whitehead 1978), explicitly rejects the tendency of ontological reification and abstraction. And speaking of mental economy: a theory should be as simple as possible but not simpler ("Einstein's razor").

« 5 » Kastrup's suggestions raise the question of what the author exactly conceives of as "idealism," in particular because he mentions affinities to constructivist approaches (§39). As one of the authors cited, I could say something about our own work, which was recently published in this journal (Fields et al. 2017). We have presented a model according to which objects (such as the material "abstractions" Kastrup deals with in his article) arise as icons on an interface between interacting, experiencing agents. While we do acknowledge the primacy of experience of such agents in our model (this is our revised metaphysical assumption), I am not sure to what extent one should classify our work as idealism in a strong sense. A crucial task when thinking about the relation of consciousness and the world is to develop an operational framework that shows how the process of "abstraction" might work. This is what we have outlined in our article (though we did not appeal to "abstraction" explicitly). Onto-

logically, however, this might be compatible with many metaphysical views, such as (perhaps) idealism, conscious realism (Hoffman 2008), but also forms of aspectual monism (Atmanspacher 2014) or processual philosophies (Prentner 2018).

« 6 » Ultimately, it might even be the case (and this is what I suspect) that different metaphysical views will collapse into a new philosophy. This is not to say that the above views could all be unified, but that a novel account will simultaneously satisfy some of their basic tenets – the primacy of experience, the complementarity of perspectives, a metaphysics of "events over substances." One could conjecture that this must be in place in order to forge a new science of consciousness.

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Is Speaking of Mind or Matter a Matter of Choice?

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> Upshot • This commentary is centered around one issue: it describes a possibility that, contrary to what the target article brings, not only the notion of matter, but also the notion of mind is a theoretical postulate devoted to unpacking our complex, concrete and pre-conceptual embodiment in the world. Therefore, the commentary suggests that there may be no difference in abstraction between the two notions at stake.

« 1 » The main point rolled out in Bernardo Kastrup's target article is that the standard mind/matter division cannot function as a plausible conceptual dichotomy because these two categories are not epistemically symmetrical. The latter means that we have direct access to what the term "mind" refers to, while the reference of the term "matter" results from abstraction. Kastrup aligns with Berkeley when he writes that

> "physically objective matter is not empirically observable, but a conceptual explanatory device abstracted from the patterns and regularities of empirical observations – that is, an explanatory abstraction." (§6)

Therefore, aiming at reduction of *mind* to *matter* is completely misguided as it would mean "substituting explanatory abstraction for empirical observation" (§7). This is due to the fact that mind

> "is the ground within which, and out of which, abstractions are made. Matter, in turn, is an abstraction *of* mind […]. This breaks the epistemic symmetry between them: we do not know matter in the same way that we know mind, for […] matter is an inference and mind a given." (§34).

The term "given" constitutes the key issue that this commentary is focused on.

« 2 » In old-school epistemology there is an approach called foundationalism. In short, it holds that if a belief is supposed to count as knowledge, its justification cannot consist of other beliefs only, establishing a coherent system, but must rest on something that is not a belief, but still has epistemic significance. That is, it must rest on an ultimate and firm epistemic ground, so to speak (see, e.g., Audi 2003). Empirical inputs constitute the only family of entities satisfying this description according to the tradition associated with, broadly construed, Locke or Hume while Descartes and his followers would insist that specific innate ideas or concepts play this role. Someone opposing at least empiricist foundationalism can endorse, for example, Henri Poincaré's (1958) conventionalism or the more radical position taken by Kazimierz Ajdukiewicz (1934a). A conventionalist would argue that empirical data is never sufficient to accept or reject a given claim. For acceptance or rejection must take place within a given conceptual apparatus, and this means that there are always some extra-empirical, conventional factors in play. So, according to the conventionalist, we can never reach the ultimate goal set forward by the foundationalist.

