The top-down nature of ontological inquiry: Against pluralism about top-down and bottom-up approaches

Ragnar van der Merwe

Faculty of Humanities, University of Johannesburg, Johannesburg, South Africa

Abstract

Some philosophical pluralists argue that both a top-down and a bottom-up approach serve as equally justified methods for engaging in ontological inquiry. In the top-down approach, we start with an analysis of theory and extrapolate from there to the world. In the bottom-up approach, we begin with an empirical investigation of the world and let our theory respond accordingly. The idea is that ontological conclusions arrived at via these two equally justified methods are then also equally justified. In this paper, I argue that top-down/bottom-up methodological pluralism inadvertently grants primacy to the top-down approach. I go on to suggest that this is, in fact, unavoidable because it applies to ontological inquiry in general. Ontological inquiry invariably adopts the top-down approach because (a) ontological conclusions are not revealed during empirical investigations; instead, they are conceptual (i.e. theoretical) posits asserted top-down and (b) even if we consider both top-down and bottom-up approaches during ontological inquiry, such a consideration itself occurs from within theory (i.e. top-down).

KEYWORDS

1. INTRODUCTION

One of the key problems in the philosophy of ontology relates to whether the world is (a) unitary (e.g. Ladyman and Ross 2007) or (b) dappled or fragmented (Cartwright 1999; McDaniel 2017). The question is whether we should be ontological monists or ontological pluralists. Since, at least, Quine's (1963) famous endorsement, ontological pluralism has become increasingly represented in the literature. However, a question naturally arises about how ontological pluralism should be defended. Ontological pluralists adopt a variety of approaches in this regard.

My concern in this paper is with a defence that involves arguing for two different, yet equally justified, methods in ontological inquiry – methods that putatively result in different, yet equally justified, ontological conclusions. These two methods are what are sometimes called the *top-down approach* and *bottom-up approach* to ontological inquiry:

- The top-down approach proceeds *from* theory *to* the world. We start with an analysis of theory and extrapolate from there to the world. We might state that numbers exist because they are indispensable to scientific theorising or that possible worlds exist because they solve various problems in formal logic.
- The bottom-up approach proceeds *from* the world *to* theory. We start with an empirical investigation of the world and let our theory respond accordingly. We might state that gravitational waves exist because of experimental verification or that tables and chairs exist because the world presents such things to our senses.

Note that both the top-down approach and the bottom-up approach take consideration of theory *and* the world during ontological inquiry. We should not think that the top-down approach employs a strictly *a priori* method and that the bottom-up approach employs a strictly *a posteriori* method.

Anjan Chakravartty (e.g. 2017) and Douglas Edwards (e.g. 2018) notably argue that both the top-down approach and the bottom-up approach constitute legitimate methods for reaching ontological conclusions. I will call this view *top-down/bottom-up methodological pluralism about ontological inquiry* (TB$_{PLU}$). TB$_{PLU}$ is my primary concern in this paper.

Note that I take 'theory' to include scientific, linguistic, and/or mathematical theories. Simply put, a 'theory' is a non-trivial semantic structure composed of concepts and relations between concepts (a structure of this sort is 'non-trivial' when it serves some purpose, typically a representational purpose). Theories are, of course, employed in a variety of human activities.

Scientific theories might be instrumentally employed in engineering and technological enterprises without specific concern for ontological commitments, language might be employed in communication or fiction, and mathematics might be employed in purely formal problem-solving. Nonetheless, in the context of this paper, theory – whether scientific, linguistic, or mathematical – constitutes a conceptual framework we utilise when engaging in ontological inquiry. When Nancy Cartwright states that the world is "dappled" (non-unified or fragmented), 'dappled' is a concept in such a framework. Chakravartty emphasises the role of scientific and mathematical theories in ontological inquiry, while Edwards emphasises the role of language (specifically sentences). I will, though, mostly just talk about 'theory'.[1]

Theory references (stands in a representational or mapping relationship to) the physical world or simply 'the world'. The world is what (descriptive) scientific theories are trying to pick out; it is what they are *about*. The world is that which is observable or detectable; it makes up the subject matter of science. It consists in the objects, properties, and relations 'out there' that we uncover during empirical inquiry. We can think of the world as the stuff that technologists manipulate when they construct their technologies or that sculptors sculpt when they create their artworks.

One of the primary goals in both science and philosophy is to bring theory and world into alignment – to have our scientific, linguistic, and/or mathematical descriptions stand in a proper sort of relationship to the world's objects, properties, and/or relations. Such a proper sort of relationship is usually cashed out in terms of correspondence or isomorphism. My concern here is, however, with TB$_{PLU}$. I will not engage with the debate over if and how theory and world properly align (in van der Merwe 2023a, I suggest how they might do so).

Here, I will argue that the mistake ontological pluralists like Chakravartty and Edwards make is to assume that theory is something independent of us. They assume that theory is like the world – that it is something 'out there' whose nature and relations to other things can be analysed and judged in a way that is not itself theory-dependent. Following, but expanding on,

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[1] Some might worry about equivocation when I take 'theory' to include scientific, mathematical, *and* linguistic structures. However, scientific theories plainly have a linguistic component, and even Chakravartty considers "mathematical descriptions" to be "linguistic entities" (2021, 364). I cannot find anything in Edwards' writings to suggest that he would disagree with this. Edwards thinks of sentences as standing in a representational relationship to the physical world, but he is explicit that this is only his personal preference. We can just as easily consider beliefs, ideas, or propositions to play the requisite representational role (Edwards 2018, 20-21, 89-90).

what pragmatists like (middle) Putnam (1981) and Davidson (1984) have written, I argue that ontological inquiry is indubitably situated within theory. We cannot assume a God's-eye view of both theory and the world to give an account of the relationship between them.

