

# Unity and essence in Chalmers' theory of consciousness

Geoffrey Lee

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## 1 Introduction

How can conscious phenomenology possibly arise out chunks of insentient gray matter? According to Chalmers, one reason why there is a deep problem understanding how consciousness could emerge from the physical soup is that there is a physical–phenomenal inferential gap: no matter much information you have about the layout of the physical world and your place in it, this information will not be sufficient to entail the existence of any conscious experiences. The relevant sense of “entail” here is “entail a priori”: according to him, the understanding we lack consists in an inability to make an a priori inference from a centered physical description of things to a description of people’s conscious experiences. We might call this the *inferentialist* understanding of the problem of consciousness (in my opinion, its not the only reasonable way to understand the puzzlement that the inferential gap problem is an attempt to articulate).

Chalmers famously argues (Chalmers 2010, Chaps. 5–10) that the best responses to the inferential gap problem are *primitivist* views that in some way or other take forms of conscious mentality to be primitive ingredients in the world. More specifically, he favors either a property dualist view or a type-F monist view, tentatively suggesting that he prefers the latter position, since it achieves a more satisfying integration of the physical and phenomenal realms than the more fractured dualist world-view (Chap. 5).

His argument for primitivism is best understood as part of a broader project of defending a kind of “rationalist internalist” package of views about meaning and modality. A critical part of this package is an attractive (to my mind, at least) rationalist view of modality, according to which necessity and possibility are to be

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G. Lee (✉)  
Department of Philosophy, University of California, 314 Moses Hall #2390, Berkeley, CA 94720-2390, USA  
e-mail: geoffrey\_lee@berkeley.edu

understood in terms of the epistemic notion of a priority. Given this package, Chalmers infers a metaphysical gap between the physical and phenomenal facts from the inferential gap. He thinks the cost of rejecting this inference is accepting a necessary connection between the physical and phenomenal that can't be understood in his rationalist terms. Since, according to him, we have strong reason to accept modal rationalism given its plausibility in most other cases, we should reject the view that there is a necessary connection between the physical and the phenomenal and accept primitivism.

Those wishing to resist the argument are left with two options: to reject Chalmers' modal rationalism, or to argue that it doesn't lead to primitivism after all. Here I want to argue indirectly for the first option. I will explore some different options for developing a primitivist position, arguing that each comes into conflict with certain of Chalmers' theoretical commitments, including his commitment to modal rationalism.

Although Chalmers is a primitivist about the phenomenal, he thinks that we should expect systematic psycho-physical laws (these laws will be straightforwardly of the nomic variety if property dualism is true; in the case of type-F monism there will be law-like generalizations connecting the phenomenal and proto-phenomenal, even if they aren't causal laws). To be systematic, these psycho-physical laws shouldn't involve a separate law linking each possible total phenomenal state (roughly, a complete way that your conscious life is at a time) with its lower level base or bases. Rather, total phenomenal states plausibly have a complex internal structure which they can partially share with other total states, suggesting that a relatively small number of laws explain how a large number of different complex states are generated: that is, a *generative* theory of conscious phenomenology is (perhaps) to be hoped for. (There are definitely reasons why one might be skeptical about this hope, or at least only expect it to be satisfied with limited scope—e.g. only in the case of human consciousness rather than all possible consciousnesses. I won't directly address these kinds of concerns here).

This raises the question: what kind of structure do total experiences have? Chalmers expresses views that relate to this question. First, he defends (in Chap. 14, with Tim Bayne) the view that there is a "phenomenal unity" relation between simultaneous experiences of a subject. This relation is to be understood in terms of a relation of "subsumption" between experiences, in virtue of which total experiences have a quasi-mereological structure. Different total experiences might therefore be partly generated by the same psycho-physical law, in virtue of sharing a type of sub-experience. Second, he holds a kind of anti-reductive intentionalist view of perceptual phenomenal properties (Chap. 12); they involve the world being presented to the subject as being a certain way. These "ways for the world to be" that you are related to in perceptual consciousness might have a kind of internal structure that corresponds to the structure of the experiential state itself. A systematic intentionalist theory would presumably be one on which these complex phenomenal contents are somehow generated in part by the complex structure of the experiential states themselves.

