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Empirically Grounded Philosophical Theorizing

Otávio Bueno and Scott A. Shalkowski

1. ~~introduction~~Introduction

According to what may justly be called the *received view* of philosophical theorizing, philosophical doctrines are non-contingent, defended on *a priori* grounds, and aimed at being true. In order to support these claims, two main lines of argument have been employed (particularly, but not exclusively, in metaphysics). These are:

(a) *Explanatory considerations*: introducing certain theoretical posits (such as possible worlds) provides a unified account of a given domain of investigation (such as modal discourse). These objects allegedly provide the basis for explanations of otherwise puzzling features of this domain, which in turn provide reasons to believe the resulting theory. The truth of the theory is established *via* the explanations and unifications these posits generate. Since no appeals to direct experiential access to these objects are made, knowledge of these objects is obtained independently of experience. The non-contingent character of these objects is to account for the non-contingent character of the doctrines and to explain why these doctrines are warranted by *a priori* means.

(b) *Indispensability considerations*: Positing certain objects is sometimes thought to be indispensable to express certain claims about the world, or to provide a systematic description of a certain range of phenomena. Mathematical objects, for example, are thought to be indispensable to the formulation of our best theories of the world. Hence, we are ontologically committed to such objects. Indispensability theorists in the philosophy of mathematics (such as Quine [1960],

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Putnam [1971/1979], and Colyvan [2001]) do not take the conclusions of the indispensability argument to be established *a priori* (experience with the relevant scientific fields is required in order to formulate the argument). Similarly, according to Quinean theorists, mathematical objects, at least those that are used in science, are not known *a priori*.

It should be noted that a weaker form of the indispensability argument can be formulated as a theoretical utility argument. In this version of the argument, the fact that reference to a certain class of objects is theoretically useful provides reason to believe in such objects. Simplicity, unification, expressive and explanatory power are all virtues that are commonly invoked in support of the belief in the objects in question.

Moreover, as indispensability theorists grant, the indispensability argument *per se* does not establish the nature of mathematical objects (whether such objects are contingent or not); nor does it establish the form of knowledge one may have of mathematics (whether such knowledge is *a priori* or not). The argument, in the version advanced by Quine and Colyvan, only establishes that we ought to be ontologically committed to mathematical objects. This leaves open the possibility of using indispensability considerations in support of an ontology of non-contingent objects whose knowledge is justified on *a priori* grounds. We think this was David Lewis's view about sets in *On the Plurality of Worlds*, where he invoked indispensability considerations – —formulated in terms of theoretical utility – —in support of the commitment to the existence of sets (see, e.g., Lewis [1986], pp. 4–5). On this view, sets are introduced due to the indispensable (theoretically useful) role they play in mathematics, even though such objects are non-contingent and are known *a priori*. We also find similar indispensability considerations in metaphysics clearly implemented in Jonathan Lowe's work; in particular, in support of metaphysical

possibility (Lowe [1998], p. v), facts (Lowe [1998], p. 228), and Lowe's own four-category ontology (Lowe [2006], pp. 15–16).

In this chapter, we argue that this conception of the philosophical enterprise is fundamentally mistaken. Philosophy is better understood as a contingent, experience-based, not (necessarily) truth-directed discipline.[1] In this respect, it shares far more with science than the received view would have it. Moreover, the explanatory and indispensability strategies that have shaped much of this conception's philosophical reasoning are similarly flawed. We argue that explanatory considerations fail to be truth preserving, and that indispensability considerations cannot guarantee the non-contingent character of the objects that are posited.[2] These strategies cannot serve the purposes for which they were co-opted by philosophers.

After indicating why the received view fails to be supported by the methodological devices its advocates have invoked, we offer an alternative conception of the philosophical enterprise. Rather than trying to offer reductive conceptual analyses, philosophy should uncover relevant relations among suitable aspects of the world. Concepts are, of course, used in such systematizations, but they are merely devices to refer to the relevant features of the world. Conceptual analysis, particularly of the fundamental philosophical concepts (such as identity, existence, modality), should not be, and cannot be, reductive. Some of these concepts are so

[1] Kristie Miller has defended the view that various metaphysical theories (for instance, about the nature of persistence, composition, and properties) are contingent (Miller [2009], [2010*a*], [2010*b*], [2012], and [2013]). Her emphasis on contingency in this context is exactly right.

[2] Some indispensability theorists agree that the indispensability argument fails to establish the necessity (or even the contingency) of the relevant objects. For example, Mark Colyvan points out that the argument is independent of the metaphysical status of mathematical objects ([2001], pp. 134–140). It is an odd feature of this argument for platonism in mathematics that it fails to determine the nature of the objects whose existence it supports.

fundamental that no illuminating account of them can be given in more basic terms (McGinn [2000]). However, non-reductive conceptual analysis is still possible: it highlights systematic relations among the relevant concepts, and it is grounded on the relevant features of the world. In our view, concepts involved in philosophical analysis are themselves grounded on the world, in the sense that they are formulated as the result of attempts at characterizing salient features of reality. This emphasizes the empirical character of the relevant concepts, and meshes well with the anti-*a priorism* we favor. After all, *pace* Kripke, the dependence of concepts on the empirical world makes it questionable an entirely *a priori* analysis of these concepts, since such an *a priori* analysis is likely to be mistaken. Water is certainly *not* identical to H_2O, as any chemist will point out: a single H_2O molecule has none of the properties that water has!

We don't propose, however, to analyze the notion of grounding (there's already a growing philosophical literature on this topic), and what we have to say aims at being neutral on the details of how such a relation is ultimately formulated. We just note that ours is not a form of foundationalism, and the grounding relation should not be understood as a foundation (in the foundationalist sense) for our understanding of the world. The relation simply indicates the dependence that concepts bear to how the world is.

As will become clear, the implementation of the non-reductive analysis does not invoke either explanatory considerations or indispensability arguments, and so it does not rely on the usual tools employed by the received view. We provide an alternative that tries to minimize the introduction of additional ontology.

On this alternative, we will argue, the philosophical enterprise does depend on experience, which, as noted, is required to form the relevant philosophical concepts. Experience is similarly invoked to explore the conceptual landscape these concepts involve and the connections they bear

to the world. As will become clear below, the determination of the proper scope of philosophical concepts depends on their empirical traits as well as on the back-and-forth process between conceptual refinement and the empirical features of the world.

Moreover, the resulting alternative need not be necessary either: more than one non-reductive conceptual analysis of a given concept is possible, and each proposal may illuminate a distinctive aspect of the domain under consideration. Consider, for instance, the different ways in which the concept of logical consequence can be characterized: model-theoretically, modally, or proof-theoretically. Each formulation highlights a different aspect of the concept, but none manages to fully analyze it without invoking some primitive modal notion. In this sense, none of the proposed analysis is ultimately necessary: they each fail if thought of as reductive, although they capture something significant about the concept under consideration. (We have, thus, a form of pluralism rather than monism about such analyses. But this pluralism does not generate relativism, since it is not the case that each analysis is equally acceptable: some are better, and face less difficulty, than others.) Such non-reductive conceptual analyses presuppose at least a basic concept of possibility, since this concept is required to implement them. So, we have a form of modalism (see Bueno and Shalkowski [2009] and [2013]).