In Section 2 of this paper, I briefly introduce general methodological pluralism about ontological inquiry. I then discuss the top-down versus bottom-up approaches central to TB_{PLU}.

In Sections 3 and 5, I outline Chakravartty and Edwards' respective versions of TB_{PLU}. For both scholars, TB_{PLU} supports ontological pluralism because both the top-down approach and the bottom-up approach to ontological inquiry are equally justified. And, if different approaches to ontological inquiry are equally justified, then different ontological conclusions reached via these different approaches are, putatively, also equally justified.

In Sections 4 and 6, I argue that Chakravartty's and Edwards' respective versions of TB_{PLU} fail to support ontological pluralism. This is because they tacitly grant priority to the top-down over the bottom-up approach in reaching their pluralistic conclusions. By "grant priority", I mean that the top-down approach is treated as *primary*. It plays an *indispensable* role while the bottom-up approach only plays a *subsidiary* role. This suggests an asymmetry, rather than a symmetry, between the two approaches. Top-down and bottom-up are neither equally efficacious in reaching ontological conclusions nor can they stand apart as equally legitimate methods. Instead, as we will see, the top-down approach plays a deciding role.

In Section 7, I suggest that general ontological inquiry seems to grant priority to the top-down over the bottom-up approach. This is for two reasons:

1. Ontological conclusions are not gleaned from the world during empirical inquiry. Instead, they are conceptual – i.e. theoretical – posits.[2]

2. Even if we consider both top-down and bottom-up approaches during ontological inquiry, such a consideration will itself employ a top-down approach.

In Section 8, I respond to two objections made by an anonymous reviewer.

TB_{PLU} has not been thoroughly critiqued in the literature up to this point. This paper should, therefore, make a novel contribution to the debate around ontological and methodological pluralism.

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[2] I take it that acts of deliberating, deciding, and positing ontological conclusions are part of the relevant ontological *method*, even if the conclusion itself is not.

Note that there may be other ways to defend ontological and methodological pluralism. TB$_{PLU}$ does not exhaust the possibilities. However, such other defences fall outside the scope of this paper. My aim when criticising TB$_{PLU}$ is merely to suggest that, if methodological pluralism about ontological inquiry is correct, then it is not the top-down/bottom-up variety. The proposed equality of top-down and bottom-up approaches cannot be invoked to support ontological pluralism. If ontological pluralism is correct, then proponents will need some other way to defend their view.

Note also that I will not attempt to present an alternative argument in defence of ontological pluralism or develop an alternative method to TB$_{PLU}$. I will also not engage at length with broader debates around general ontological and methodological pluralism. My goal is, instead, to (a) show how TB$_{PLU}$ fails as a pluralistic thesis about ontological inquiry and (b) stress the top-down nature of ontological inquiry.

2. TOP-DOWN VERSUS BOTTOM-UP METHODOLOGICAL PLURALISM

My aim in this section is to explicate the top-down versus bottom-up approaches to ontological inquiry that serve as the basis for Chakravartty's and Edwards' versions of TB$_{PLU}$ (to be explicated in Sections 3 and 5 respectively).

In the context of my discussion, methodological pluralism suggests that there is more than one successful method employable in ontological inquiry (see Hansson 2010 for detail). Methodological pluralism can be defended in various ways. I am, though, taking Chakravartty and Edwards to be exemplars of the general view. Their methodological pluralism draws specifically on the idea that both a top-down and a bottom-up approach to ontological inquiry enjoy equal justificatory weight. By "equal justificatory weight", I mean that both approaches constitute successful methods for arriving at bona fida ontological conclusions, that is, ontological conclusions that describe or pick out what is *real*.

The key distinction between the top-down and bottom-up approaches is as follows:

- The top-down approach grants priority to theory over the world. We can say that the structure of theory determines – it informs or dictates – the structure of the world. In the top-down approach, the ontologist begins with an analysis of theory and then draws conclusions about the world therefrom. If theory has a certain form, then the world is supposed to have that same (or, at least, a very similar) form. Analytic metaphysicians ostensibly employ the top-down approach during ontological inquiry. They might begin

with an analysis of the logical form of language and then take the world to mirror that form.

- The bottom-up approach grants priority to the world over theory. We can say that the structure of the world determines – it informs or dictates – the structure of theory. In the bottom-up approach, the ontologist begins with an analysis of the world and then draws conclusions about theory therefrom. If the world has a certain form, then theory is supposed to have that same (or, at least, a very similar) form. Empiricists ostensibly employ the bottom-up approach during ontological inquiry. They might begin with an analysis of phenomenal data and then let their language respond accordingly.

2.1 TOP-DOWNISM

So, top-downers arrive at their ontological conclusions primarily by way of an analysis of theory. This involves a kind of inference to the best explanation (or perhaps a transcendental inference) from theory to the world. For example, if there are different logically consistent ways of talking about being, then the world must consist in different ways of being. Kris McDaniel (e.g. 2009) is a top-downer. He infers from linguistic meaning and formal logic (notably existential quantifier variance) to an ontological conclusion that the world is "fragmented". We must, he says, "theorize about the meaning of 'being' in order to have a complete ontological theory" (McDaniel 2009, 309). In other words, ontological inquiry must proceed top-down (from language to world).

Jason Turner likewise claims that "reality has multiple ontological structures" (2010, 7). In quantifier language, there is no single existential quantifier $\exists$ ranging over a single domain accompanied by a variety of associated predicates (such as '… is concrete' and '… is abstract'). Rather, there are multiple existential quantifiers; perhaps $\exists_1$ ranges over *concreta*, while $\exists_2$ ranges over *abstracta* (Turner 2021). This move, says Turner, allows us to "talk in an ontologically perspicuous manner" (2010, 9); "language which uses multiple quantifiers is *metaphysically better* than the language which uses just one" (Turner 2012, 422 original emphasis; see also Pedersen 2022). Like McDaniel, Turner thus employs a language-to-world method (the top-down approach).

