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## BOOK REVIEWS

Oppy, Graham, *Philosophical Perspectives on Infinity*, Cambridge: Cambridge University Press, 2006, pp. xv + 316, AU\$140 (cloth). 5

Graham Oppy's book, *Philosophical Perspectives on Infinity* delivers exactly what its title suggests: a critical synopsis and synthesis of views and debates on the infinite in various areas of thought (physics, decision theory, mathematics, mereology, to name a few). Oppy is generally 'a friend of the infinite' and aims to defend the idea of the actual infinite from the charge of incoherence and from the idea that it leads inevitably to all sorts of paradoxes. He also aims to examine evidence from a range of fields—physics, mathematics, decision theory, and so on—to see whether these theories involve an at least prima facie commitment to the existence of infinities. 10  
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The range of topics is truly comprehensive. Chapters 1, 2, and 3 discuss a great range of traditional paradoxes concerning the infinite and provide an exposition of the mathematical background necessary to discuss these paradoxes in a sophisticated way. Oppy's general stance in these chapters is that the paradoxes do not demonstrate the incoherence of the very notion of an actual infinite. Chapters 4 and 5 address the issue of whether space-time, and other aspects of physical reality should be characterized as infinite in some way. Chapter 6 considers whether it makes sense to allow utility calculations, of the sort used in decision theory, for example, to take on infinite value. Chapters 7, 8, and 9 cover ground perhaps most familiar to philosophers: mereology, the metaphysics of mathematics, and the principle of sufficient reason (and the notion of infinite regress). 20  
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The Preface informs us that the book is part of a larger project that will explore the role of the infinite in philosophy of religion in particular. Although convinced that traditional arguments for the existence of God are 'fairly worthless' (as logical arguments), Oppy nonetheless thinks that there are conceptions of the infinite that cohere well with orthodox monotheism. Readers who expect more work in the philosophy of religion, however, will be looking in the wrong place. There is a slender analysis of some of the concepts involved in the cosmological argument in Chapter 9. Oppy's aim is to provide an analysis of some of the key concepts rather than to assess the validity of the cosmological argument as a whole. 30  
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Oppy's main method is to gather evidence from various fields of scientific endeavour, to see whether the best theories in those fields have a bearing on the philosophical question of whether there are infinities in nature. Given his method, it would seem to be especially important to be clear about when a theory is committed to the existence of infinities or not. Oppy, however, declines to develop too much a priori methodology associated with this important question. (The discussion is confined to Section 5.3: 150–2.) He indicates that he doesn't think Quine is correct to hold that quantification *simpliciter* is the mark of ontological commitment. 40

45 Instead, he takes the view that quantification in a canonical theory *may* be ontologically committing. As such, he judges theories on a case by case basis. Furthermore, Oppy is studiously agnostic about the question of our epistemic evidence for modalities (in Chapter 5). The issue of whether conceivability is a good guide to possibility is obviously relevant for his project. Some such modal maxim is  
50 inherent in the general method of surveying theories and scenarios in order to determine whether an entity is possible or not. It would have been good to see more discussion of this point.

Oppy discusses cosmological questions, both with reference to Kant and contemporary physics in Chapters 4, 5, and 7. His discussion of Kant's first and second antinomies is brief but vigorous. He argues that all of the arguments on both sides of  
55 the first antinomy are fallacious. 'There is not one of his [Kant's] proofs in the first antinomy that is anything other than a tissue of errors' [115]. His criticisms of Kant are persuasive. In particular, with reference to Kant's first antinomy (in Chapter 4) he emphasizes that from the mere fact that we cannot perceive or construct an infinite object, it does not follow that such an object does not exist. With reference to  
60 Kant's second antinomy (in Chapter 7) he rightly emphasizes that there is no inherent [logical] impossibility that militates against infinitely descending chains (those that do not terminate in atoms).