Finally, the goal is to provide understanding of the relevant phenomena. This understanding can be obtained in two ways, depending on the form of modalism that one adopts. According to essentialist modalism, objects have essences and in virtue of them proper conceptual analyses are generated. According to empiricist modalism, no essences are needed to construct the conceptual analyses; the resulting analyses need not be true to be good (but empirically adequate only). On both views, however, understanding—that is, grasping how certain situations are possible—is the most significant goal. The result is an account of

philosophical theorizing that is contingent, empirically grounded, and not (necessarily) truth directed.

2. ~~the~~ The received view: a philosophical picture

As noted, according to the received view, philosophical methodology involves three central features: (a) typical philosophical objects are non-contingent; (b) philosophical knowledge is *a priori* knowledge, and (c) philosophical methodology is truth conducive. This proposal also invokes a particular *inferential pattern*, by using different forms of *ontological augmentation arguments*. These may be thought of as: (i) indispensability arguments, (ii) inferences to the best explanation, or (iii) arguments based on theoretical virtues (which include simplicity, unification, and expressive and explanatory considerations). The received view may not be explicitly articulated as such, or in exactly these terms, but it can be found scattered throughout the work of a number of metaphysicians.

We now briefly discuss the three central features of the received view listed above:

(a) According to the received view, typical objects of philosophical investigation are non-contingent. In order to characterize what objects are *qua* objects, instead of providing a list of what objects there are, one needs to go beyond what is simply given empirically. Empirical investigations will yield information about particular things, different as they are from every other particular thing. Philosophers are after those features that are common to each (possible) kind of object. What it is to be an object would not vary from place to place or time to time. The nature of numbers (if any) is not expected to vary across possibilities or to change when numbers are referred to in particular applications. When philosophers attempt accounts of the normative, say when considering the conditions a state must meet in order to be a just state, they do not assume that there are, as a matter of fact, any just states. They seek the nature of justice which, if

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found, could not vary across possibilities and which may not be very well instantiated at any particular time of investigation. Both in metaphysics and in ethics a crucial concern is what it is to be an object of some kind, whether a particular physical object or a particular just society, and even if the particular objects in question may be contingent, what it takes for them to be what they are need not be. The non-contingent, on this view, is inherently tied to the philosophical enterprise.

(b) Philosophical knowledge is *a priori*, on the received view, because of the very nature of the philosophical enterprise. If the objects of philosophical investigation are non-contingent, empirical methods are entirely inadequate to examine them. The particular configuration of these objects in the world will only give us contingent information about them. Their non-contingent features would be forever hidden. In contrast, *a priori* methods are naturally suited to this enterprise, since they do not depend on the vicissitudes of what is given in experience.

However, if the kind of knowledge one is searching for is of a restricted sort – —for instance, if it concerns only the existence of certain objects, rather than their nature – —then *a posteriori* considerations can be invoked. Consider the indispensability argument; it is, of course, *a posteriori*, and it is taken to provide knowledge that mathematical objects exist. Let's suppose, for the sake of argument, that these objects exist and that it is not contingent that they do. In this case, the indispensability argument will provide non-contingent information about such objects, namely, that they exist. But note that this is a very restricted claim – —of an existential kind – —and it *presupposes* the non-contingency of the existence of mathematical objects. (Clearly, the indispensability argument will not establish that it is necessary that such objects exist; but that is another matter.)

(c) According to the received view, philosophical questions are no less questions about *reality*. (Given that concepts are about reality, and are part of it, even conceptual analysis is ultimately an investigation of reality.) Philosophical questions concern the nature of reality, even if that reality is not especially tangible. When the nature of attribution is considered, the question is: *what does it take* for two things to have the same attribute?~~.~~ When philosophers give their attention to the nature of causes that scientists claim to have discovered, they look beyond whether smoking causes various cancers or heart diseases, but to what *it is* to be a cause, to what the relevant relation is between those particular causes and their respective effects. When judging that Athens is more just than Sparta (or not), what justice *is* enters this judgment, as well as how closely Athens approximates the ideal when compared to Sparta. Because philosophers have been concerned with aspects of reality that they take to be their own domain of interest and distinct from those of scientists or historians, they have taken a fundamental aim of their theories to be the truth.

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But not only are philosophical theories truth-apt, philosophers of the received view aim to develop truth-conducive methods to investigate the field. Once again, *a priori* methods are particularly well suited for that. Since these methods do not depend on contingent traits of the domains under investigation, and since the aim is to identify the most general features of these domains, an *a priori* methodology is appropriate. Just as to study properties of mathematical objects all one needs is to specify a class of axioms and determine what follows from them, to study a central philosophical issue, one needs to discover the proper characterization of the relevant range of objects and determine what follows from *that*. Philosophy, of course, need not be formal (although it can certainly be), but it shares with mathematics the same search for generality and scope. Not surprisingly, it also shares an *a priori* methodology.

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Despite the substantive differences in the content of metaphysical views, the received view relies on some common ontological augmentation arguments. The central point of these arguments is to allow for the expansion of the relevant ontology. But on what grounds are such expansions justified? ~~Three~~ As we noted above, three kinds of consideration are invoked, each of them corresponding to a distinctive type of argument: ~~.~~

(i) According to the *indispensability argument*, quantification over certain entities is indispensable to the relevant theories of a given domain. Taken together with the Quinean doctrine of ontological commitment – ~~—~~according to which theories (regimented in a first-order language) are committed to those entities that are existentially quantified over so that the theories are true – ~~—~~the indispensability argument provides reason to increase one's catalogue of what exists. In light of the use of mathematics in scientific theorizing, this argument recommends ontological commitment to mathematical entities. In Mark Colyvan's formulation, the argument goes (Colyvan [2001]):

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(P_1) We ought to be ontologically committed to all and only those entities that are indispensable to our best theories of the world.

(P_2) Mathematical entities are indispensable to our best theories of the world.

Therefore, (C) we ought to be ontologically committed to mathematical entities.

Although this argument has focused on the metaphysics of mathematics, in principle it could be applied, with suitable adjustments, to any other domain in which indispensability considerations are called for.

We should note that there are different versions of the indispensability argument in the philosophy of mathematics literature (see, e.g., Quine [1960], Putnam [1971/1979], Resnik

[1997], Colyvan [2001], and Bangu [2012], among others). In particular, there are significant differences between Quine's indispensability argument and Putnam's. As opposed to W.V. Quine and Mark Colyvan, Hilary Putnam is not a platonist. In fact, he recommends a modalist interpretation of mathematics, in terms of the possibility of certain structures rather than the existence of mathematical objects (see Putnam [1967/1979] and Putnam [2012*a*]). In Putnam's hands, the indispensability argument supports a realist interpretation of mathematics, as opposed to an intuitionistic one, since mathematical statements have truth-values independent of any particular mathematical constructions that may be performed. However, the truth of such statements does not require the existence of mathematical objects (for additional discussion, see Liggins [2008], Putnam [2012*a*], and Bueno [2013]).