A commitment to systematicity therefore appears to engender a commitment to a theory of experiential structure, perhaps involving elements such as these. Here I

want to focus on the relationship between Chalmers' theory of the quasi-mereological structure imposed on experience by "unity" relations, and his larger views of the mind–body problem: inferentialism, modal rationalism, and primitivism. I'll distinguish three different ways for a primitivist to develop the idea that experiences have a quasi-mereological structure, and argue that each of them conflicts in important ways with some of Chalmers' views, as well as being independently problematic.

A recurring complaint will be that different views of the structure of experience all seem to involve commitment to necessary truths about experiential structure that are deeply a posteriori in a way that conflicts with modal rationalism. On Chalmers' view, a proposition can only be necessarily true if it is either knowable a priori or some of the relevant concepts in it aren't "epistemically rigid": there are multiple epistemic possibilities for which properties they pick out. For Chalmers, phenomenal concepts are the paradigm of epistemically rigid concepts: that is the relevant sense in which there is no appearance/reality distinction for phenomenal experience, and is the fact that the conceivability argument against materialism turns on. Yet as we will see, it is hard to avoid the conclusion that there are necessary structural features of conscious experience that can be described in epistemically rigid terms, but which do not appear to be knowable a priori: consciousness has a hidden essence.<sup>1</sup>

## 2 Phenomenal unity, holism and atomism

The primitivist thinks that certain phenomenal (or perhaps "proto-phenomenal") properties are primitive (by which I mean they aren't defined in terms of other properties, or their instances aren't constituted by, or derivative from instances of other properties). They needn't, and probably shouldn't, hold the view that *all* phenomenal properties are primitive. Rather, they are likely to think that some phenomenal properties are instantiated in virtue of others: they are complex properties defined in terms of more basic phenomenal properties, or are in some other way derivative.

For my purposes, what will be important are the connections we get between these phenomenal types (both primitive and derivative) in Bayne and Chalmers' theory of "phenomenal unity". What is phenomenal unity? Intuitively, this is the relation that e.g. my current visual experience and my current auditory experience stand in, in virtue of which they are, in some sense, parts of a larger experience. Bayne and Chalmers cash this out as follows: experiences  $e_1$  and  $e_2$  are phenomenally unified just in case there is a broader experience that "subsumes"<sup>2</sup> both  $e_1$  and  $e_2$  (think about how this condition fails for simultaneous experiences belonging to different subjects). If we assume that our experiences come clustered

<sup>1</sup> Thanks to Jon Simon for helping me see this way of framing the problem.

<sup>2</sup> "Subsumption" need not be taken as a primitive relation, but can probably be understood in terms of either a constitution or parthood relation between token events, or an entailment relation between experience-types (B&C come close to taking the latter route).

in maximally unified “phenomenal fields”, then we can think of unity as the relation that experiences stand in when they are components of the same maximal phenomenal field.

I’ll assume here that an “experience” is (to a first approximation) a phenomenal property instantiation by a subject (this idea can be developed in a few different ways). Since phenomenal properties are those properties of a subject whose instantiation constitutes “what it is like” for the subject, this means that  $e_1$  and  $e_2$  are phenomenally unified just if there is something its like to have both experiences together, not just something its like to have each experience individually. Furthermore, if we understand “experience” this way, B&C’s explanation of phenomenal unity gives us a circle of conceptual inter-definition between the notions of “phenomenal unity” “phenomenal property” and “subsumption” (“subject” and “instantiation” are important parts of the mix as well): instantiations of phenomenal property  $p_1$  and phenomenal property  $p_2$  are phenomenally unified just if there is an instantiation of a phenomenal property  $p_3$  that subsumes both.

These conceptual inter-connections are consistent with various different views of the *metaphysical* relationship between these kinds. It will help to distinguish three views that a primitivist could take here, which are best thought of as theories of the metaphysical relationship between total phenomenal states, the unity relation, and the sub-states of a total states (Bayne and Chalmers (Chap. 14) make a distinction similar to the one between the first two options. Note that I take these to be distinctions at the level of phenomenal properties or *types*, rather than at the level of *tokens* or realizations of those types—more on this below):

On an *Atomistic View*, the primitive phenomenal properties are those that correspond to experiences that are atomic—experiences that don’t subsume any other experiences.<sup>3</sup> Total phenomenal properties are complex properties defined in terms of primitive phenomenal properties, the unity relation, and perhaps other properties and relations as well.<sup>4</sup> In this sense, the unity relation and primitive atomic phenomenal properties are metaphysically prior to total phenomenal properties. Because of this fact, we can’t regard “phenomenal unity” as constitutively defined in terms of “subsumption” and “phenomenal state”, contrary to the view that B&C suggest they hold. Instead, phenomenal unity will have to be taken as primitive (as on Dainton’s (2000) account), or analyzed in other terms.