« 3 » In my reading, Kastrup's critique of the *mind/matter* dichotomy takes a foundationalist route of some sort by stipulating that our reference to *mind* is direct, i.e., not mediated by abstractions and theoretical fictions. On this view, when I use the word "mind," I am in touch with the *concreteness of my being in the world*, as it were. Unfortunately, this route seems to be in conflict with the somewhat constructivist spirit also observable in the target article. This is because constructivists are more likely to choose the conventionalist route not only with respect to *matter*, but also with respect to *mind*. This is not the place to roll out this argument in greater detail, but here is the gist. Suppose that Maurice Merleau-Ponty, cited in the target article, is right and we can speak of the "felt presence of conscious perception" (§20; see Merleau-Ponty 1964). This means that there is a fundamental, non-reducible way of attentive and embodied being in the world, which is characteristic of all minded creatures. This is not, however, a purely spiritual, neither a purely "phenomenal" (meaning the *what it is like* quality) experience, as the word "embodied" clearly indicates, but an experience attributable to a *living, acting and self-reflecting body*, which can be thought of as a whole, "environmentally plugged-in" (Alva Noë's 2009 term) subject. Now, from the standpoint of this embodied concreteness of my being in the world, the *concept* of mind also comes up as a result of theoretical purification – *mind* is not an entity I actually have to do with; speaking of my mind can also be regarded as ensuing from a *decision* as to which vocabulary to use in order to unpack my somewhat multidimensional concrete embodiment. So, speaking of mind is also a *choice* – a conventionalist would argue – and as a choice it is always one of several options. Therefore, insofar as the living body is concerned, a different choice could be to articulate being in the world in terms of matter or material aspect, thought of not necessarily the way materialists would insist on, but, still, as *conceptually distinct* from the mind-related aspect. To sum up, *mindedness* and *materiality* could be approached as two aspects conceptually distinguished from the first-person perspective. They pro-

vide equally abstract grounds for further abstractions and further theorizing (as well as equally concrete grounds since both of these qualities have degrees). From this angle, there is no a priori rationale to prioritize *mind* over *matter* if both are theoretical postulates unpacking my concrete being in the world: one "purifies" the mental and intellectual aspect while the other one does this with the bodily aspect.

« 4 » I shall now articulate my point in a different stylization. All our conceptual schemata hang, as it were, on a scaffolding consisting of the most fundamental, and at the same time most abstract concepts and conceptual pairs. They are studied in ontology and metaphysics.[1] The mentioned group of concepts includes categories such as *object*, *process*, *relation*, and *situation*. The mentioned pairs include: *one–many*, *simple–complex*, *primary–secondary*, *matter–form*, *internal–external* (or *in–out*), *potential–actual*, *part–whole*, *object–property*, and *mediate–immediate*. Such fundamental conceptual pairs do not have to be dichotomies, and the paired concepts do not have to reside on the same levels of abstraction. Take the *simple–complex* pair, pivotal to traditional metaphysicians such as Baruch Spinoza or Gottfried Wilhelm Leibniz. All entities we encounter are complex, therefore while the idea of complexity abstracts from concretes, the notion of simple entity is abstracted from the notion of complexity. So, clearly, these two reside on different levels of abstraction. Think also of the *matter–form* distinction: it is certainly *not* a dichotomy insofar as each form *needs* matter to come into being; they are rather two aspects of one entity. It is crucial to emphasize that the entries in any such list of concepts and conceptual pairs are semantically mutually *connected* in Ajdukiewicz's (1934b) sense. This means that it is impossible to change the meaning of any concept or pair without changing the meanings of the rest. They shed light on one another, so to speak, establishing an abstract system or web.

« 5 » The *mind/matter* distinction is thought of by at least some philosophical conceptions, e.g., reductive materialism on the one hand, and idealism on the other, as belonging to the group of the most fundamental conceptual pairs. While this is not the place to discuss whether or not this reading of materialism and idealism is correct, my point is that the *mind–matter* case should not be examined in separation from a broader ontological and metaphysical context. Due to the semantic connectedness we cannot know what the *mind–matter* pair means if we cut it off from the semantic web to which it belongs. Secondly, even if *mind* and *matter* do not constitute a valid dichotomy, they still may remain a pair of some other kind (as for example the *matter/form* distinction). This prospect of a non-dichotomic bond between mind and matter has not been taken into account or at least briefly examined in the target article.