(ii) According to the *inference to the best explanation* (IBE), when faced with contending explanations for the same phenomena, we should infer the alternative that provides the best explanation, which, according to IBE-theorists, is true or is more likely to be so than the alternatives. (A thorough discussion and defense of IBE can be found in Lipton [2004].) As opposed to the indispensability argument, inference to the best explanation is an inductive argument, and so the truth of its premises does not guarantee the truth of its conclusion. We think it's important to distinguish IBE and the indispensability argument since the latter can be formulated as a deductive argument, whereas the former can't. If IBE is assimilated to the indispensability argument (see Colyvan [2001], pp. 8–13), by essentially considering IBE as [a kind of] deductive reasoning, an important distinction is lost. Despite that, those who invoke IBE insist that this form of inference is ultimately grounded on important features of inductive practices, while also supporting that practice. After all, explanations of novel phenomena – that is, phenomena for which an explanation was not originally designed – are preferable to those

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that simply accommodate them – —that is, explanations that have phenomena written into them rather than independently predicted (Lipton [2004]).

(iii) According to *arguments based on theoretical virtues*, the introduction of certain objects is justified as long as the new ontology plays a role in theories that have a number of theoretical virtues, such as simplicity, theoretical unification, and expressive and explanatory power. The objects in question need not be indispensable to the theories in question (in this sense, this form of argument is weaker than the indispensability argument), but the overall theory that posits the relevant ontology displays significant theoretical benefits by having the relevant objects.

Of course, the proper characterization of each of these theoretical virtues occupies the attention of those who invoke them, and in some cases, there is significant disagreement about their proper formulation. For our purposes, we will assume that these virtues have been (somehow) properly characterized. Typically, a simple theory invokes no more than whatever is required to account for the phenomena. Theories that are unified bring together and account for apparently unrelated phenomena. Expressively powerful theories permit one to formulate and state more of the relevant features of the phenomena under consideration than less expressive theories (of course, often the issue is precisely to characterize what the relevant features are). Finally, theories with greater explanatory power provide an adequate explanation for more phenomena.

Common to these three types of arguments is the fact that they are typically used either in descriptions of scientific practice or, in some cases, as inferential maneuvers within the sciences. Metaphysicians working within the received view then invoke this style of reasoning to support metaphysical theorizing that increases the ontology.

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David Lewis's work in the metaphysics of modality provides a clear illustration of the received view, exemplifying its three distinctive features. Lewis advances the claim there is a plurality of maximally spatiotemporally extended worlds (Lewis [1986]). In a good Quinean fashion, Lewis aimed to reduce modal talk to talk of possible worlds: what is possible is what is true at some world; what is necessary is true at every world. In this way, he argues, one need not invoke any modal primitives to make sense of modality, closeness of worlds, propositions, semantic content, and properties. Central to this task is the understanding that the objects of philosophical reflection, about which modal realists aim to provide a proper theory, are non-contingent. What happens in any given world is non-contingent, since the particular details of what happens in any given world are what distinguish it from any other world. So while it is contingent that Abraham Lincoln was the 16th President of the United States, it is not contingent that he was the 16th President of the United States in our world. His being the 16th President is one of the distinguishing features of our world that makes it distinct from some others.

Moreover, Lewis notes the non-contingency of the objects of philosophical investigation. On his view:

> [n]othing can depend counterfactually on non-contingent matters. For nothing can depend counterfactually on what mathematical objects there are, or what possibilities there are. Nothing sensible can be said about how our opinions would be different if there were no number seventeen, or if there were no possibility for dragons and unicorns to coexist in a single world.
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> (Lewis [1986], p. 111).

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Given the non-contingent nature of the objects of investigation the modal realist is dealing with, it is not surprising that knowledge of these objects, on Lewis's view, is *a priori*. No experience of a possible world is needed in order to have the relevant modal knowledge. As Lewis notes:

> We do not find out by observation what possibilities there are. (Except that if we notice that logical space as we conceive it contains no very plausible candidates to be ourselves, that might be a good reason to reconsider our conception.) What we find by observation is what possibilities *we* are: which worlds may be ours, which of their inhabitants may be ourselves.
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> (Lewis [1986], p. 112).

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For the modal realist, the philosophical enterprise is truth directed and modal realism, in particular, is true. On several occasions, Lewis points that out:

> Why believe in a plurality of worlds? – —Because the hypothesis is serviceable, and that is a reason to think that it is true (Lewis [1986], p. 3).
>
> Modal realism is fruitful; that gives us good reason to believe that it is true (Lewis [1986], p. 4).
>
> If we want the theoretical benefits that talk of *possibilia* brings, the most straightforward way to gain honest title to them is to accept such talk as the literal truth (Lewis [1986], p. 4).

According to Lewis, the truth of modal realism is secured on the basis of considerations of theoretical virtue. These considerations are similar to those he identifies in mathematical practice where, he claims, mathematicians infer the existence of sets based on the theoretical utility –

—unity and economy of the resulting theory – —that is provided by positing such objects. He continues:

> As the realm of sets is for mathematicians, so logical space is a paradise for philosophers. We have only to believe in the vast realm of *possibilia*, and there we find what we need to advance our ~~endeavours~~endeavors. We find the wherewithal to reduce the diversity of notions we must accept as primitive, and thereby to improve the unity and economy of the theory that is our professional concern – —total theory, the whole of what we take to be true. What price paradise? […] It is my view that the price is right, if less spectacularly so than in the mathematical parallel. The benefits are worth their ontological cost. Modal realism is fruitful; that gives us good reason to believe that it is true.
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> (Lewis [1986], p. 4).

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Lewis is, of course, not alone in articulating this picture. Several others have contributed to it in recent past as well. From neo-logicists to essentialists, one finds expression and endorsement of significant features of that picture. While examining the epistemological bearings of platonism, Bob Hale highlights both the *non-contingent* nature of the facts about logical consequence and the *a priori* nature of our knowledge of what follows logically from what:

> Although it is arguably no more than a contingent fact that our logical beliefs generally […] correlate fairly well with the facts, it can […] perfectly well be an ingredient of the platonist's position—though it is scarcely to be reckoned distinctive of it – —that the facts about logical consequence themselves are non-contingent or necessary; and that that *A* is a logical consequence of *X* is something which we know (when we do know this) a

> priori – —or at least it is something that we have (normally, anyway) a priori grounds to believe.
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> (Hale [2001*a*], p. 177)

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Moreover, a crucial component of Hale's neo-Fregean approach to the philosophy of mathematics is the introduction of suitable abstraction principles that are taken to be *true*:

> The neo-Fregean can, and should, insist upon a more sober description of what is going on. What an abstraction does, if all goes well, is to *set up a concept* – —of *direction*, or *cardinal number*, or whatever – —by supplying necessary and sufficient conditions for the truth of identity-statements linking terms which purport reference to objects falling under it.
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> (Hale [2001*b*], p. 417)

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While Lewis and Hale do us the great service of being perfectly explicit about aiming at truth, most others sharing this particular aim leave their own commitments to it implicit. Without some qualifying remarks to indicate an anti-realist interpretation of their own discourse, most just get on with the project of arguing that some (type of) entity either does or does not exist.[3] Staying in the object language, metaphysicians typically argue that numbers, propositions, universals and many other things (do not) exist without ever bothering to ascend into the metalanguage, as does Lewis in the passages above, to state explicitly that their aim is "the truth" on the matters of their own fascinations. One can easily read both the introduction to and the contributions to a collection such as Loux and Zimmerman (eds-) [2005] as aiming to convince us about how things

[3] One example of a work that appears to be straightforwardly metaphysical, but which ultimately embraces an anti-realist interpretation of key portions of discourse, is Le Poidevin [1996].

are. E. J. Lowe (in his [1998], p. v) wishes "to restore metaphysics to a central position in philosophy as the most fundamental form of rational inquiry, with its own distinctive methods and criteria of validation". Throughout, Lowe speaks of time, its dependence on concrete individual substances, natural kinds, and the distinction between primitive and composite substances. Though his concerns and commitments are somewhat different from Lewis's, his general aim in presenting his explicit rehabilitation of metaphysics was the same – —to tell us how things are.

Lest it be thought that this is an aim for metaphysicians (even broadly construed) only, Bernard Williams explains how to understand *Ethics and the Limits of Philosophy*:

> This has been a book about what is rather than about what might be, and the hopes I have expressed are, for now, hopes. They rest on assumptions that some people will think optimistic. They can be compressed into a belief in three things: in truth, in truthfulness and in the meaning of an individual life.
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> (Williams [2006], p. 198).

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John Rawls introduces the role of justice by saying "Justice is the first virtue of social institutions, as truth is of systems of thought" (Rawls [1971], p. 3). Only the most elementary deduction is required to conclude that Rawls thought that his system of thought regarding justice was at least aiming at the truth. We contend that these cases, though far from being exhaustive, are sufficiently representative of the most typical aim of philosophical activity, at least within the confines of analytic philosophy. Within that tradition, even when it does not say so on the tin, that's what nearly all philosophical works contain: considerations aimed at the truth.

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We noted above that, as part of the received view, there are certain modes of inference (inference to the best explanation, indispensability considerations, or arguments based on theoretical virtues) that support the favored ontology. As an illustration of this aspect of the received view, consider the way in which Jonathan Lowe introduces the need for a particular conception of metaphysical possibility, which forms the cornerstone of his philosophical program:

> A key ingredient in my defence of metaphysics is the articulation of a distinctive and, in my view, *indispensable* notion of *metaphysical possibility* – —conceived of as a kind of possibility which is not to be identified with physical, logical, or epistemic possibility.
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> (Lowe [1998], p. v; the first italics are ours).

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On Lowe's view, it is based on the indispensable role that metaphysical possibility plays that this concept and its extensions need to be introduced in one's metaphysics. A similar consideration is advanced regarding facts:

> Indeed, facts seem to be ontologically *indispensable*, certainly as truth-makers and perhaps also as causal relata. We say, for instance, that the fact that Mars is red makes it true that Mars has a colour.
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> (Lowe [1998], p. 228; the italics are ours).

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So, once again, it's on the basis of indispensability considerations that Lowe includes facts (and truth-makers) in his ontology. Similarly, when he introduces his favored four-category ontology, Lowe also invokes an indispensability argument:

> […]we should gravitate towards the fourth system of ontology identified earlier, the system which acknowledges three distinct ontological categories as being fundamental

> and *indispensable* – —the category of *objects*, or individual substances; the category of *universals*; and the category of tropes, or, as I shall henceforth prefer to call them, *modes*. It is then but a short step to my preferred variant of this system, which distinguishes between two fundamental categories of universal, one whose instances are objects and the other whose instances are modes.
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> -(Lowe [2006], pp. 15—16; the first italics are ours).-

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This clearly illustrates the importance of indispensability considerations for the received view.

3. ~~the~~ The received view: some troubles

What are the shortcomings of the received view? We argue that the preferred inferential patterns of this view are invalid (inference to the best explanation), non-truth conducive (theoretical virtues argument), or inadequate (indispensability argument). Furthermore, the three central features of this view (namely, philosophical theorizing is *a priori*, truth-conducive, and about non-contingent objects) also cannot be upheld.

There are many reasons why inference to the best explanation, which is ultimately an inductive form of inference, is problematic.[4] As with any inductive inference, the truth of its premises does not guarantee the truth of its conclusion and, as usual, this provides a significant source of concern. It may be argued that the concern is no worse than the one facing scientific theories, and that fallibilists can live with that. But fallibilism about contingent objects studied in the sciences is very different from fallibilism about non-contingent philosophical objects. The

[4] It may be thought that the fact that inference to the best explanation is an inductive argument creates trouble for our claim that the received view's theorizing is *a priori*. But it does not. After all, inductive considerations and *a priori* reasoning need not be in conflict. For instance, there are those who argue that inductive arguments play an important role in mathematics, particularly as a tool of discovery (Pólya [1954]).

stakes are much higher with the latter, since one is dealing with necessary existents. It should come as no surprise that Lewis was no fallibilist about knowledge (Lewis [1996]).

Additional concerns also emerge from potentially "bad lots" of explanations, since inference to the best explanation allows one to infer a false hypothesis – —and consider it to be true (or likely so) – —on the grounds that it provides the best explanation among several rival ones, assuming that the explanations under consideration turn out all to be false, and hence form, indeed, a "bad lot" (van Fraassen [1989]). This argument goes beyond Hume's argument against the justification of induction, since it is targeted at a particular kind of inductive inference, and spells out the conditions under which the inference fails. The central concern is also different from Hume's: at issue is not the difficulty of properly justifying the inference, but its straight unreliability. Finally, as opposed to Hume's, van Fraassen's challenge does not charge the target inference with any kind of circularity.

One could reply to the details of van Fraassen's argument (see, e.g., Lipton [2004]), but the central point still stands: as a mode of inference, IBE is generally unreliable, and it's unclear that it is truth conducive. One could argue for the truth of Newtonian physics based on IBE, and convince oneself of its truth, despite the falsity of the theory.