On a *Holistic View*, the primitive phenomenal properties are the total phenomenal properties. In virtue of the instantiation of these primitive total phenomenal properties, derivative determinable phenomenal properties are instantiated, constituting the sub-experiences of a total experience. Thus parts of an experience are mere abstractions from the whole, rather than independently existing states. Two such sub-experiences are phenomenally unified in virtue of being abstracted from

<sup>3</sup> They might involve determinate (proto-)phenomenal properties that are of a determinable type, and therefore “subsume” instantiations of such determinable properties. But on an Atomistic view, atomic experiences don’t involve unity relations between sub-atomic phenomenal properties of a kind that obtain between atomic experiences in a complex experience.

<sup>4</sup> Strictly speaking, one might want to allow for experiences that are both atomic and total: not every possible total state need be a complex state.

the same primitive total experience. The phenomenal unity relation and sub-total phenomenal properties therefore hold *in virtue of* the instantiation of primitive total phenomenal properties, which thereby have metaphysical priority over the unity relation and sub-total phenomenal properties. This theory is therefore consistent with B&C's account of phenomenal unity in terms of subsumption.

Finally, on the *No-Priority View*, the circle of conceptual inter-definition between "phenomenal unity", "subsumption" and the phenomenal properties associated with total and sub-total phenomenal states, reflects a circle of metaphysical dependence between these phenomena, whereby neither total experiences nor sub-experiences have priority. This view is harder to understand: I will understand it as the view that *both* total phenomenal properties *and* at least some phenomenal properties associated with sub-total experiences are metaphysical primitives. Despite this fact, primitive total experiences still *in some sense* subsume their sub-experiences, albeit in a way that is consistent with some of these sub-experiences also being primitive states. On such a view, the status of the unity relation seems more up for grabs, but I suspect that it would be least costly to regard it as derivative, defined in terms of the subsumption relation and the property of being a total phenomenal state, as on the Holistic view. Taken this way, the view is also consistent with B&C's view of phenomenal unity.

Let's now take a look at what each option means for the Chalmers world-view.

## 2.1 Holism

Here are some *prima facie* objections to the Holistic primitivist view (I don't endorse them as good objections). First of all, it might be thought to be implausible that every total phenomenal property is a primitive property, on the grounds that this view is bound to be far less ideologically parsimonious than an Atomistic view, which avoids having a separate primitive for every total state. Second, related to this, one might wonder how psycho-physical laws could be systematic on this view: won't there have to be a separate psycho-physical law for each primitive total phenomenal property? A third worry in the same family is that if we take total properties as primitive, how are we to make sense of shared sub-experiences between different total experiences? How can two primitive property instantiations have shared internal structure?

In response to these worries, the Holistic primitivist should say that primitive total phenomenal properties belong to a complex high-dimensional property space, whose different dimensions correspond to different ways in which a total experience can vary. An analogy would be with wave-function states in quantum mechanics, which (on most interpretations) apply primitively to a whole physical system. Despite being a primitive state, a wave-function state has a complex internal structure given by its amplitude at each point in configuration space. Similarly, primitive holistic experiential states could be said to similar or different in various respects in virtue of their locations along the various dimensions of the property space, and in this sense have a complex internal structure. This in turn should make it fairly clear how a systematic theory of psycho-physical dependence is consistent with total state primitivism. Finally, just as there is no good objection from

parsimony against taking complete wave-function states of physical systems as primitive in quantum mechanics, there is similarly no good objection from parsimony to taking total experiential properties as primitive.

A better objection is that the Holistic view is incompatible with type-F monism, Chalmers' preferred form of primitivism. This is certainly the case if we adopt an atomistic rather than a holistic form of type-F monism, on which the basic physical quantities whose intrinsic natures are phenomenal or proto-phenomenal belong to small entities like particles or space–time points, rather than large entities such as the whole universe, or causally isolated physical systems. On an atomistic type-F view, total phenomenal states are presumably constructed out of micro-phenomenal states, not the other way around. If basic physical quantities are atomistic, it therefore looks as if type-F monism is incompatible with a Holistic view.