« 6 » Furthermore, drawing on the epistemological foundationalism, I propose provisionally that we can also think of a position called ontological foundationalism. Given the brevity of this commentary I hope that the following description lacking all the technical details is intuitive. One is an ontological foundationalist if one holds that within a given ontological conceptual apparatus, thus among the concepts and conceptual pairs examined by ontological theories, there is a partly disconnected subset consisting of one concept/pair or more, such that their meanings are not affected by any changes in the meanings of other concepts. This suggests that the partly disconnected group of concepts/pairs owes its meanings exclusively to some non-conceptual or extra-conceptual factors. Metaphorically speaking, someone might claim that they are "dictated" by the observable world itself. From this angle, ontological foundationalism is the belief that some fundamental concepts/pairs or even some ontological claims are just "given" to us, strike us as obvious, and therefore play a privileged role in the conceptual "maps" of the world that we draw. Let us consider an example. The *in–out* (*internal–external*) pair has been regarded by the Cartesian tradition, broadly construed, as the key distinction whose meaning does not depend on contexts, conventions, decisions, but is just given, clean and clear. The *in–out* distinction has set the template for the modern understanding of cognition (thought of as an input-out processing), objectivity ("objective" means external and independent of the internal), subjectivity ("subjective" means internal and distinct from the external) and numerous more specific issues. So, the ontological foundationalist claims that there are ontological notions and perhaps also ontological claims that maintain some special relationship with the world around us and this is the base of their credibility.

« 7 » My concern is that Kastrup's interesting argument rests on a version of ontological foundationalism investing the concept of mind with this special status. We read:

> "[t]o say that mind and matter constitute a dichotomy is akin to saying that ripples and water constitute a dichotomy. Dichotomies can exist only between different kinds of ripples – say, those that flow mostly to the right versus those that flow mostly to the left – not between ripples and the substrate where they ripple. Mind is the substrate of the explanatory abstraction we call matter, so when we speak of a mind-matter dichotomy we fall into a fundamental 'category mistake' […]" (§36)

Therefore, according to Kastrup, the notion of mind grasps the "water" while all other concepts grasp the "ripples." Meanwhile, constructivists and conventionalists who reject ontological foundationalism, would rather say that the "water" is a Kantian thing in itself, and the only thing we actually do have access to is "ripples." And both *mind* and *matter* are "ripples."

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1| A reference to such abstract conceptual schemata seems to be a rather widely accepted assumption among metaphysicians; I follow Jerzy Perzanowski's (1990) formulation.

Author's Response

Informing Metaphysical Choices with Epistemic Considerations

Bernardo Kastrup

> Upshot • It is admittedly difficult, if at all possible, to establish a direct, positive logical bridge from epistemic considerations to ontological conclusions. Yet, epistemic considerations can and should inform metaphysical choices, for all we ultimately have for making these choices is our knowledge. More accurately, all we finally have is the mind – sole given of existence – upon which our knowledge resides and within which our metaphysical choices are made.

« 1 » A general line of criticism in the open commentaries is the idea that one cannot positively derive a metaphysical conclusion (e.g., idealism) purely from epistemic considerations of the kind discussed in my target article. Robert Prentner indicates this in §4 of his commentary, whereas Itay Shani is even more specific when he remarks that epistemic asymmetry "does little to show that the *metaphysical* dichotomy between mind and matter is unsound" (§7). While I concur with the remark, this is an attack on a straw man, for the target article does not seek to point out internal metaphysical inconsistencies in any given ontology. As explicitly highlighted in my §40, it is not even intended as a direct metaphysical argument – contrary to what Chris Fields and Sebastian Kletzl, in §1 of their respective commentaries, suggest. As such, the claim that my attempt has been that of "deriving metaphysical idealism from epistemological idealism" (Shani §12) is not accurate. My metaphysical argument for idealism was made elsewhere (Kastrup 2018).

« 2 » So, let me be clear: what the target article attempts is to highlight that different ontologies inherently carry *different epistemic costs*, i.e., degrees of epistemic confidence, even if these ontologies are internally consistent. And whereas this is admittedly not a metaphysical argument, it undoubtedly has great relevance in informing one's *choice* of metaphysics, since all that is available for making this choice is one's knowledge. The degree to which one's knowledge is reliable should be a factor – perhaps even a *defining* factor – in the choice.

Physically objective matter can only be accessed conceptually

« 3 » Shani's objections are particularly specific. In §4 of his commentary he writes:

> "Kastrup's entire argument is founded upon the assertion that matter is an abstraction of mind. […] [But] while the *concept* of matter is contingent upon the constructive activities of mind, in no way does this prove that the *denotation* of the concept – namely, matter itself, should it exist – is thereby contingent upon such acts."