2.2 BOTTOM-UPISM

The reverse approach – the bottom-up approach – involves a world-to-theory method. Here, the role of the world revealed in empirical investigations is prioritised over the role of theory. Our ontological talk should respond or react to, rather than prescribe or pronounce, the way the

world is. Considerations – specifically empirical ones – of the world's entities, properties, or relations inform our considerations of the content and structure of theory.

Empiricists seem to employ the bottom-up approach. In Bas van Fraassen's (1980) Constructive Empiricism (CE), the function of scientific theories is to account for observable phenomena. Van Fraassen thinks of a scientific theory as a family of models. A theory is a "good" theory to the degree that some of its models – its "empirical substructures" – are constructed in such a way that they stand in an isomorphic mapping relation to the structure of pertinent observable phenomena. CE encourages a sceptical stance regarding the ontological status of purely theoretical entities and structures. It only requires of a theory that it "'saves the phenomenon', that is, correctly describes what is observable" (van Fraassen 1980, 4). Ontological commitments are restricted to what we can (possibly) observe, and observation, says van Fraassen, is a special kind of measurement. Empirical factors are, thus, the primary determinants of ontological commitment in CE.

CE is a form of scientific anti-realism, but we can also identify the bottom-up approach being employed by scientific realists (see Chakravartty 2021). Ian Hacking's (1982, 1983) Entity Realism (ER) emphasises the role of "real life" experiments in ontological inquiry rather than the structure of scientific theories (as top-downers do). If some entity can be causally manipulated in real-life experiments to affect independent empirical domains and/or produce new phenomena, then it is *real*. Hacking is, though, sceptical of the inference to the best explanation that top-downers often employ. Physicists, he says, do not "explain phenomena with electrons. They know how to use them" (Hacking 1983, 272), and our ontological talk should respond accordingly (see also Cartwright 1983). In ER, ontological posits are informed by considerations of empirical factors. Proceeding bottom-up, ERists maintain that entities are real because they are experimentally manipulable.

In any event, my primary concern here is with TB$_{PLU}$. As mentioned, TB$_{PLU}$ considers both the top-down approach and the bottom-up approach to carry equal justificatory weight in reaching ontological conclusions. I now turn to Chakravartty's and Edwards' respective versions of the view.

3.   CHAKRAVARTTY'S TB$_{PLU}$ AND THE ONTOLOGY OF PARTICLES

Chakravartty defends both scientific realism and ontological pluralism.[3] He commits to a realist ontology of dispositional properties but maintains that others can freely choose to commit to alternative ontologies (provided that they are consistent with our best science); "no one description of ontology is uniquely correct or privileged" (Chakravartty 2017, 190). If

> one takes these contrasting descriptions at face value as referring to ontologies of things in the world (as I and others do…), they are properly regarded as *compatible* descriptions of *different* entities – compatible precisely because they describe different things – not *inconsistent* descriptions of the *same* entities. This is a profound form of pluralism (Chakravartty 2017, 190 original emphasis; see also 2023).

This is an expression of Chakravartty's ontological pluralism. Methodological pluralism is linked to ontological pluralism as follows:

> [T]here are good philosophical reasons to believe that *different assessments* of [ontological] considerations are rationally permissible, which entails that rational agents may well come to different conclusions about scientific ontology in ways that admit of no ultimate resolution, in principle (Chakravartty 2018, 379 original emphasis).

In other words, different (rational[4]) methods can generate different ontological conclusions carrying equal justificatory weight.

Chakravartty (2019, 2021) has recently explicated his TB_{PLU} by way of a case study of particles in the Standard Model. He notes that we cannot simply read the ontology of physics off physical theory. This is because (a) physics *underdetermines* its ontological interpretations and (b) our inquiry into the nature of particles is *value-laden*. That said, Chakravartty thinks

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[3] James Miller (2016) argues persuasively that ontological pluralism and scientific realism are incompatible. Ontological pluralism, he says,

> denies the very sorts of statements that realism has traditionally been associated with, where the truth of those statements is in virtue of truthmakers that are metaphysically substantive by carving reality at its joints… (Miller 2016, 5; see also van der Merwe 2024).

[4] Following van Fraassen (2002), Chakravartty equates rationality to internal coherence (*viz.* "no self-sabotage").

that there are, at least, two equally justified methods for inquiring into the nature of particles: the top-down approach and the bottom-up approach.[5] This distinction reflects

> a longstanding division of labour within the community of physicists. On the one hand there is theoretical physics, which views particles through the lens of formal, mathematical descriptions furnished by theory [top-down], and on the other hand there is experimental physics, which views particles through the lens of the sorts of detections and manipulations of them that are part and parcel of laboratory practice [bottom-up] (Chakravartty 2021, 358).

The top-down approach proceeds "from a set of mathematical relations downward, to the natures of properties and the putative entities that have them in the world" (Chakravartty 2019, 15);

> the (explicit or implicit) operating principle [is] that insight regarding the natures of particles should be intimately and exclusively connected to interpreting the mathematical formalism… This is all we need to understand the natures of particles, nothing more (Chakravartty 2021, 359).

In contrast, the bottom-up approach proceeds "from a consideration of properties associated with objects and events and processes in the world, upward, to a consideration of how these things are portrayed in mathematical descriptions" (Chakravartty 2019, 15). Here "the determinate properties of particles, whose values are detected and manipulated in [experimental] work, take center stage" (Chakravartty 2021, 362). In the bottom-up approach, we thus

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[5] See Flores (1998) for an overview of top-down versus bottom-up *explanations* as opposed to top-down versus bottom-up methods in science. Dennis Dieks (2009) argues that both top-down and bottom-up scientific explanations are viable in physics. He writes:

> There is no clear-cut and general difference between the two types of explanation with regard to their power to generate understanding because the notion of understanding is contextual in the same way explanation is… Quite generally, physics is pluralistic as far as explanations and ways of obtaining understanding are concerned (Dieks 2009, 233).