Chapter 5 is dedicated to the examination of whether physical quantities *within* space-time take on infinite values. The chapter covers a diverse number of topics, from why the night sky is dark to the question of infinite temperatures in the universe. Oppy also includes a discussion of renormalization of infinities in quantum mechanics and quantum field theory. These unrenormalized infinities have plagued attempts to develop finitist versions of quantum mechanics [115]. However, Oppy cautiously concludes that the issue of unrenormalized infinities does not by itself demonstrate that there are inexorable infinities in nature. Non-specialists will find parts of this discussion difficult to follow.  
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Chapter 8 covers the philosophy of mathematics as it relates to the topic of infinity. Some useful distinctions are drawn between various kinds of infinities: such as (a) potential vs. actual, (b) completed vs. potential, and (c) abstract vs. concrete. The discussion of (a) usefully distinguishes between all the various ways of alternating quantifiers and modalities so as to make statements having infinite models. 'Completed' (C) infinities are said to be obtained by 'completing' a sequence of elements such that (i) there is a first element ordered by R, and (ii) the elements are linearly ordered by R, and (iii) R is a relation that could be generative or ancestral (e.g., 'x is the offspring of y', 'x is the day before y', 'x is the cause of y'). Infinite regresses are defined in Chapter 9 as C-orderings in which there is no first element under that C-ordering. This definition makes infinite regresses impossible by definition. However, it isn't obvious that the notion of an infinite regress is an outright contradiction.  
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Specialists in philosophy of mathematics will not find much that is new in Chapter 8, although many distinctions are usefully laid out. Oppy briefly discusses *the distinction between abstract and concrete objects*, which is arguably fundamental to developing any view about the metaphysics of mathematics. He proposes that an object O is abstract just in case it is 'neither an embedder of nor embedded in a network of causal relations' [242]. He realizes the whole of the physical universe (space-time) may be a counter-example to this claim, but this fact gets a one sentence  
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mention. He claims his criterion gives ‘the right result’ because it classifies sets and numbers as abstract. He thus passes over entirely empiricist and Aristotelian realist approaches to philosophy of mathematics such as Maddy’s *Realism in Mathematics* (Oxford 1990) and modal structural variants of nominalism such as Hellman’s *Mathematics without Numbers* (Oxford 1989). He notes in passing that Lewisian worlds also defy his criterion, because they are concrete but causally isolated from us. 95

Oppy provides a nice discussion of Shaughan Lavine’s book, *Understanding the Infinite* (Harvard 1994) in Section 8.5. He also relies on Lavine’s work in much of Chapter 8 as he acknowledges. Lavine argues that we can have rational beliefs about infinite objects (such as sets) in mathematics, because our beliefs are ultimately derived from our epistemically unproblematic intuitions concerning *indefinitely large but finite* objects. Lavine’s project in effect promotes an up to date empiricist theory of infinity, whereby our understanding of the infinite is derived from the finite (which we can experience) by means of extrapolation. Oppy asks why, if Lavine’s view is correct, we should prefer infinitary mathematics to a finitary version concerning the indefinitely large. One obvious reason is that we get statements about arithmetic in finitary mathematics that do not carry over to classical mathematics, such as the claim ‘There is a largest number’ ( $\exists x \forall y (x \geq y)$ ). Oppy’s suggestion is that, if Lavine’s view is correct, classical infinitary mathematics is less relativized to context and human abilities than is finitary mathematics. In finitary mathematics all quantification is relativized to the upper bound of some indefinitely large number. A number is deemed ‘indefinitely large’ in a given context if it is practically inaccessible by counting or other means. 100 105 110 115