However, if the true hypothesis is among those in the lot, there's no need to invoke inference to the best explanation. In this case, it is enough to test thoroughly each hypothesis, and the true one will be the only left standing (assuming that there are finitely many of them). In the case of philosophical hypotheses, although we lack the precise kind of testing found in the sciences, the assessment is carried over by drawing problematic conclusions from such hypotheses, highlighting counterexamples they face, and establishing incompatibility with well-entrenched views. It may be said that inference to the best explanation is required even if the true

explanation is among those under consideration, since how else could one determine which hypothesis among them (if any) is true? As those who favor this form of inference may insist, provided that the true hypothesis is in the relevant lot, inference to the best explanation should select it. This, however, is by no means obvious. After all, the true hypothesis may not yield the best explanation of the relevant phenomena: perhaps the true hypothesis is too complex and insufficiently unified to be selected as the best explanation, as these selections are typically made. In that case, not only will inference to the best explanation be invalid, but also highly misleading.

If the identification of the best explanation is made in terms of theoretical utility considerations – —simplicity, unification, expressive power – —then a significant source of concerns also emerges, since none of those virtues is truth-conducive, absent substantive metaphysical assumptions. It is understandable why someone may prefer a simpler theory over a complex one: it is generally easier to use and less complex to determine its range of consequences. But these are pragmatic rather than epistemic reasons (van Fraassen [1980]), unless one assumes that the world is itself simple (in some sense). How, though, in a metaphysical context is it appropriate to assume that reality is simple? Empirical contexts at least sometimes permit us to overthrow any bias we might have for thinking some specific domain of reality is simple (or complex). More rather than fewer burglars might have been involved in the most recently solved caper, when compared to others. Where is the philosophical analogue that would serve the same function regarding metaphysical biases? It might be argued that both in empirical and in metaphysical contexts the fact that there are more phenomena than can be accounted for by positing only n instances (or only n kinds) gives reason for thinking there are at least $n + 1$ things (or kinds). But in this case we have independent reason to believe that the world is more complex than the theories in question allow for. It is not simplicity that is doing the

epistemic work, but empirical adequacy (in the empirical context) or adequacy relative to the relevant phenomena (in the metaphysical context).

In any case, the relevant metaphysical notion of simplicity needs to be formulated and defended. Similar points can be made about unification and expressive power. Both are useful, pragmatic features of theories: unified theories are more economical than less unified ones, and theories with more expressive power allow one to represent a broader range of phenomena with finer degrees of finesse. In both cases, nevertheless, there is no reason to think that the more unified or the more expressive theories are, the more likely they are to be true. Newtonian physics was far more unified than the previous theories, but despite that it was false. An inconsistent theory (assuming classical logic) is maximally expressive, but clearly not true. (For further difficulties faced by theoretical utility arguments, see Bueno and Shalkowski [2014].)

Finally, indispensability arguments fail to provide strong grounds for the introduction of new objects. The fact that certain entities are indispensable to our best theories of the world is not enough for the existence of such entities. After all, one can quantify over objects that don't exist —even objects that are indispensable to the theories in question. Average moms with 2.4 kids, despite being perhaps indispensable to the understanding of human populations (let's suppose, for the sake of argument, that they are), clearly do not exist (see Melia [1995]). The most fundamental feature of indispensability arguments shows them to be misguided. We are concerned about what there is and we appeal to what *we* must do? How did our limitations become even so much as relevant to that matter, generally speaking? Indeed, this is precisely the significance of the Melia point. What is needed to maximize our grasp of how things are is one thing, while the catalogue of what exists is something else altogether. All can agree with that. Those using indispensability arguments owe us some systematic treatment of how the catalogue

of what exists is correlated with how we must cope with our various limitations. Absent some case for the proper coordination of our limitations and the catalogue of what exists, it is hard to see how there could be any good epistemic grounds to embrace some pattern of inference so far removed from the mechanisms of adaptation. Moreover, even if indispensability considerations were enough to support belief in the existence of objects that need to be quantified over, nothing in the indispensability argument settles the issue of the nature of these objects – —whether they are abstract or concrete, universal or singular, individuals or not (Colyvan [2001], p. 150 concedes as much in the context of the philosophy of mathematics). In the end, it is a suspicious form of realism that recommends the existence of objects whose nature is left entirely unspecified (Ladyman [1998]). After all, in this case, the nature of the objects one is supposed to believe in is not settled by the argument. Indispensability considerations are just not the proper guide to ontology.

Indispensability theorists might see the matter differently – —as reflecting the argument's proper epistemic modesty. The aim is not to attempt to settle all issues about the entities the indispensability argument posits, but only to provide reason to believe in their existence. The situation, however, is more complicated. Without determining the nature of the objects the argument provides, the content of the resulting form of realism is under-specified. In the case of mathematics, the indispensability argument is compatible with a plethora of answers to the question of what mathematical objects are: they can be sets (of infinitely many kinds, depending on the set theory one adopts and its underlying logic; Jech [2003]), categories (again, of many different kinds, depending on the category theory one employs and its underlying logic; Awodey [2010]), neo-Fregean entities (Hale and Wright [2001]), modal-structural constructs (Hellman [1989]), mereological entities (Lewis [1991]), and so on. What exactly is the nature of the objects

one is supposed to believe given the indispensability argument? Without a proper and well-motivated answer to this question, the resulting ontology is simply not determined. As a result, the content of the proposed form of realism is not properly determined.

The received view is also problematic in its characterization of philosophical theorizing as being primarily *a priori*. One may think that there is a significant analogy between mathematical and philosophical theorizing. In fact, as we saw, Lewis ([1986], pp. 3–5) relies very heavily on such an analogy as part of his case for modal realism. Since mathematical knowledge is *a priori*, the argument goes, so is philosophical knowledge. How else could knowledge of modal relations among objects, or the proper analysis of concepts, which are so central to philosophical theorizing, be determined?

There are, however, significant problems with this analogy with mathematics. First, the epistemology of mathematics is recognized as one of the most challenging aspects of any philosophical account of mathematics – particularly for platonist views, which insist on the existence of mathematical objects, relations and structures. It is doubtful that this analogy has benefits from which philosophers can draw. What is really needed is an *account of* the *a priori* knowledge provided by mathematics rather than simply the assumption that one has such ontologically significant knowledge, which, somehow, shows that philosophical knowledge is equally unproblematic. Proofs play a key role in generating knowledge in mathematics, but they are typically lacking in philosophy – formal philosophy is, of course, the notable exception here. Thus, in general, much more prior work must be done before an analogy with mathematics could serve as the basis for the epistemology of philosophy.

Moreover, even if the analogy with mathematics were successful, the significant differences between mathematical and philosophical methodology would undermine the

motivation to take it very far. Although one may argue that conceptual analysis is crucial to both fields—mathematicians and philosophers are, after all, constantly engaging in such analyses—there is a fundamental difference in the requirements involved in each case. As opposed to what happens in philosophy, in mathematics it is common practice to introduce concepts that need not, and typically do not, bear any connections to the world, nor is there any expectation that they have any such connection. Even though some mathematical concepts may emerge from empirical considerations, this is not generally required. These concepts can be introduced *via* suitable comprehension principles with no connections with empirical features of reality. Mathematical reasoning can be used to forge new domains by drawing consequences from relevant (mathematical) principles. In this sense, if we are strict about what conceptual analysis demands, such an analysis is simply not part of mathematics. For this analysis is required to provide a specification of necessary and sufficient conditions to characterize a concept, which, in turn, is supposed to capture pre-theoretic data involving particular uses of informal features of it. This is absent in much of mathematics where new concepts, e.g., that of *inaccessible cardinal*, need not have any connections to empirical traits of the world. Why is this the case?