Chakravartty would, I think, welcome this kind of pluralism about scientific explanation and understanding.

proceed from a consideration of properties associated with objects and events and processes in the world, upward, to a consideration of how these things are portrayed in mathematical descriptions (Chakravartty 2019, 15).

Note that, Chakravartty (and Edwards) do not think that the bottom-up approach merely involves the idea that being immersed in empirical investigations can make certain kinds of ontological commitments natural or helpful in describing some subject matter. We should think of things in slightly stronger terms. In the bottom-up approach, our considerations of the world (revealed in empirical inquiry) strongly inform – even determine – our theoretical considerations and formulations.[6]

In sum, Chakravartty maintains that both the top-down approach and the bottom-up approach offer equally legitimate insights into the nature of particles, even while they can present very different ontological pictures. He takes this case study to be emblematic of ontological inquiry broadly construed. Moreover, not only do both the top-down approach and the bottom-up approach enjoy equal justificatory weight, but a single inquirer can legitimately utilise both during ontological inquiry. However, Chakravartty does not claim that adopting the top-down or the bottom-up approach (or some combination thereof) is simply a matter of heuristic convenience. Instead, one's ontological conclusions are premised on which approach one adopts.

4.   THE TOP-DOWN NATURE OF CHAKRAVARTTY'S TB$_{PLU}$

I have outlined Chakravartty's TB$_{PLU}$. I now argue that those outwardly utilising the bottom-up approach in his particle ontology case study, in fact, appear to be utilising the top-down approach. I conclude that Chakravartty's TB$_{PLU}$ tacitly grants priority to the top-down approach over the bottom-up approach.

Chakravartty (2019) states that top-downers tend to describe the ontology of physics in theoretical terms – as, e.g., laws, structures, or symmetries (sometimes called *abstracta*). Bottom-uppers, in contrast, typically describe the ontology of physics in terms of entities and/or properties (sometimes called *concreta*). So, top-downers who hold that laws, structures, or symmetries make up the world's ontology are, in a sense, applying or 'pasting' aspects of theory onto the world. We can think of this as a kind of *projecting* of theoretical concepts onto

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[6] Thank you to an anonymous reviewer for bringing up this issue.

the world, where a 'concept' is a semantic constituent of theory (recall Section 1).[7] Here, we construct concepts in our attempts to comprehend the complex empirical data presented by the world. When there are discernible patterns in the data, we might assign a concept – e.g. 'particle' (or 'organism' or 'the economy') – to those patterns. The top-downer's ontology of laws, structures, or symmetries is not discovered in empirical data during ontological inquiry. Instead, 'laws', 'structures', or 'symmetries' are concepts projected from theory onto the world.

Now, Chakravartty thinks that bottom-uppers are doing something different. Bottom-uppers, recall, prioritise considerations of the world revealed in empirical inquiry. They then analyse the resulting effect on theory to reach ontological conclusions. However, bottom-uppers seem to be inadvertently utilising the same approach as the top-downers. This is because (as with laws, structures, or symmetries) bottom-uppers do not, strictly speaking, glean an ontology of entities or properties from the world revealed in empirical data. Nothing in the data directly suggests that entities or properties constitute the world's ontology. Instead 'entities' or 'properties' are concepts – they are theoretical constructions or linguistic terms – that bottom-uppers project onto the world as a conclusion to ontological inquiry (even if that inquiry involves empirical investigations).

Ontologists might draw from both theory and world during ontological inquiry, but their resultant ontological conclusions are conceptual projections made from within theory rather than *given* (or revealed) in empirical inquiry; they are asserted top-down. Kant (1996) first noticed this when he claimed that empirical data (the contents of sensation) without some conceptual binding are disjoint, noisy, and meaningless. Only when we overlay the data with theory (with "categories" or concepts) can we even begin ontological inquiry, not to mention arrive at ontological conclusions (see Stang 2022 for detail). Theory is always present in ontological inquiry, sorting and classifying from the top-down what the world presents bottom-up. My contention is, thus, that the top-down the bottom-up approaches cannot be equally justified in the way that Chakravartty supposes because both are ultimately prioritizing the top-down approach.

Chakravartty might object that, of course, our ontological conclusions are made top-down. His point is merely that top-down and bottom-up approaches should be given equal consideration in the process of reaching such conclusions. The problem is that, even if we equally consider the top-down approach and the bottom-up approach during ontological

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[7] See Margolis and Laurence (2021) for an overview of the current debate around the nature of concepts.

inquiry, such a consideration *itself* occurs top-down. In other words, we analyse and judge the justificatory weight of top-down versus bottom-up from within theory – from the top-down. Analysis and judgement are epistemic or semantic activities that occur from within theory; they are not empirical in nature. The above seems to undermine the idea that top-down and bottom-up approaches can enjoy equal justificatory weight. It might be that we cannot help but prioritise top-down over bottom-up.

Chakravartty might further object that he is talking about what practising scientists do rather than presenting a metaphysical thesis about the nature of ontological inquiry. However, ontological inquiry is standardly understood as an exercise in metaphysics (at times, Chakravartty seems to suggest as much [see Chapters 1 and 2 in his 2017]). And, metaphysics (even the kind of naturalised metaphysics Chakravartty prefers) is, almost by definition, a theoretical enterprise exercised top-down (recall Section 1). The world presented in empirical data cannot directly inform our ontological conclusions. Instead, we construct theoretical concepts that are then projected onto salient patterns in empirical data.