I entirely agree with this and nothing in the target article contradicts it, at least deliberately. However, the intended point, which Shani misses, is this: unlike mind, our *sole* access to matter operates *through the concept* of matter, for perceptions are themselves mental. Therefore, insofar as we can directly know, the existence of matter is limited to the existence of the mere *concept of* matter. And since this concept – as Shani acknowledges – is itself just as mental as perceptions, the existence of the non-mental substrate it denotes is doubtful.

« 4 » The relevance of Shani's argument here is contingent upon the existence of matter itself (after all, if matter itself does not exist, its alleged mind-independence is immaterial), but the very thrust of the target article is precisely to question the appropriateness of our confidence in this existence, in the first place.

« 5 » Shani continues: "It seems a logical fallacy to conclude that matter itself is mind-dependent simply because such is the predicament of the concept of matter" (§4). This conclusion would indeed be a glaring logical fallacy. However, the target article never advances it. The article is explicit in stating that matter, as a concept, denotes a mind-independent ontological class (e.g., §3). Whenever the article asserts that matter is an "abstraction of mind" (§§34, 41), what is meant by the word "matter" in the respective context is the *concept* of matter. This should be clear throughout the article, as, e.g., in §6 ("physically objective matter is not empirically observable, but a *conceptual explanatory device*," emphasis added). In §41 the word "matter" is even defined as an "explanatory model," i.e., a conceptual construct. The target article's very point is to show that, given certain epistemic considerations, one must be skeptical that there is *anything more* to matter than the mere concept alone. In other words, what is meant is that, *insofar as it can be directly known, matter is no more than a concept and, as such, an abstraction of mind*.

« 6 » Shani argues that dichotomous pairs may be simply opposite polarities of a spectrum of gradations (§8) and thus not necessarily jointly exhaustive, as assumed in the target article. This is largely a matter of word usage. The target article clearly and explicitly defines "dichotomy" in a sense appropriate for its argument (§§1 and 30), for mind and matter today are not seen as opposite polarities of a continuous spectrum, but as mutually exclusive and jointly exhaustive ontological classes. Contemporary culture largely acknowledges that aspects of nature may be either mental or material, but not that there are aspects of nature somewhere in between mentality and materiality (see §§1f). Even when mental and material properties are assumed to always occur together or to fundamentally correspond to one another in some sense (as, e.g., in most formulations of panpsychism), the respective properties are still seen as mutually exclusive and jointly exhaustive. In other words, even under panpsychism, each individual property of nature is either mental or material, not something in between. The definition used in the article is thus appropriate.

« 7 » More substantively, it is crucial to notice that, unlike what Shani suggests in §9 of his commentary, the target article *never* argues that there is a dichotomy – in the sense discussed above – between idealism and mainstream physicalism. The article argues against a dichotomy solely between *mind and matter*, which in turn becomes the basis for the later claim that idealism and mainstream physicalism are not *mirror images* of each other.

« 8 » Unlike the above, the point made in §11 of Shani's commentary, although directed at a single claim in the target article and benign as far as its overall argument is concerned, is one I unreservedly agree with. It appropriately limits the scope of validity of

http://constructivist.info/13/3/341.kastrup

my claim – namely, the claim that "steps of explanatory abstraction can only be justified if the relevant empirical observations cannot be explained *without* them" (§20) – to cases wherein the manner in which a theory derives the familiar world around us does not become disproportionally convoluted.

« 9 » Fields points out that the target article does not rigorously define what is meant by "matter," in the scientific sense (§2). If this is so, it is because I assumed that, by referring to mainstream physicalism, the appropriate definitions would be implicitly inherited. What matters is that, under physicalism, the ontological primitive(s) is(are) always "physically objective," which the target article does explicitly define as something "outside and independent of mind" (§6). The more popular physicalist formulations take the fundamental subatomic particles in the Standard Model for primitives. Others take the quantum field, the hyperdimensional "branes" of M-theory, etc. The argument in the target article is agnostic as to which particular primitive is applicable, so long as it is an entity *outside and independent of mind*. Therefore, to simplify and focus the discussion on the relevant points, the target article simply uses the colloquial word "matter," whatever its meaning may be within one's preferred formulation of physicalism.

Is spacetime itself fundamentally experiential?