What if basic physical quantities are instead holistic, as on the interpretations of quantum mechanics on which the state of whole universe is given by a single primitive wave-function state? Combining this with type-F monism would appear to give a view on which the whole universe is in a single primitive *phenomenal* state, from which all other phenomenal states are derivative. This would presumably be a kind of holistic view of phenomenal character, although surely one that is too radical to take seriously, even taking into account the costs associated with alternative positions and its simplicity/mystical appeal.

All of this suggests that the Holistic primitivist is probably pushed towards a property dualist view. But of course this comes with well-known costs—for example, there is the objection that property dualism leads to epiphenomenalism. I would also point out that top-down Property Dualism faces the objection that it will be seemingly completely arbitrary which regions of space–time are those at which primitive total properties get instantiated. For example, which out of the many regions in the vicinity of my brain is the one at which my current total experience is happening? Such facts are not explanatory danglers in a sense that conflicts with Chalmers' rationalistic views of modality and explanation, but they are nonetheless a theoretical cost that other theories arguably don't have to bear.

Perhaps the most serious problem for Chalmers with Holism, however, is that if it is true it would appear to be a necessary truth, but not one that is knowable a priori. Furthermore, it would appear to be a *deeply* a posteriori necessity in the sense that it fails to be a priori even when stated using only epistemically rigid concepts. Holism is a claim about which phenomenal properties are primitive and which are derivative, and as such it can be stated entirely in terms of phenomenal concepts—the paradigm of epistemically rigid concepts—and concepts like “is primitive”, which presumably are rigid also. So Chalmers must claim that stated in terms of such concepts, Holism is either a priori, or is at best a contingent truth.

Holism and Atomism are radically different views of the nature of conscious experience. It is therefore extremely plausible they are different views of the *essence* of experience, and not merely views about how total experiences are contingently realized in our world. Denying this would require Chalmers to hold that one and the same total phenomenal state could be enjoyed in a holistic way in one world and an atomistic way in another world, for example, because type-F monism is true in one world, and holistic property dualism is true in the other world.

A relevant analogy is the view that property dualism is true in some worlds and reductionist materialism is true in other worlds, and moreover that one and the same phenomenal property can be enjoyed primitively in the property dualist worlds, and enjoyed in a materially constituted way in other worlds. But surely property dualism and materialist reductionism differ in a sufficiently profound way about how phenomenal property instantiations are constituted by other property instantiations that they are not merely contingent claims about how phenomenal properties are realized, but are claims about what these properties are essentially. I think something similar is highly plausible for Holism and Atomism.

To be sure, perhaps it is possible for a certain property to be instantiated primitively in some cases and derivatively in other cases—for example, one object might have mass 4 grams in virtue of the masses of its disjoint proper parts summing to 4 g, another object might be a mereological simple and primitively have mass 4 g (thanks to David Chalmers for this example). If this is right, the necessity of Holism wouldn't follow from some general principle to the effect that if a property is instantiated primitively, then necessarily any instantiation of it is primitive. Nonetheless, it is still plausible that Holism is a claim about the nature of phenomenal properties themselves, and not just how they are realized in individual cases. To argue for this from more some basic principles would require a discussion of property identity that is beyond the scope of this paper: here I will rely on the intuitive plausibility of the claim.

Chalmers' other option is to hold that despite initial appearances, Holism is a priori. There is a suggestion of an argument for this claim in Chap. 14. The argument would be that the Unity Thesis—the claim that necessarily, simultaneous experiences of a subject always come packaged in a single maximally unified phenomenal field—is a deep a priori truth, and that it can be seen on reflection that it could only be true if Holism is true. I'll return to this line of argument below, once we've had a chance to think about Atomism.

To sum up: probably the worst problems with Holism for Chalmers are the apparent tension with Type-F Monism, and the way that the view, if true, appears to be a deeply a posteriori necessary truth (more on this in a minute).