As several writers – notably pragmatists like Putnam (1981) and Davidson (1984) – have suggested, we appear to be bound within or 'trapped' inside theory. This is the case even if we contemplate and are affected by the output of empirical inquiry from within our theoretical 'bubble'.[8] We cannot adopt a theory-independent and world-independent God's-eye (or third-man) view from where to inquire into the relationship between theory and world. Instead, our inquiry (including ontological inquiry) is indubitably situated within theory (Quine's 1960 theory-ladenness of observation theses make a similar point; see also Davidson 1973). Chakravartty seems to miss this Kantian insight (see also Henschen's 2024 critique of Chakravartty's view). Without argument, Chakravartty assumes that we can stand apart from theory and world to give an impartial (non-theoretical?) account of both. But, it seems that theory is *of* theorisers; it is not resident 'out there' (in the Platonic realm perhaps) awaiting analysis. Our analysis and description of theory is itself unavoidably theoretical. I flesh out this argument in Section 7.

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[8] According to William Whewell (who influenced Peirce's pragmatism), "there is a mask of theory over the whole face of nature" (1840, I, 24). See van der Merwe (2023a, 2023b) for detail. William James similarly stated that "[t]he trail of the human serpent is thus over everything" (1907, 64).

In sum, the top-down approach and the bottom-up approach to the ontology of particles cannot enjoy equal justificatory weight as Chakravartty supposes. Both top-down and bottom-up seemingly prioritise top-down (explicitly in the former case; implicitly in the latter).

I now discuss Edwards' TB$_{PLU}$, which, interestingly, originates in the philosophy of truth rather than the philosophy of science.

5. EDWARDS' TB$_{PLU}$: FROM ALETHIC PLURALISM TO ONTOLOGICAL PLURALISM

Although also a proponent of TB$_{PLU}$, Edwards is firstly concerned with truth. By way of the scope problem,[9] he argues that there is more than one truth property. This leads to alethic pluralism: there are different ways sentences can be true; true sentences possess different kinds of truth properties (see Edwards 2018 chs. 1 and 2, 2021 for detail). For example, sentences are true by correspondence in the scientific domain, but they are true by being superassertible[10] in moral and aesthetic domains.

What matters here is Edwards' ontological pluralism (which follows from his alethic pluralism) and the version of TB$_{PLU}$ that gets him there. Like Chakravartty, he argues for ontological pluralism by distinguishing between two equally justified methods involved in ontological inquiry: a theory-to-world (top-down) and a world-to-theory (bottom-up) approach.

- The theory-to-world approach applies to moral and aesthetic domains where true sentences construct moral and aesthetic facts. Here, considerations of language inform our claims about the facts.

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[9] The scope problem appeals to our intuition that different kinds of truth appear operant in different domains of discourse. Notably, correspondence seems to pertain to true sentences about the physical world out there, while true moral or aesthetic sentences, for example, seem to construct moral or aesthetic facts rather than correspond to anything out there (*pace* Platonism). Alethic pluralists conclude "that different theories of truth should be limited in scope, as they each perform well in some domains, but not others" (Edwards 2018, 83; see also Cotnoir and Edwards 2015, 117-122; Lynch 2009, 32-36; see also van der Merwe 2021; van der Merwe and Msimang 2024).

[10] Superassertibility is a form of durable warrant (Wright 1992). As Julian Dodd puts it, "<p> is superassertible if and only if <p> is warranted without defeat at some stage of enquiry, and would remain so at every successive stage of enquiry" (2013, 29, fn. 4; see also Edwards 2018, 91-96).

- The world-to-theory approach applies to the scientific domain where true sentences represent physical facts. Here, considerations of the facts inform our claims about language.

Although Edwards does not, I will continue to refer to the theory-to-world and world-to-theory approaches as the top-down and bottom-up approaches respectively.

The similarities between Chakravartty's and Edwards' views should be apparent. There is, though, an important difference. In either the top-down approach or bottom-up approach, Chakravartty thinks that what is 'on top' is scientific theories and/or mathematical descriptions, while Edwards thinks that it is language (specifically, true sentences). Nonetheless, in the context of TB_{PLU} (and as outlined in Section 1), these are all instances of 'theory'. Each is a conceptual or semantic structure purporting to stand in a proper sort of relationship to the world. Thus, both Chakravartty's and Edwards' views can be considered exemplary of TB_{PLU}. They both encourage us to interchangeably prefer either a theory-to-world method or a world-to-theory method during ontological inquiry. Both top-down and bottom-up approaches enjoy equal justificatory weight.

For Edwards, ontological pluralism involves the idea that "what it takes to exist varies from one domain to another" (2018, 3); the "nature of existence… varies from one kind of object to the next" (2018, 109; see also Cotnoir and Edwards, 2015). This variance depends on whether we employ the top-down or the bottom-up approach during ontological inquiry: "[I]n some cases, truth depends on being [bottom-up], but, in others, being depends on truth [top-down]" (Edwards 2018, 3).[11] In the top-down approach, the truth value of a sentence makes it the case that the world is some way. In the bottom-up approach, the way the world is determines the truth value of a sentence.

Specifically, in the top-down approach, the truth of a sentence "generates" or "constructs" objects and properties in the world (Edwards 2018). Motorbikes, says Edwards, "have the property of being cool because motorbikes fall under the predicate of 'is cool', rather than vice versa" (2018, 68). In this case, motorbikes are cool because we think they are cool, rather than because of some way the world is independent of our epistemic and conceptual concerns. Thus, in the top-down approach, we employ a "predicate-to-property direction of

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[11] In van der Merwe (2021), I argue that this demarcation appears to be vague (or fuzzy) rather than clear-cut.

explanation… it is because A falls under the predicate 'is F' that A is F" (Edwards 2018, 68 emphasis removed).[12]

When it comes to the bottom-up approach, we start with facts about objects and properties, then judge the truth of sentences therefrom (*viz.* predicate satisfaction). Here, true sentences "respond" to the state of the mind-independent world (Edwards 2018). This approach is identifiable in scientific inquiry into the physical domain. A metal rod, says Edwards, "falls under the predicate 'is metallic' [because it] has the property of being metallic" (2018, 68). The objective, mind-independent fact that the rod is metallic determines the truth or falsity of the sentence. In the bottom-up approach, we employ a "property-to-predicate direction of explanation… it is because A has the property of being F that A falls under the predicate 'is F'" (Edwards 2018, 68 emphasis removed).