In set theory, it is said that a cardinal is *weakly inaccessible* just in case it is uncountable, regular (the cofinality of its order type is identical to its order type), and a limit cardinal (its index is a limit ordinal—an ordinal which is identical to the union of all of the sets that are members of it). A cardinal κ is *strongly inaccessible* just in case its cardinality is strictly higher than the cardinality of the natural numbers; it is regular, and a strong limit cardinal (that is, $2^{\lambda} < \kappa$, for every cardinal $\lambda < \kappa$; for details, see Jech [2003], p. 58). Inaccessible cardinals cannot be obtained from smaller cardinals by means of standard set-theoretic operations. Inaccessible cardinals are nonetheless important in the study of models of set theory. In particular, if κ is an

inaccessible cardinal, then the cumulative hierarchy V_κ is a model of Zermelo-Fraenkel set theory with the axiom of choice (ZFC) (for a proof, see, for instance, Jech [2003], p. 167). However, the existence of inaccessible cardinals cannot be proved in ZFC, nor can it be proved that the existence of inaccessible cardinals is consistent with ZFC, given Gödel's second incompleteness theorem (Jech [2003], p. 167).

It should be clear from these considerations that the concept of inaccessibility is inherently set-theoretic. The inaccessibility is a feature that can be fully expressed only in set-theoretic terms; it crucially relies on concepts such as that of a regular cardinal (which, in turn, depends on order types), as well as cardinal limit and ordinal limit. These concepts are not, in any way, answerable to any empirical application. They are, rather, internal developments of set theory. Throughout the articulation of these concepts, any pre-existing understanding of inaccessibility is irrelevant: the concepts are introduced relative to set-theoretic concepts with the goal (in part) of studying models of set theory. The only expectation is that they yield mathematically interesting and computationally tractable consequences (Azzouni [2006]). Not surprisingly, *a priori* considerations are, then, crucial to our knowledge of these set-theoretic objects.

Philosophical concepts, in contrast, *do* bear relations to the empirical world, and the relevant concepts—from *knowledge* to *justice*—are expected to maintain such relations. (We assume here that one is not an error theorist about concepts, but take them as having content.) An analysis of *knowledge* as justified true belief may seem to be adequate until Gettier-type circumstances are advanced that clearly satisfy these three conditions but fail to produce knowledge. A pre-theoretic understanding of knowledge is, thus, central to the characterization of this concept. This means that, as opposed to mathematical concepts, the adequacy of a

philosophical analysis depends upon external features – —that is, features that depend on our relation to the world – —and the analysis cannot be carried out independently of them. Experiencing these features is a key requirement for the analysis. One need not invoke any empirical consideration about limits to develop a mathematical conception of the limit of a function (even though empirical considerations could motivate the need for such a conception): the latter can simply be introduced by stipulation given suitable comprehension principles. In contrast, it is in virtue of relations we bear to items in the world that justified true beliefs may fail to be knowledge. Seeing a piece of wood on a trail and forming the justified belief that there is a snake there will not amount to knowledge, despite the fact that, unbeknownst to us, there is indeed a snake nearby on the trial. This kind of conceptual analysis, being dependent on our experience of the world, cannot, thus, be carried out *a priori*.

It may be argued that the Gettier case merely involves the refinement of a concept with empirical content. Philosophical methodology itself need not be empirical. After all, to find out about the conditions of knowledge – —in contrast to just applying the concept of knowledge – —one need not engage in any empirical investigation. A purely conceptual examination is enough. Note, however, that it would be inadequate to characterize *knowledge* simply by imposing conditions on the concept that are entirely divorced from the key traits that it has. One cannot simply stipulate that *knowledge* is so-and-so disregarding the way the concept has been pre-theoretically understood and the features that it has and which need to be preserved (even if some of these features may turn out, in retrospect, to be controversial). This is not a matter of stipulation. Any account of knowledge that identified knowledge with false belief would be clearly inadequate. So, it's not simply a matter of applying a concept with empirical content. In

order to properly determine the content of the concept that is being analyzed, attention to its empirical content is crucial.

What the Gettier case illustrates is a significant feature of philosophical analysis: there is a back and forth, dynamical process between some prior, pre-theoretical understanding of the concept under analysis and the proposed characterization of the concept. In contrast to the set-theoretical case involving inaccessible cardinals, when we deal with philosophical concepts, this process requires empirical content – —as a central component of the specification of the concept's content – —without which the analysis cannot be properly implemented.

One may insist that philosophical analysis only requires thought experiments, such as Gettier's. Nothing empirical is really *required*. But this response fails to appreciate the empirical content of the concepts under consideration. It's not a matter of simply stipulating the conditions for the applicability of the concepts, since they already have a pre-theoretical use, and at least some of that use needs to be preserved. Otherwise, rather than providing an analysis of the relevant concept, one would offer the stipulation of a new one.

Should the resulting conceptual analysis be true? The concern here is that, as we just noted, the typical forms of inference invoked by the received view to achieve this goal are seriously defective: inference to the best explanation is invalid and not generally reliable; theoretical utility considerations are not truth-preserving, and the indispensability argument fails to establish the indispensable ontology with the required specification. In each case, it is unclear how the received view is in a position to establish that philosophical theorizing is truth-conducive.

Finally, to the extent that the received view aims to describe non-contingent objects, one may question how such a goal is supposed to be achieved, given the dependence of philosophical

concepts on features of a concrete – —and, thus, ultimately contingent – —world. Since philosophical concepts are grounded in the world, and the successful implementation of conceptual analysis depends on traits of the world, it is difficult to see how the resulting description will fully capture the allegedly non-contingent nature of the objects involved.

The received view clearly focuses on objects, which are posited for explanatory purposes, to unify approaches to apparently unrelated philosophical problems, and to systematize experience. The focus on objects provides a problematic picture of philosophical theorizing, given the inadequacy of the resources employed by the received-view theorists to secure reference to these objects. The focus on extending one's ontology is similarly problematic, and has led to ontologically inflationary metaphysical views. Other things being equal, such moves should be avoided whenever possible.

4. ~~an~~ An alternative: a modalist view

Given the difficulties faced by the received view, we advance a modalist alternative to the received view, and argue that none of the concerns that we have raised apply to it. The modalist approach we favor recognizes the non-*a priori* character of philosophical theorizing, the fact that it is empirically grounded, and that it need not aim at the truth. Moreover, inference to the best explanation, theoretical utility considerations and the indispensability argument play no role in the resulting view, which is not geared toward the increase of ontology, but rather identifies the role of underlying modal notions to the understanding of relevant possibilities.