« 10 » Fields's discussion in §§6 to 9 is interesting and appropriate, as it touches on a critical issue: by speaking of experiences as "excitations of mind," the target article presupposes a spacetime framework insofar as one visualizes excitation as *vibration*. Since vibration is movement in space and time, this seems to distinguish spacetime from experience, for experience now needs to unfold *within* preexisting spacetime.

« 11 » Yet, I acknowledge what I believe to be Fields's point: insofar as we can directly know them, both space and time are but qualities of experience. What we call "past" is an experiential quality characteristic of memory and "future" an experiential quality characteristic of imagined possibilities or expectations. Space, in turn, is the experiential quality of a certain relationship between perceived objects.

« 12 » The problem is that even an ontological idealist is *linguistically* forced to presuppose a spacetime scaffolding – at least metaphorically – when they open their proverbial mouths, for space and time are built into the fabric of language (nouns denote things that exist in space, verbs actions that unfold in time, etc.). This is a concession to the limitations of language, not necessarily a metaphysical concession. When the idealist says that experiences are *like* vibrations of consciousness, they do not necessarily concede primacy to spacetime over experience, but may mean simply that the spacetime-bound notion of vibration *corresponds* – in some admittedly metaphorical, illustrative, but nonetheless accurate sense – to an ineffable ontological fact.

There is no excuse for conceptual ambiguity in analytic philosophy

« 13 » Kletzl's commentary centers on my critique of ontic pancomputationalism, which is illustrative of, but not central to, my argument. Kletzl claims that the ground of my critique is that I do "not agree with the concept of 'information' employed by pancomputationalists" (§2). This is not accurate: my point is that pancomputationalists do not even have an *un*ambiguous definition of information for me to either agree or disagree with.

« 14 » Kletzl argues that, even with inherent ambiguity, a concept can still be useful: "it seems dubious to say that we must be able to clearly define what a concept means for it to be meaningful" (§3). Whereas I acknowledge that conceptual vagueness may not be so problematic in certain areas of human intellectual activity – say, art criticism, poetry or clinical psychology – when it comes to analytic philosophy, particularly ontology, it ought to be considered fatal. A concept meant to denote an ontological class must unambiguously specify and delineate this ontological class; otherwise one literally does not know what one is talking about. To talk of pure information as the ground of existence without unambiguously specifying what one means – and does *not* mean – by "information" strikes me as hand waving at best.

« 15 » Kletzl points out that the meanings we attribute to certain concepts change radically over time. He asks: "Why should 'information' be immune to this possibility of changing its meaning? And does this make this concept ultimately meaningless?" (§3). So long as, *at each point in time*, one has clarity about what one means by the concept, the answer is no. But my critique of ontic pancomputationalism is not that the definition of "information" changes over time, but that it has not been unambiguous *at any point* up until now. This does make ontic pancomputationalism literally meaningless, at least until its supporters finally define "information" unambiguously.

« 16 » §4 of Kletzl's commentary is a *non sequitur*. I concur that *ideal* conceptual definitions are impractical and that a concept is already ontologically useful if it is defined "well enough" (wherein "well enough" means that "the relevant peer group accepts the definition as sufficiently exact"). But "information" is *not* defined "well enough" in this sense; that is, the peer group of analytic philosophers dealing with metaphysics and, more particularly, ontology, does not accept the definition as sufficiently exact (even if ontic pancomputationalists somehow do!). To then suggest that *all other* concepts used today by this peer group are as ambiguous as "information" in ontic pancomputationalism is simply unsound.

« 17 » In §§5f of his commentary, Kletzl makes much of my passing assertion that Claude Shannon's definition of information is "intuitive." But he misses the point, which is that Shannon's definition, unlike the morass of ontic pancomputationalism, is *clear and unambiguous*; so much so that we can precisely *quantify* information – as defined – through mathematics and design our entire modern communication networks based on the definition and respective quantification procedures. Kletzl's criticism of my "insisting on a common-sense status quo expressed by the majority" is a straw man. I insisted on no such a thing.

« 18 » In §6 of his commentary, Kletzl says that "the mind/matter dichotomy [Kastrup] is concerned with is not a distinction that plays a role in laypeople's lives." I find this a surprising view, for clearly the dichotomy *does* play an obviously significant role in most people's lives: it is the abstracting away of matter from mind that underlies, for instance, death anxiety, dualist religions, arguably consumerism, etc. See, e.g., Heflick et al. (2015).