For Edwards, the above suggests a "global pluralist metaphysics, incorporating pluralist views of both truth and existence" (2018, 110). Neither the top-down nor the bottom-up approach should be granted priority. Both approaches are equally justified, even when they produce different ontological conclusions. TB$_{PLU}$ purportedly follows.

I now argue that, as with Chakravartty, Edwards' TB$_{PLU}$ tacitly grants priority to the top-down approach over the bottom-up approach.

6.   THE TOP-DOWN NATURE OF EDWARDS' TB$_{PLU}$

As mentioned, Edwards maintains that the bottom-up approach involves our language responding to the objects and properties constituting the world. The problem is that the world does not unambiguously present us with 'the fact' that it consists in objects and properties (never mind specific objects and properties). Such a putative fact is neither apparent to the senses nor discernible in empirical data. Instead, if the world indeed consists in objects and properties, then we discern as much by formulating the concepts (or linguistic terms) 'object' and 'property' and then projecting those concepts onto the world (even if we consider the data while doing so). If so, then objects (*qua* 'objects') and properties (*qua* 'properties') are concepts that we apply top-down.

Now, Edwards might object that he is referring to a mind-independent world 'out there', one that determines our language. He is not referring to some conceptual projection we construct. However, his ontology of a supposedly mind-independent world is developed and

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[12] Singular terms denote objects in the same way that predicates pick out properties (Edwards 2018, ch. 4).

expressed *in language*. Ontological language is ineludibly developed from within theory and expressed as such. Although Edwards thinks that the state of the world informs our language in the bottom-up approach, his prior conception of what the world consists in – objects and properties – is determined top-down. The world's metaphysical nature (assuming it has one) is not revealed bottom-up. As in Chakravartty's TB$_{PLU}$, the supposed bottom-upper is, in fact, employing the top-down approach.

Edwards might also object that I am missing the point. He might say that employing analytic metaphysics allows us to take a detached point of view, one that facilitates an objective description of language (on the one hand), the world (on the other), and the relationship between them. The metaphysician's tools allow her to engage in a kind of meta-analysis, and my insistence otherwise represents a failure to appreciate the power of philosophical analysis (or the power of reason). Indeed, we can consider how the world might affect theory and how theory might affect the world. But, as intimated, this kind of meta-analysis unavoidably occurs from within theory. Both the top-down (theory-to-world) and the bottom-up (world-to-theory) approach are theoretical in this sense (Sections 1 and 4). If so, then our consideration of both the top-down approach and the bottom-up approach *itself* occurs top-down. Edwards' pluralistic argument that the top-down approach and the bottom-up approach are equally warranted seems to inadvertently prioritise the top-down approach. Like Chakravartty, he cannot grant the top-down approach and the bottom-up approach equal justificatory weight because TB$_{PLU}$ itself assumes the top-down approach in purporting to do so.

7. THE TOP-DOWN NATURE OF GENERAL ONTOLOGICAL INQUIRY

I have argued that Chakravartty's and Edwards' versions of TB$_{PLU}$ unavoidably grant priority to the top-down over the bottom-up approach. I now argue that this seems to be the case in general ontological inquiry. If so, then inquiry that is not top-down is presumably not ontological inquiry.

My aim in this section is to show that the following argument holds:

P1: Ontological inquiry involves the analysis and sorting of putatively worldly phenomena into conceptual classifications;

P2: This process occurs from within theory;

C: Therefore, ontological inquiry (explicitly or implicitly) grants priority to a theory-to-world method (i.e. to the top-down approach).

I now discuss and defend each of the steps in this argument.

7.1 P1: THE CONCEPTUAL NATURE OF ONTOLOGICAL INQUIRY

While grappling with the myth of the given (the idea that the world presents us with certain indefeasible facts), Dewey states the following about scientific inquiry:

> [F]acts by which [a] theory is to be verified or disproved are not a fixed, unchangeable, body; if a theory gets its verification through the facts, the facts get a transformed and enlarged meaning through the theory… Both idea and 'facts' are flexible, and verification is the process of mutual adjustment, of organic interaction (Dewey in Levine 2019, 163; see Dewey 1903).

Dewey is talking about some theory-to-world relation and some world-to-theory relation being mutually supportive; they are equally affective in successful scientific inquiry. Something approximating this view of theory and world engaged in a kind of synchronous co-evolution has also been endorsed by, among others, Whewell (1840) and Popper (1972). In van der Merwe (2023a), I suggested that such a symbiotic conception suitably explains certain aspects of both successful empirical inquiry and scientific progress (see also Lorenz 1977; Ruttkamp-Bloem 2013). If Dewey is correct, then top-down and bottom-up approaches can enjoy equal justificatory weight in certain domains of inquiry, such as scientific inquiry.

Note that Dewey is concerned with *scientific* inquiry. My argument is, therefore, not that *all* forms of inquiry are top-down in nature. As we will see, ontological inquiry is different from the kind of inquiry Dewey was concerned with. Instrumental or empirical inquiry aimed at pragmatic solutions, rather than ontological conclusions, can potentially grant top-down and bottom-up approaches equal justificatory weight. Engineers and technologists often use concepts in a purely instrumental fashion to get to some practical outcome (e.g. building a bridge or predicting the weather). Concepts are involved, but the people who use them are mostly indifferent as to whether they pick out what is 'real'. Engineers and technologists often seek conclusions to inquiry that *work* instead of conclusions that aspire to carve nature at the joints in the way that ontologists do.