According to modalism, primitive modal notions are ultimately presupposed, in particular, in the (non-reductive) analysis of concepts such as possibility and necessity, logical space, and logical consequence. Rather than trying to provide reductive accounts of these notions in non-modal terms, the modalist emphasizes the significance of a primitive modal notion of

consistency for their characterization (see Bueno and Shalkowski [2009], [2013], and [2014]). In fact, even those who aim to provide reductive characterizations of the concepts above, such as modal realists (regarding necessity, possibility, and logical space), and those who favor a model-theoretic account (regarding logical consequence), to mention just a few examples, ultimately depend on a primitive notion of possibility.

Without such a notion, it is unclear how the modal realist could ensure that *all* possibilities in fact correspond to worlds in which the relevant situations are true; nor could it be guaranteed that no *im*possibility is associated with the corresponding truth of a situation in a world. In order for this point to go through, the modal realist needs to ensure that there is a complete match, respectively, between all the possibilities and what holds in some world, on the one hand, and all the impossibilities and what holds in no world, on the other. This, in turn, requires the presence of conditions between possibilities and impossibilities that are prior to worlds—for they need to be in place for the adequacy of such worlds—and, thus, primitive possibility is ultimately presupposed. For the same reason, to ensure that there are no gaps in logical space—so that to every possibility there is a world that answers to it—and to guarantee that no impossibility is represented as something possible—and, thus, for no impossibility there is a world that stands for it—primitive possibility is similarly required.

On the model-theoretic account of logical consequence, in order to guarantee that all possibilities are properly represented in a model—so that, in a valid argument, every model in which the premises are true the conclusion is also true—primitive possibility is also presupposed. If some impossibilities (such as contradictions) are represented as being true in a model, arguments that are classically valid (e.g., explosion, according to which everything follows from a contradiction) is invalid according to that representation. If some possibilities are

not represented in a model (such as that it is determined whether an object has or does not have a given property), some of classical logic's truths (e.g. excluded middle) come out as false, according to that representation.

Thus conceived, modalism introduces no new objects in philosophical theorizing. The goal is not to posit objects as proxy for the characterization of certain concepts, as the modal realist does by formulating possibilities in terms of what is true in some possible worlds. In contrast, the modalist explores the constraints imposed by what is possible in the characterization of the relevant philosophical concepts. Possibility, we noted, is primitive for the modalist, but nothing more than logical consistency needs to be assumed. Logical consequence, not surprisingly, is understood modally: in a valid argument, the conjunction of the premises and the negation of the conclusion is not possible. The structure of the logical space is similarly modal, since the scope of what is possible—and, by elimination, impossible—which is exhibited in that space is fundamentally a modal matter. In this way, modalism provides a no-objects alternative to the received view.

The strategy of introducing additional ontology to do philosophical work can be costly for a number of reasons. In particular, a well-developed theory incorporating some of this ontology must make available an account of the nature of our access to all items in the ontology. Given the abstract nature of the objects that are introduced, which are typically nowhere and nowhen located or otherwise causally inaccessible, *some* account is needed of exactly how one has a proper grasp of both their existence and the specifics of their characters. Only the most reasonable expectation that a sophisticated ontology should be genuinely integrated with a sophisticated epistemology is required. The specifics of that integration upon which we rely is

minimal. The abstract nature of the posited ontology does nothing to reduce the demand for this integration and it at least appears to make a proper explanation of one's access to it intractable.

For example, suppose that an ontology of facts (or propositions or state of affairs) is introduced to account for the content of one's beliefs or to be the truth-bearers for one's statements. One could argue that facts have the required good features for the job: they are objective, language independent, and invariant over changes of belief. They are also abstract, since facts – —particularly when understood as propositions – —are causally inert and are not spatiotemporally located. Significantly, facts have the good features they have ultimately in virtue of being abstract. Since they are causally inactive, facts are invariant over changes of belief and independent of any linguistic uses and conventions. They are what they are whatever one's beliefs turn out to be and however one refers to them. As a result, facts are objective, in that they are not dependent on the mental states and linguistic practices of those who entertain them.

The abstract nature of facts is not only their virtue, it is also their primary vice, since it leaves this kind of fact theorist with the same epistemological problems that plague all kinds of abstracta. Some account needs to be offered of how one could obtain reliable beliefs about them. Since facts are supposed to be what they are independently of what we take them to be, fact theorists owe us an explanation of how we can have any knowledge of them at all. It is precisely their ontological independence that complicates their epistemology. And without a suitable epistemological account of one's access to this special ontology, the alleged benefits of their introduction into ontology (such as, as noted, guaranteeing the objectivity of one's knowledge claims or of the truth conditions introduced for one's language) are at best secured on the basis of a promissory note. Until fact theorists make good on that note, they are not entitled to claim any real benefit of this ontological addition.

Those who introduce the additional ontology are, of course, aware of this concern. One significant strategy that has been developed to address the worry is to insist that the access to the new ontology is quite easy: a strategy that, not surprisingly, provides an easy approach to ontology (for the most thorough discussion and careful defense of this approach, see Thomasson [forthcoming]). The central idea of the easy approach is that all that it takes for the introduction of the relevant objects in metaphysics is the formulation of suitable identity and persistence conditions for them. This strategy is exemplified, for instance, by the neo-Fregean approach in the philosophy of mathematics (Hale and Wright [2001]). Central to this approach is the formulation of acceptable abstraction principles, such as Hume's principle, according to which the number of *Fs* is the same as the number of *Gs* if, and only if, *F* and *G* are equinumerous (that is, there is a one-to-one correspondence between them). Using Hume's principle plus some definitions (in a second-order logic), it's possible to derive the axioms of second-order Peano Arithmetic (Frege's theorem), and thus reconstruct arithmetic as part of logic plus definitions.

The problem, however, is to identify precisely which abstraction principles are indeed acceptable. Frege himself, in his logicist reconstruction of arithmetic, invoked another abstraction principle in the derivation of Hume's principle: the notorious Basic Law V, which despite its apparently unproblematic character and analytic status turned out to be inconsistent (due to Russell's paradox). So how could one avoid the 'bad company' of such inconsistent abstraction principles? One might insist that abstraction principles are acceptable as long as they are *stable*, that is, provided that the principles are satisfiable, and if satisfiable at a domain of cardinality κ, they are also satisfiable at every domain of cardinality greater than κ (Hale and Wright [2001], p. 427, footnote 14; see also Fine [2002] and Weir [2003] for further developments, and Linnebo and Uzquiano [2009] for limitative results). But to make sense of this notion of stability one

needs to assume a set-theoretic background, within which one formulates the model-theoretic apparatus required for the satisfiability of the relevant abstraction principles, which includes the specification of the cardinality of the relevant domains. It is a curious feature of what was supposedly an easy ontology that its acceptability turns out to depend on an ontologically highly inflationary and non-trivial theory (set theory). This casts some doubt, at least absent a fully logicist reconstruction of set theory itself, on the adequacy and easiness of the proposed ontology.