## 2.2 Atomism

Probably the most obvious objection to the Atomistic primitivist view is that it can seem deeply implausible that there are such things as “primitive atomic experiences”. For example, it's tempting to see the view as committed to thinking of experience as kind of pixelated manifold composed of primitive point-like experiences structured by unity relations. I'm pretty sure that this is an unfair caricature, but it is certainly true that the atomic theorist owes us a story about the nature of these primitive experiences, and how it is that they can be built up into more complex phenomenal states. (Relating to this second demand, there is the familiar worry that the principles bridging the macro and micro (proto-)phenomenal worlds might be deeply a posteriori in a way that is problematic for Chalmers. He has his cards on the view that there wouldn't be the same kind of inferential gap as

there would be for material–phenomenal necessary connections, but its unclear what right he has to this).

A second objection is that the Atomistic primitivist view will require Chalmers to give up the “Top-Down” subsumption analysis of unity. As we saw above, it is part of the Atomist view that complex phenomenal properties are defined in terms of unity relations between atomic phenomenal states, implying that unity can’t be defined in terms of subsumption by a complex phenomenal state without circularity. So if Chalmers accepts Atomism, he must revise his view of the unity relation. He then has the options of taking unity as primitive, or holding that it has an analysis, but not in terms of subsumption. In either case, we can raise a worry similar to the one raised earlier about Holism: these views of the nature of the unity relation are plausibly necessary truths (if true at all), but in a way that is deeply a posteriori. And of course, a similar point applies to the truth of Atomism itself.

There is a further interesting problem that arises for the primitivist view of unity (I believe it will also arise on a reductionist view that rejects the subsumption analysis, although I won’t argue for this here). The problem has to do with Chalmers’ commitment to the Unity Thesis: the claim that necessarily, simultaneous experiences belonging to the same subject are unified, i.e. experience always comes packaged in the form of a maximally unified “field”. If unity is a primitive relation between experiences then it’s obtaining between experiences is a *further fact* that doesn’t supervene on the facts that realize the existence of the experiences themselves. This is just part of what we mean by saying that the relation is “primitive”. Therefore, the very same experiences could have existed even if they weren’t unified, and so they do not necessarily partake in a maximally unified field. Atomism therefore appears to come in conflict with the Unity Thesis (I assume here without argument that the same problem arises for versions of Atomism that give a non-subsumptive reductive analysis the Unity relation).

At this point, Chalmers could try out the move of saying that the Unity Thesis is true a priori, and therefore that since it conflicts with Atomism, it is a priori that Atomism is false. If we assume that Holism is the only alternative (i.e. we ignore the No Priority view), we get an argument for the a priority of Holism: a nice way around the problem I raised about Holism in the last section. (Notice that Holism does at least *prima facie* sit very nicely with the Unity Thesis—it rules out partially overlapping experiences by default, since parts of experiences as mere abstractions from the whole are presumably not the kinds of parts that can be shared by distinct experiences). Bayne and Chalmers (Chap. 14) do in fact suggest an argument like this.

If Holism and the Unity Thesis *are* a priori, then presumably this can be somehow explained in terms of our understanding of the concepts involved in articulating these views, including phenomenal concepts, and the concept of a subject of experience. Let me briefly consider the claim that Holism follows from our understanding of what a “subject of experience” is. There is *prima facie* problem with this idea that Bayne and Chalmers themselves acknowledge. Perhaps we wouldn’t count an object as a “subject of experience” unless they have a single unified field of experience, or more generally, perhaps we individuate subjects of experience and maximally unified fields in the same way, so that there is a 1–1

correspondence between them. The problem is that this doesn't rule out partial unity in any interesting sense, because it doesn't guarantee that experiences always come packaged in maximally unified fields. It merely tells us that in cases of partial unity, we should *say* that there are multiple subjects present. Perhaps there is a coherent notion of "subject" that works this way, and a corresponding "thin" sense in which the Unity thesis is true, but it is fair to say that this has little bearing on the Holism/Atomism dispute that we are interested in. In particular, an Atomist who thinks that unity relations between experiences are contingent could accept such a thin sense in which the Unity Thesis is true.