Engineers and technologists can instrumentally adopt the extant concepts utilised in their field. They can adopt concepts that only have pragmatic import (e.g. 'frictionless plane' or 'ideal gas') without attendant ontological commitments. It follows that engineers and technologists can, in principle, grant top-down and bottom-up approaches equal justificatory weight. Instrumental or empirical inquiry is, in this sense, different from ontological inquiry.

In any event, ontologists partial to monism might conclude their inquiry with the claim that the world consists in "structure" (e.g. Ladyman and Ross 2007). Ontologists partial to pluralism might conclude their inquiry with the claim that the world is constitutionally "fragmented" (e.g. McDaniel 2017). Nonetheless, in each case, the ontologist presents a concept (or concepts) – 'structure' or 'fragmented' – that aspires to carve nature at the joints. This is different from what (most) scientists (and Dewey) are concerned with.

In developing their ontology of structure, James Ladyman and Don Ross, for example, employ a panoply of *theoretical* apparatuses. These include linguistic or semantic conceptualisations, formal logic, (naturalised) metaphysics, and inference to the best explanation. It follows that 'structure' (*qua* conclusion to ontological inquiry) is developed via the top-down approach. The same goes for pluralistic conclusions to ontological inquiry. McDaniel concludes his ontological inquiry with the claim that the world is 'fragmented'. As noted in Section 2, this occurs via a top-down inference from linguistic meaning and formal logic to the world.

Even supposed bottom-up approaches – like van Fraassen's CE or Hacking's ER – commit to an ontology centred around a specific concept: 'the observable' in CE and 'entities' in ER (Section 2). Several commentators (e.g. Rosen 1994; Ladyman 2004; Bueno 2017) have noted that CE appears to prioritise something like what I am calling the top-down approach. One of CE's central concerns is with 'saving the phenomena'. This involves sorting phenomena into a taxonomy consistent with the tenets of empiricism (i.e. into observable versus unobservable phenomena). The problem is that van Fraassen's observable/unobservable distinction is conceptual in nature. It is drawn top-down since empirical inquiry itself does not reveal exactly how to demarcate what is observable from what is unobservable. There appears to be a continuum of vision: looking through a windowpane, through spectacles, binoculars, a microscope etc. As Alan Musgrave notes (and as van Fraassen sometimes acknowledges), the "observable/unobservable distinction is vague, species-specific and shifting" (2018, 60; van Fraassen 2008, ch. 4). Different phenomena are observable under different conditions (see also Maxwell 1962; Hacking 1981). If so, then developing an ontology of the observable seems to inadvertently prioritise the top-down approach. 'Observable' is a theoretical concept (or linguistic term), one that CEists project onto the world rather than something they straightforwardly glean from empirical inquiry. The phenomena do not naturally sort themselves into the observable and the unobservable. Instead, we classify them as such from within theory.

I will not repeat the argument, but it should be clear how the same applies *mutatis mutandis* to Hacking's ER. As with CE's 'the observable', ER's 'entities' is a concept (or linguistic term) projected top-down from theory to world rather than bottom-up from world to theory (see also Egg 2017). It seems that the method we utilise during ontological inquiry (by its very nature) involves the analysis and sorting of some putatively worldly phenomena into conceptual classifications via the top-down approach.[13] Kit Fine makes a similar point when he states that the

> critical and distinctive aspect of ontological claims lies… in the appeal to a certain concept of what is real; and it is only by focusing on this concept… that further clarification is to be achieved… (2009, 171).

Fine seems to overstate his case when he says that "only" focusing on concepts can clarify ontological claims. As suggested above, we should also interact with and consider the world (as empiricists since Locke have urged us to do). We do, nonetheless, (explicitly or implicitly) seem to unavoidably prioritise conceptual (top-down) factors over worldly (bottom-up) factors during general ontological inquiry.

7.2 P2: OUR SITUATEDNESS WITHIN THEORY

Several writers in the pragmatist tradition – notably Putnam (1981) and Davidson (1984) (Section 4) – have argued that we are unavoidably situated within theory during inquiry broadly construed. Putnam echoes Kant when he denies that

> it makes sense to ask whether our concepts 'match' something totally uncontaminated by conceptualization… The very inputs upon which our knowledge is based are conceptually contaminated… (1981, 54; see also van der Merwe 2021, 518-519).

In other words, we (*qua* subjects) "contaminate" the world (*qua* object) with our conceptual classifications when we come to comprehend it. This involves the kind of 'pasting' or projecting of concepts onto the world I have been intimating at. If Kant and Putnam are right, then our interactions with the world unavoidably occur from within theory; concepts are constructed from within theory.

This is not to say that Kant and Putnam necessarily defended the thesis I am presenting in this paper (although Kant might have been sympathetic to my argument). They might have

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[13] If this is the case, then any further prescriptive question related to whether we *should* adopt the top-down versus bottom-up approach is mute. We cannot help but adopt the top-down approach during ontological inquiry.

thought that top-down and bottom-up contribute equally during ontological inquiry. In this sense, we might say that I am taking inspiration from, but expanding on, the views of Kant and Putnam (and Dewey). The alternative is that we can somehow adopt a God's-eye view of theory and world to account for their interaction in terms that are not themselves theoretical. It is not at all clear how this would be possible.

Note that the view I am defending need not lead to the radical kind of subjectivism identifiable in, for example, the work of Derrida and like-minded post-structuralists. Derrida's (1976) famous declaration "il n'y a pas de hors-texte" has been translated as "there is nothing outside the text" or "there is no outside text". Either way, it suggests that all purportedly extensional statements simply pick out further linguistic entities rather than 'the world' (see also Rorty 1989; Cilliers 1998; cf. van der Merwe 2022). Since we cannot escape language, even objects that purportedly reside in the external world (like the Sun) are linguistic in nature (Derrida 1974). For Derrida, there is no distinction between our conceptual framework and the structure of the world. Such a view goes too far in stressing the centrality of theory. On my account, there is no need to deny the existence of an outside world independent of theory. Rather, my claim is merely that ontological inquiry occurs from within theory (even though we must, all the while, take the data that the world generates into consideration).