Chapter 9 tackles the twin topics of infinite regresses and the principle of sufficient reason. On the standard view, it is usually claimed that an infinite regress (of causes, for example) would violate the principle of sufficient reason (PSR). Oppy does not think that violation of the PSR captures what is at issue with an infinite regress. He proposes instead that infinite regresses exist when a certain infinite ‘C\*’ structure is exemplified. A C\* structure is a C ordering for which even a partial explanation (under the PSR) does not extend to the first element of C-ordering. The controversy then shifts onto determining whether a structure has a C\* structure. For example, those who hold there are initial events (and some uncaused first event, such as ‘the big bang’) will suppose the chain of causes forms a C\* ordering. Elsewhere in the chapter he argues from the possibility of a brutally contingent maximal state of affairs to the conclusion that strong versions of the PSR must be false. Strong versions of the PSR are those on which the proposed explanations are expected to *necessitate* the propositions about the explanandums. This chapter is one of the more philosophically interesting in the book, and the most related to Oppy’s original aim. It prepares the ground conceptually for a critique of cosmological arguments for God’s existence. One would have liked a bit more of an explicit discussion of the philosophical conclusions that might be drawn. 120 125 130

In conclusion, Oppy does not dogmatically advocate any one position regarding infinity in the book. He sees at least four positions as live options. Two of these options, finitism and actual infinitism, are diametrically opposed. This neutrality will disappoint readers looking for the development of a fresh perspective on infinity. Nevertheless, it is appropriate for a handbook. Moreover, it is rare to find such a comprehensive survey of all the different appearances of the concept of infinity in the 135 140

sciences. Oppy's book will be useful to researchers and teachers in the areas of metaphysics, philosophy of mathematics, and philosophy of religion.

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Mumford, Stephen, *David Armstrong*, Stocksfield: Acumen, 2007, pp. x + 206, £45.00 (cloth), £11.99 (paper).

Here it is at last: the well-informed two hundred page introduction that steers the reader reliably through all main phases, topics, and theses of D. M. Armstrong's philosophical work; it clearly organized, well written, free of loquacity, and even without footnotes. Based on superior knowledge of Armstrong's philosophy, the book furnishes an argument-oriented account of his naturalistic metaphysics and theory of mind and knowledge. Armstrong's views are presented with their pros and cons compared to competing conceptions. The book's non-technical and truly introductory style makes it perfectly accessible even to beginning undergraduates. Going through the chapters on metaphysics may not be the worst way to get an overview of contemporary analytic metaphysics. At the same time the book will be valuable for connoisseurs. They will benefit from the accentuation of the essential tenets and arguments, the numerous cross-references between the different theorems, the hints about revisions and refinements of Armstrong's views during the long development of his thinking; they will also benefit from Mumford's unintrusive but clear critical suggestions. Armstrong's views on a topic are in each case exposed by outlining one of his books that predominantly deals with that issue. This yields both an almost chronological portrait of Armstrong's intellectual development and a traceable stepwise exhibition of his philosophy.

After some essentials about Armstrong's academic career and an illuminating introduction to his naturalistic and science-oriented stance as well as of his methodological convictions, the theory of universals is presented mainly on the basis of *Universals and Scientific Realism* [1978]. The reader is induced into the core idea of the One Over Many, of a universal's providing a genuine identity through the Many. Armstrong's naturalistic immanent realism is exposed as a middle way between nominalism and transcendent 'Platonic' realism. One might find fault with the somewhat uncritical discussion of the argument of One Over Many, given Oliver's [1996] thorough critique to the effect that Armstrong switches between quite different formulations of its premise. One would also have wished more hints to further developments of Armstrong's views. A fine decision is to spend three pages on G. Rodríguez-Pereyra's defence of resemblance nominalism. But Lewis's conception of primitively natural classes is inadequately dismissed within four lines as a version of 'ostrich nominalism' [24].