Philosophical hypotheses are not scientific hypotheses

« 19 » Finally, the discussion in §§9 to 14 of Kletzl's commentary is rather confused. Specifically, Kletzl tries to apply criteria for the assessment of *scientific* hypotheses to what is in fact a *metaphysical* hypothesis (namely, the existence of physically objective matter). A scientific hypothesis always entails, or at least implies, a predictive model of nature's *behavior*, which can then be either verified or falsified by *observation* of such behavior. A metaphysical hypothesis, on the other hand, consists of a particular *interpretation* of scientific models – and therefore, indirectly, of nature's behavior – based on, or leading to, a certain inference about what nature essentially *is* (as opposed to how it *behaves*).

« 20 » There are admittedly grey areas between these two types of hypotheses: I have claimed, for instance, that idealism is more consistent with both physical[1] and neuroscientific (Kastrup 2017e) observations than mainstream physicalism. Nonetheless, a metaphysical hypothesis should be assessed not only in terms of its consistency with science – all serious metaphysical hypotheses are mostly consistent with science, anyway, even though they contradict one another – but also in terms of parsimony, internal logical consistency and epistemic cost (the latter being the subject of the target article). Unlike what Kletzl suggests, such a metaphysical assessment never leads to a definitive binary answer – otherwise all key metaphysical problems would already have been solved – but to an educated *judgment call*.

« 21 » For instance, I cannot definitely falsify the metaphysical hypothesis that the Flying Spaghetti Monster determines the outcome of all probabilistic quantum events from a higher dimension; but I *can* make the judgment call that such a hypothesis is overly unparsimonious and epistemically unreliable. Informed by epistemic cost considerations, I can make an analogous call regarding the metaphysical hypothesis of matter outside and independent of mind. Unlike what Kletzl suggests in §11 of his commentary, making these or other metaphysical assessments requires no "demon scenario." It is simply a matter of reason.

« 22 » Given all this, Kletzl's conclusion that "the assumption that 'there is physically objective matter outside and independent of my mind' is not a hypothesis but the fundament on which most of our hypotheses gain their meaning" (§14) is arbitrary and begs the question by assuming the very point in contention.

« 23 » On a related note, Prentner argues that the metaphysical hypothesis behind mainstream physicalism – namely, that matter exists outside and independently of mind – has served useful purposes in the scientific development of our civilization. I have acknowledged this in an earlier work:

> "Physicalism has served important practical purposes over the past couple of centuries. It has provided scientists and engineers with an effective—if simplistic and ultimately wrong—picture of the world, conducive to the development of technology. By thinking of objects and natural phenomena as having standalone reality independent of their own minds, practitioners could achieve the degree of detachment and objectivity necessary for describing the world without bias. The predictive models of nature's behavior that resulted from this effort now lie at the foundation of our technological civilization." (Kastrup 2017c: 8)

« 24 » Yet, mainstream physicalism also creates "wild goose chases," such as the search for the biological basis of consciousness, which was selected by *Science* magazine, in its 125th anniversary edition, as the second most important unanswered question in science today. In my view, mainstream physicalism has outlived its usefulness as a paradigm and, today, it is a net liability to the progress of human thought.

Mind, or phenomenal consciousness, is existence's sole given

« 25 » Fields questions whether the notion of phenomenal consciousness, or the "substrate or ground of experience," is not itself an abstraction – just as much as the concept of matter is – given that all we actually know directly are qualia (§§5f). The question presupposes an ontological distinction between qualia – i.e., the qualities of raw experience – and phenomenal consciousness to begin with. Yet, the attempt in the target article has been precisely to avoid this distinction: it defines "mind" as "phenomenal consciousness" (§9) and qualia or experiences as "excitations of mind" (§10). There is thus no ontological distinction between mind and qualia, for the same reason that there is no ontological distinction between a dance and the dancer, ripples and water. A dance is simply the dancer in motion; ripples are just water in motion. Similarly, qualia are just mind "in motion." In the absence of an ontological distinction, if qualia are a given and not an abstraction – as Fields acknowledges – then mind, phenomenal consciousness, the substrate or ground of experience is also a given and not an abstraction. This is not a linguistic sleight of hand, but precisely a careful attempt to avoid linguistic artifacts.