7.3 C: THEREFORE, ONTOLOGICAL INQUIRY OCCURS TOP-DOWN

My conclusion is that ontological inquiry ineludibly grants priority to the top-down over the bottom-up approach. Our situatedness within theory is evident when we consider the apparent truism that we cannot step outside ourselves to adopt a theory-independent God's-eye (or third-man) view from where to analyse the relationship between theory and world. We can, of course, consider what things might look like from such a view. But, any conclusions we draw from such considerations will themselves be theoretically formulated. They will unavoidably occur from within theory given that we have no other way to conceptualise and comprehend things.

In sum, then, ontological inquiry grants priority to the top-down over the bottom-up approach because:

1.   Even if we *consider* both the top-down approach and the bottom-up approach during ontological inquiry, such a consideration *itself* occurs from within theory. TB$_{PLU}$ judges the top-down approach and the bottom-up approach to have equal justificatory weight. The problem is that such a judgement itself occurs top-down. We can say that

TB$_{PLU}$'s ontological *meta-analysis* proceeds top-down, and this will unavoidably prioritise the top-down approach over the bottom-up approach.

2.   Ontological inquiry concludes with an ontological posit that is conceptual in nature. To state, for example, that the world is fundamentally "structure" (Ladyman and Ross), "fragmented" (McDaniel), "the observable" (van Fraassen) or "entities" (Hacking) is to project a theoretical concept onto the world. Our ontological conclusions are not revealed bottom-up during empirical inquiry. Instead, they are conceptual *constructions* developed while employing the top-down approach.

8. OBJECTIONS AND RESPONSES

An anonymous reviewer made two important and interconnected objections to my thesis. I will respond to these at some length.

8.1 FIRST OBJECTION

The reviewer objected that, even if philosophical analysis is always conceptual rather than empirical, it does not follow that it cannot begin with empirical observations and draw conceptually meaningful and relevant inferences from them. According to the reviewer, this would be as true for philosophical theory as it is for scientific and other forms. In fact, Dewey himself routinely insisted on beginning a conceptual analysis by looking at how things already work empirically. His conceptual approach to democracy, for example, does this explicitly.

The reviewer's understanding of Dewey's approach seems to be on point. I have, though, introduced Dewey to help draw a distinction between (a) ontological inquiry and (b) other kinds of inquiry (e.g. scientific inquiry, which is what Dewey seems concerned with in the quoted passages). Dewey (and others) might begin "a conceptual analysis by looking at how things already work empirically". However, his decision and assertion that phenomenon 'x' constitutes "democracy" occurs top-down. Arguably, he must also have some (vague) notion of "democracy" in place prior to beginning a conceptual analysis (or refinement) of the concept.

More importantly, we must remember that there is a difference between (a) "observations" and "inferences" and (b) ontological inquiry. My concern is specifically with the latter. One can engage in inquiry (philosophical or scientific) by employing the bottom-up approach. But, *ontological* inquiry is something special. As argued, it is something that only seems possible top-down.

8.2 SECOND OBJECTION

The reviewer suggested that, if we begin by regarding both empirical objects and concepts as fully and equally belonging to reality, then we might get a different picture from the one I have painted. On the face of it, there is no good reason why we cannot approach ontological issues and problems by assuming this sort of parity. According to the reviewer, we might, then, regard empirical and conceptual analyses as potentially complementing, rather than excluding, each other. If we can do so, then our analyses can go from conceptual to empirical and back again without any significant problem (all other things being equal).

As before, the reviewer is correct that "our analyses can go from conceptual to empirical and back again". The problem is that these "analyses" will be top-down. By "regarding both empirical objects and concepts as fully and equally belonging to reality", one is engaging in a top-down activity. The "*regarding*" occurs top-down (theory-to-world). Also, the ontological judgments we make (or the ontological conclusions we reach) after this back-and-forth will unavoidably be conceptual (or theoretical) in nature (i.e. top-down).

Note that I am not claiming that we can do without the bottom-up approach. If we could, then we would not need science; we could just intuit ontological facts. This is what top-downers like McDaniel and Turner seem to be suggesting. My goal is not to defend their view; it is only to point out that top-down is somehow more methodologically significant (or enjoys more "priority"). My argument relates to the seeming unavoidability of the top-down approach taking priority over the bottom-up approach during ontological inquiry. As stated in Section 1, the top-down approach seems to play an *indispensable* role while the bottom-up approach only plays a *subsidiary* role. We cannot do without the former, but we need only take the latter into consideration during ontological inquiry. This suggests an asymmetry rather than a symmetry between the two approaches – an asymmetry that is skewed toward top-down.

9. CONCLUSION

I have introduced a form of methodological pluralism: TB$_{PLU}$. On this view, both a top-down (theory-to-world) approach and a bottom-up (world-to-theory) approach to ontological inquiry carry equal justificatory weight. I then argued that TB$_{PLU}$ unavoidably (and largely implicitly) grants priority to the top-down approach over the bottom-up approach. This is because (a) both top-downers' and bottom-uppers' ontological conclusions are conceptual posits discerned, formulated, and asserted top-down and (b) TB$_{PLU}$ists themselves adopt a top-down (meta-) approach in reaching their pluralistic conclusion.

Consequently, if methodological pluralism about ontological inquiry is correct, then it is not the top-down/bottom-up variety. The proposed equality of top-down and bottom-up approaches cannot be invoked to support ontological pluralism. If ontological pluralism is correct, then proponents will need some other way to defend their view.

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