In the next chapter, which focuses on *What is a Law of Nature?* [1983], Mumford introduces the naive regularity account and the best system view, presents and discusses Armstrong's conception of laws as second-order relational facts about universals, and concludes with a critical sketch of essentialism about laws. One might find it underestimated that the best system account has some resources to solve problems that threaten naive regularism, such as accounting for the necessity of laws,

for their role in explanation, for their capability of inductive support, and for their ability to support counterfactuals. Also Armstrong's double-role view of laws as both states of affairs and structural universals might have been explained more clearly. But the presentation of the idea of a nomic relation and of Armstrong's ambition to use it in a theory of causation that reconciles the covering law and the locality intuition are illuminating, as is the spotlighting of problems such as the challenges to account for functional laws [52] and for the connection between laws and regularities without either running into a vicious regress or relying on a primitive absolute necessity [55]. Later T. Handfield's excitatory challenge is added that Armstrongian laws look like big irreducible dispositions [93]. 190 195

The chapter on possibility is a felicitous presentation of the core conception of *A Combinatorial Theory of Possibility* [1989] against the background of existing theories of possibility such as Lewis's conception of real possible worlds and the construction of ersatz possible worlds. Rightly Mumford avers the centrality of the Humean principle 'no necessary connections between distinct existences' for Armstrong's combinatorialism. However, the supposed advantages of fictionalistic combinatorialism over a sparse-language linguistic ersatzism seem at most indicated by mentioning the rejection of any kind of world transcendent abstracta [65]. 200 205

When it comes to dispositions, the author is completely in his element. After a dismissal of simple conditional analyses of disposition ascriptions he goes through several views of dispositions as more or less basic features and then presents Armstrong's reductive account. What might have been said more clearly is that Armstrong's view is but one species of reductive accounts that combine the idea of a categorical basis with that of laws of nature. 210

The book's apex is the chapter on states of affairs. Building on the notions and theorems previously introduced, Mumford provides a lucid summary of the core doctrine of Armstrong's metaphysical synthesis, *A World of States of Affairs* [1997]. Whenever the presentation seems unclear this is due to substantial tensions or problems within Armstrong's doctrine, in particular in his account of universals as 'guttled' states of affairs. In the chapter on universals Mumford's discussion of Armstrong's account of how particulars and universals come together is rather charitable. There he writes that for Armstrong 'the distinction between particulars and universals' is merely 'formal'. 'A particular such as *a*, abstracted away from all its properties, is not an existent in its own right. Such "thin" particulars would be propertyless substrata . . . . All particulars that exist are thick, as stated by the *Rejection of Bare Particulars*' [29–30]. But this principle reads: 'For each particular, *x*, there exists at least one universal, *U*, such that *x* is *U*' [29]. On the face of it, the principle is one to the effect that no thin particular can exist without being tied to at least one universal. This hardly entails that such particulars do not exist. Similarly, the fact that universals can only occur tied to a particular cannot mean that they do not exist. One who denies their existence would cease to be a realist about universals. To say that universals do not exist but are nevertheless real is of little help. Now Mumford makes a similar point: 'Particulars and universals exist only as abstractions from states of affairs. . . . Both abstraction and partial consideration sound too much like mind-dependence. If one really is to hold to a state of affairs ontology, it might be that universals and particulars will have to be sacrificed' [104–5]. 215 220 225 230

In the last chapter Mumford somewhat stunningly turns to a recent U-turn in Armstrong's most basic ontological views. In *Truth and Truthmakers* [2004] 235

Armstrong claims that particulars have their universals necessarily and, even more surprisingly, that universals have their instances necessarily. Mumford's critique of this latter claim is devastating. Armstrong has given up the necessity of instances while standing by the necessity of the universals a particular instantiates. Mumford rejects this asymmetrical necessity of instantiation straight away as ad hoc [191], but it seems to have always been lurking behind the view of universals as not things but ways things are. Facing the two hypotheses that instantiation is contingent and that it is necessary, Armstrong has already remarked [1997: 268]: 'I certainly lean to the necessitarian hypothesis'. Be this as it may, at this point a less respectful writer might have concluded that after so many years no tenable account has been provided of how particulars and universals exist as non-mereological constituents in states of affairs and that this dream is over.

It is plausible that understanding the link between particulars and universals as necessary was made possible by Armstrong's abandonment of combinatorialism. That something is possible is no longer accounted for in terms of combinatorial world fictions, but in terms of truthmakers for modal propositions. The chapter on truthmaking stresses that this idea gradually became the governing principle of Armstrong's philosophy. Mumford introduces Armstrong's views of the truthmaking relation and its relata, his maximalism about truthmaking, and his suggestions for truthmakers for all kinds of truths.