« 26 » Therefore, the comparison Fields attempts in §10 of his commentary is not applicable: whereas the "ground of experience" is a given, the ground of information – insofar as it is assumed *not* to be the same as the ground of experience – is *not* a given. This is precisely what allows ontic pancomputationalists to *reject* the ground of information and look upon *information itself* as the ontic foundation of reality. The target article characterizes this position as absurd because – amongst other reasons – ontic pancomputationalists offer no unambiguous definition of information. While Fields disagrees with this characterization – in §12 of his commentary he claims that it "is clearly question-begging, as any proponent of ontic information would claim that information is a 'natural entity'" – he offers no definition of information either. So, my point stands: What sense is there in attributing all ontological value to an undefined – or, at best, loosely and ambiguously defined – entity?

« 27 » Konrad Werner raises a point analogous to Fields's: that mind – just as physically objective matter – may also be no more than an abstract conceptual entity. Unlike Fields, however, Werner justifies his point not by distinguishing mind from qualia, but by implicitly using the word "mind" in a way subtly different from what is meant in the target article (§9). It is this subtle linguistic sleight of hand – unintentional, as I am convinced it was – that I shall elaborate upon.

1| See my "Should quantum anomalies make us rethink reality? Inexplicable lab results may be telling us we're on the cusp of a new scientific paradigm," Scientific American Blog Network, 19 April 2018, at https://blogs.scientificamerican.com/observations/should-quantum-anomalies-make-us-rethink-reality

« 28 » Werner initially interprets my point as intended:

> "In my reading, Kastrup's critique of the *mind/matter* dichotomy takes a foundationalist route of some sort by stipulating that our reference to *mind* is direct, i.e., not mediated by abstractions and theoretical fictions." (§3)

My usage definition of the word "mind" in §9 of the target article makes this clear.

« 29 » But he then proceeds to subtly mean something else by the word in subsequent paragraphs. He talks of "mind" and "matter" as belonging to a connected "semantic web," their meanings being relative, determined by the mutual semantic relationships in the web (§5). This is only tenable if he is talking about the *conceptual constellation* that can be associated with the word "mind." After all, as a flexible word, "mind" can indeed be part of a semantic web. But what is specifically denoted in §9 of the target article can be *directly referenced* and, as such, is not relative to the relationships in a semantic web.

« 30 » Where do semantic webs themselves exist, if not in mind? Werner says "speaking of mind is also a *choice*" (§3). Where is this choice made, if not in mind? Underlying the *concept* "mind" there necessarily is *mind itself*; that within which, and out of which, all conceptualizations are made. Underlying philosophical discourse there *necessarily* is the mind that hosts the discourse. This should be so self-evident as to obviate the need to say it, but we are now so "lost in a forest of intellectually appealing but ultimately arbitrary conceptualizations" (§29 of the target article) that I do need to say it. As such, if anything, Werner's commentary illustrates the very situation the target article expresses anxiety about, thereby highlighting the article's relevance.

« 31 » This point is so important I want to belabor it before closing this response. I harbor no illusions about my ability to use concepts clearly and rigorously: it may be – and at least occasionally it surely is – flawed. Perhaps the target article falls short in this regard. But shortcomings aside, all *this* – the target article, the open commentaries, this response, philosophy in general, discourse in general, *life in general* – must be, insofar as it exists, grounded in an *existent*. And the only existent we know directly, independently of theoretical abstractions, is what we call "mind." I could even *define* "mind" in this manner, without doing injustice to the colloquial meaning of the word: mind – including its "contents" or "excitations" – is all you and I *knew* when we were infants, prior to the shifting phantasmagoria of theory that came thereafter.

« 32 » If "mind" is an inappropriate word to denote this irrefutable, given existent, then we can try others ("consciousness"? "psyche"?). But whatever the choice, nothing would change about the existent; it would remain what it is, irrespective of our tortuous conceptualizations and abstract contortions. Without this existent, there would be *nothing* to talk about.

« 33 » At the foundation of all semantic webs, all post-modern relativism and deconstructionism, is the Mind that abstracts "mind" into a relative, debatable concept. *That* Mind is what I mean by "mind" in the target article. Denying that that Mind is a given is, in the words of Galen Strawson, "the silliest claim ever made."[2]

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