The form of philosophical analysis suggested here also differs from the received view in that the goal is not to provide necessary and sufficient conditions for the characterization of concepts, but rather to specify the range of the domain of the concepts in question. The analysis is directed to, and emerges from, the world. After all, the components of the analysis are features of reality that are classified and grouped together *via* the concepts under consideration. As noted above regarding the contrast between mathematical and philosophical theorizing, the analysis of philosophical concepts recommended by the modalist emerges from the back-and-forth process of interaction between pre-theoretic notions and their philosophical refinements. In order to specify properly the content of philosophical concepts, this process requires sensitivity and attention to the empirical character of the concepts involved. Otherwise, the relevant analysis cannot be developed adequately. As we saw, in contrast to what happens with the introduction of mathematical concepts, purely *a priori* considerations are inadequate for this task. The success of the enterprise requires its empirical grounding.

In contrast with the received view, the modalist approach does not characterize philosophical theorizing as aiming to establish the truth. Having truth as a goal has the significant drawback that one is not in a position to know whether the goal has been achieved even if one happened to stumble upon the truth. Rather, the modalist emphasizes that *understanding* is a far

more significant norm. By examining the various possibilities involved in a given topic, one can appreciate how the world could be, even if some of these possibilities turn out not to be the case. And one can have understanding even if some of the assumptions are false. Newtonian physics provides understanding of the world despite being false. Rawls' theory of justice and the neo-Fregean approach in the philosophy of mathematics, to mention a couple of examples, also provide understanding, independently of their truth-values. Even if the proper size of the state is not the one recommended by Rawls, his account gives us understanding of how the world could be if the state were as his theory prescribes. Even if it turns out that mathematical objects do not exist, the neo-Fregean approach gives us understanding of how mathematical objects can be characterized by (second-order) logic and definitions alone. In both cases we gain understanding, whether the theories in question are ultimately true or not.

It may be argued that, absent the requirement of truth, one can have at best approximate understanding rather than correct understanding. After all, the latter requires the truth of the theories that are invoked. And if truth is too demanding a goal, one can always adjust the enterprise's aim and settle for a weaker notion of truth approximation (rather than truth). In either case, non-factive understanding is bypassed.

There are, however, problems with both suggestions. Correct understanding, as a goal, faces precisely the same difficulty that truth does. Since correct understanding presupposes the truth of the relevant theories, one is not in a position to know whether one has reached that goal even if one happens to have reached it. In this respect, truth approximation may seem more promising. But it is an entirely open issue how to characterize properly this notion. Decades of sustained philosophical effort in this area have failed to generate a compelling, unproblematic account. Most accounts face the problem of language dependence (see Miller [1994] and [2006]):

it is a matter of sheer linguistic formulation which of two equivalent theories is closer to, or further away, from the truth. But one would expect that closeness to truth should not be a linguistic matter. In the end, one cannot recommend relying on a notion whose formulation is so poorly implemented.

But additional challenges emerge for the understanding-based proposal. Does any philosophical theory fail to provide understanding? That is, does the appeal to understanding degenerate into vacuity? If understanding is so cheap, how can it be desirable or useful? In response, we deny the charge of cheapness. The proposal is that, despite not being necessarily factive, understanding emerges as long as the relevant theories cohere with the remaining background of accepted views (or views that can be seriously entertained). But this means that even an inconsistent theory can provide understanding—as long as it is not trivial, that is, as long as not everything follows from it. In this way, Frege's logicism does provide understanding despite its inconsistency (assuming the underlying logic is paraconsistent). So understanding is not so easily obtained, since coherence needs to be in place. (For an account of coherence even in inconsistent contexts, see da Costa and Bueno [2007].)

But an additional challenge can be advanced. Suppose that laws of nature are metaphysically necessary. In this case, Newtonian physics describes a metaphysically impossible world, and so it does not account for how our world could be. This generates, in turn, a dilemma: Either a necessarily false theory can provide understanding—in which case the worry of vacuity emerges—or it does not—in which case what can be said about the apparent understanding that Newtonian physics confers? In response, one should first question the intelligibility of the idea that laws of nature are metaphysically necessary. It is unclear that there is a robust sense of necessity that preserves both the alleged truth of such laws and the inferential

role they are expected to play in scientific practice (see van Fraassen [1989]). But even if we grant, for the sake of argument, that laws of nature are metaphysically necessary, we note that a necessarily false theory can provide understanding, as long as it coheres with the relevant accepted views, which Newtonian theory, by and large, did. It ultimately dislodged the established Cartesian metaphysics that was, to ~~sa~~some extent, in tension with it. In the end, the resulting theory, even if false, did provide understanding, given the coherence of the whole.

Finally, given that objects are not introduced, the modalist does not invoke the three typical arguments from the received view that support increasing one's ontology. Neither inference to the best explanation nor any other form of inductive inference plays any role in the case for modalism. Without the need for supporting a new ontology of objects, the attempt at identifying them *via* suitable explanatory considerations does not arise. For the same reason, there is no need for the modalist to invoke theoretical utility arguments, given that the view does not depend on identifying suitable objects that are introduced *via* theoretical considerations. Finally, the indispensability argument is similarly not employed: the modalist introduces no ontology on the grounds that it is indispensable to do so.

It should be noted that the modalism we advocate is not a Quinean position, despite some common features in these views. Like Quine, we reject any special role for *a priori* considerations in philosophical theorizing, although for different reasons. The Quinean denies the existence of the analytic/synthetic distinction, and insists on the ultimate synthetic character of any philosophical knowledge, which is continuous ~~to~~ with scientific knowledge. We emphasize the importance of (non-reductive) conceptual analyses whose grounds ultimately depend on features of the world. Moreover, both the Quinean and we insist on the empirical basis of philosophical knowledge.

There are, however, significant differences as well. The Quinean avoids any commitment to modality, thus denying the central trait of modalism. The Quinean also endorses the indispensability argument, and uses it in support of platonism about mathematics (being committed, in particular, to the existence of classes). We reject the form of argument as irrelevant and see no adequate grounds for embracing the ontology. Despite being sympathetic to some forms of naturalism, modalists think that there is room for philosophical issues that are not just a matter of empirical investigation, but emerge from conceptual analyses, even though, as argued above, empirical information is certainly crucial for the enterprise.

5. ~~conclusion~~Conclusion

We started this chapter by identifying the central features of the received view of philosophical theorizing, according to which its doctrines deal with the non-contingent, are defended on *a priori* grounds, and aimed at being true. Central to this view are forms of ontological augmentation arguments, such as inference to the best explanation, the theoretical utility argument, and the indispensability argument.

After examining critically the received view, we sketched a modalist alternative, which resists the need to introduce additional ontology and insists on the importance of assuming a primitive concept of possibility. We concluded by showing that the shortcomings of the received view are not faced by the modalist alternative we favor. There is, no doubt, much to be developed and articulated further, but we hope we have said enough to at least motivate the attraction of the alternative.

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