Perhaps there is a different, somewhat deeper way of understanding the idea that Holism follows from our understanding of the nature of subjects. It might be argued that if Atomism is true, then there is no need for different parts of a total experiential field to be individuated most fundamentally as belonging to the same subject. For example, perhaps visual experiences are most fundamentally property-instantiations by an object that has parts of the visual system as components, whereas auditory experiences are property instantiations by an object that does not have parts of the visual system as components. In fact, something like this appears to be true on an Atomistic type-F monist view, where proto-phenomenal states that are components of a total experience most fundamentally are property-instantiations by *different* micro-objects. On such a view, there is a sense in which there isn't a single self "standing behind" each component of your conscious life. It will not be essential to the nature of these experiences that there is something its like *for a single subject* to have them. It may be fair to say that this would do enough violence to our ordinary notion of a "subject of experience", that we should conclude that a kind of "no self" view is right: there simply are no subjects of experience.

However, even if all this is correct (and it deserves a much fuller discussion), I think it at best shows that it is a priori that *if* there are subjects of experience *then* Holism is true. But I doubt that it is a priori or revealed to introspection that there exists a single subject of experience individuating each part of a phenomenal field. On the contrary, if this is the case it is yet another example of a deeply a posteriori truth about the nature of experience. (Perhaps this is a plausible way to understand Lichtenberg's famous critique of the Cartesian cogito—if so, I am a kind of Lichtenbergian).

To sum up: the main problems with Atomism that arise for Chalmers are its conflict with the subsumption account of unity, and the way in which it gives rise to certain deeply a posteriori truths about the structure of experience. We also considered the problem that it comes into conflict with the Unity Thesis, and the suggestion that this could provide us with an a priori argument for Holism. I gave some reasons for suspecting that no such a priori argument is available, although the topic certainly deserves further discussion.

### 2.3 The No-Priority view

This leaves us with only the No-Priority view to consider. It requires a much briefer discussion than the other views, since it is very hard to see why Chalmers would regard it as more attractive than the other positions. Its commitment to both total

phenomenal properties and sub-total phenomenal properties being primitive means that the view inherits most of the problems associated with both Holism and Atomism. And the fact that it postulates necessary connections between these primitive properties makes it problematic in a further way. The principle that necessarily, if one enjoys primitive total property T, then one enjoys primitive phenomenal properties P1, P2 ... Pn, corresponding to certain primitive sub-experiences, is yet another necessary truth that might cause trouble for Chalmers. Furthermore, such a necessary connection between distinct primitive properties seems like it might be objectionable even to those who reject modal rationalism: it offends against Humean intuitions forbidding necessary connections between distinct existences, intuitions that don't require anything as strong as modal rationalism to be taken seriously. There are therefore reasons for doubting that any phenomenal primitivist will like this view.

### 3 Conclusions

Where does this leave us? I've argued that any way of developing the primitivist position will give us deeply a posteriori truths that conflict with Modal Rationalism, and will be independently problematic, for the reasons given. Since Chalmers' main objection to materialism is that it is in conflict with modal rationalism, we appear to have an argument that it is modal rationalism that is at fault, not materialism (although we shouldn't throw out the baby with the bathwater: there may be a view in the spirit of Chalmers' modal rationalist position that is viable).<sup>5</sup>

Looking forward, if I'm right that there are essential structural features of experiential properties (like being atomistic or holistic) whose obtaining is only knowable in a deeply a posteriori way, this raises the question of what the full range of features are that have the same status. For example, experiences might have deep *representational* structure that is not revealed a priori, or might essentially involve relations to certain items (like sense-data or material objects) that are not revealed through reflection. And of course if materialism is true, experiential properties may have functional or physical essences that are deeply a posteriori. Thus if we reject modal rationalism, there is a project of finding out what consciousness *really is*, a project that cannot succeed through purely a priori reflection. By contrast, for Chalmers, consciousness wears its nature on the surface, in that we can *only* find out about its real nature through introspection and a priori reflection (although we may not currently have all the concepts, such as concepts of proto-phenomenal properties, required for formulating the relevant a priori truths). For him, the only sense in which there can be an empirically grounded theory of consciousness is that there can be an empirical theory of what contingently grounds consciousness in the actual world, but not of its essential nature. In this way, the dispute about modal rationalism and the "hard problem" is not just a dispute about whether

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<sup>5</sup> For example, there is the view that everything follows a priori from a canonical description of a centered world, once we conjoin such a description with specifications of the real essences of properties (see Fine (1994) for a defense of necessary connections grounded in real essences).

consciousness is a basic ingredient in the world, but also about what can be learned about consciousness through different means of investigation.

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