In the chapters on sensations and perceptions and on the metaphysics of mind one sees the young Armstrong struggle through the jungle of traditional phenomenalism and representationalism about perception, of dualism, behaviourism, and early materialism about the mind, until he arrives at his direct realism and his groundbreaking analytic functionalism *avant la lettre*. The reader will note Armstrong's identification of the mental with the intentional [136] and of consciousness with second-order inner perception [144]. The importance of Armstrong's theory of bodily experience for our alleged grasp of the nomic relation is mentioned [116]. Two trifles: A clearer distinction between sense impressions and sense-data might have been drawn [120], and intentional inexistence does not mean possible non-existence of the intentional object [146]. The chapter on belief and knowledge presents Armstrong as an externalistic reliabilistic foundationalist about knowledge, but his view is not explicitly contrasted with internalism and coherentism.

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## Reference

Oliver, A. 1996, The Metaphysics of Properties, *Mind* 105: 1–80.

Hetherington, Stephen, ed., *Aspects of Knowing: Epistemological Essays*, Sydney: Elsevier, 2006, pp. x + 246, AU\$110 (cloth).

There are two issues of concern in any edited collection: the quality of the essays and the unity of their subject matter. In Stephen Hetherington's *Aspects of Knowing*, he hopes to organize the selections around two Quinean questions: first, to what extent

epistemology should be integrated with science and, second, whether the concept of knowledge should be eliminated because it is not capable of sufficiently precise formulation. 285

To the extent the essays deal with these questions, their treatment is largely implicit. The essays in the first part—Part A, ostensibly where Quine’s positive answer to the first question is ‘tested’ [10]—do not explicitly discuss science much at all. One essay—Peter Forrest’s ‘Epistemic Bootstrapping’—gives a Bayesian argument that we can refute scepticism simply by assuming that we are warranted in believing that we are ‘vat-free’ if indeed we are vat-free. This perhaps reflects, in a Quinean spirit, the possibility of asking questions about our justificatory systems from within, afloat on Neurath’s boat. But the essays in Part A are predominantly about scepticism, and even Forrest’s essay is most interestingly on that subject. The essays in the second part—Part B, intended to be a ‘reaction’ [10] to Quine’s positive answer to the second question—do not explicitly discuss the elimination of the concept of knowledge. Instead they are devoted to clarifying the concept and discussing its application in various domains. If we can come to understand knowledge better, we will have an avenue toward a negative answer to the second question. But nowhere in either part do we find essays that are explicitly about either of Hetherington’s two questions. 290 295 300

Nor are the essays as explicitly concerned with Quine as one suspects Hetherington hoped. The first contributed essay, Tim Oakley’s ‘A Problem About Epistemic Dependence’, is an argument that the notion of epistemic dependence—so crucial to the formulation of justificatory foundationalism—cannot be coherently formulated in the context of *doxastic* justification; the much discussed ‘basing’ relation is only really applicable in the context of *personal* justification. In the introduction, Hetherington segues to Oakley’s essay by noting that, ‘At the heart of Quine’s naturalization of epistemology is the notion of our basing beliefs upon sensory input, our basing our theories upon evidence’ [8]. But the fact that Oakley’s essay is concerned with a concept (basing) that is used in Quine’s system does not make Oakley’s essay about Quine or Quinean questions. 305 310

Likewise with the essays in Part B. Hetherington asks, ‘Must we heed Quine’s warning? *Should* we accept that no adequate understanding of knowledge is possible? In fact, Quine did not say very much about what knowledge is. But our next two essays, by Adrian Heathcote and André Gallois, do so’ [10]. Indeed they do: Heathcote’s excellent essay is an argument that we can solve (at least classical) Gettier problems by noting that, in Gettier’s examples, the subjects’ evidence is not evidence for the facts that make the relevant propositions true. So, we should include in the conditions of X knowing *A* a condition stating that ‘the evidence that X has which constitutes the justification is evidence of the very state of affairs that makes *A* true’ [165]. There is less attention paid to Goldman-type barn cases—where the subject’s evidence is also evidence for the very fact that makes the relevant proposition true. Heathcote doesn’t describe these cases in any detail, referring to them only as ‘Ginet-Goldman-style counterexamples’, and his approach—to bite the bullet and claim that the subject does have knowledge—is not entirely satisfying; but his treatment of the original and related Gettier cases is both rigorous and convincing. 315 320 325

Gallois’s essay is an argument that knowledge is having the right to be sure, and that this avoids Gettier difficulties because in Gettier situations, the subject generally 330

335 doesn't have the right to be sure—no right to be sure in the sense that it would be epistemically permissible in such situations to prevent the subject from being sure. (This characterization of the right to be sure, however, seems to undermine Gallois's claim that the right to be sure is necessary for knowledge. For, it is epistemically permissible for me to prevent you from being sure if it is justified for me that you are Gettiered. Nonetheless, if it is false that you are Gettiered, you will still count as knowing. Therefore, you will lack the right to be sure, in the sense that you will be permissibly prevented from being sure. But you will still know.) Neither Gallois's nor Heathcote's argument seems best characterized as a testing of Quine's eliminativism. Nor, it seems, does Anne Newstead's paper testing Anscombe's claim that 'agents have non-observational knowledge of their own intentional actions' [183].

340 The back cover of the book suggests two other guiding questions, both of which are more explicitly dealt with in the actual essays: '(1) is knowledge precisely definable?' and '(2) What, if any, knowledge is attainable?'. (1) is dealt with in Part B, (2) in part A, where there is an admirable distribution of attitudes regarding the sceptical problem. Roger White's essay on Moore's proof assumes that we have mundane knowledge and seeks to draw lessons from Moore's proof even given that assumption while David Macarthur seems to assume the opposite: that scepticism is inevitable and in need of diagnosis (his diagnosis: our vacillating between two stances toward our beliefs, first person 'deliberative' and third person 'naturalistic' makes scepticism inevitable; when we treat our beliefs from the naturalistic stance—which we do to avoid responsibility for them—we see them as lacking sufficient reason; seen from the deliberative stance, this is a catastrophe). But a majority of the essays present some form of argument against some form of scepticism: from Forrest's 'refutation', to A. B. Dickerson's neo-Austinian contextualist argument that the sceptical problem is plausibly nonsense. It is followed by Brian Weatherson's argument against the attributor-contextualism that Dickerson recommends: it is notable in Dickerson's paper that he assumes without comment that Austin's 'present intents and purposes' [115] are the knowledge-attributor's intents and purposes, rather than the subject's. Weatherson offers a detailed argument that this assumption is too hasty. Then there is John Collins' rejection of the position that lottery problems present us with a wide-range of difficult sceptical problems. Collins's treatment of lottery propositions is somewhat similar to Lewis's. Lewis [1996: 556–7) relies on a 'Rule of Resemblance', according to which any situation which saliently or relevantly resembles a situation you can't properly ignore, one of which (by the 'Rule of Actuality') is the actual situation, cannot properly be ignored. Collins relies on '*The Close Shave Principle*: If S knows that p, then there is no possibility that is very close to actuality at which p is false and to which S assigns non-zero probability' [88].

365 Part B is shorter, with five essays, four of which emphasize the Gettier problem. Missing is a representative of Williamsonian 'knowledge-first' epistemology. Most of the authors present something like actual Gettier-proof analyses of knowledge. Aside from the Williamsonian omission, there is again an admirable range. In addition to Heathcote's and Gallois's contributions, John Bigelow argues that what the Gettier problem should get us to realize is the importance of a principle like the following: 'If some person both believes and knows something, p, and some person believes but fails to know something, q, then this belief that p and this belief that q must differ to some significant degree in some epistemically significant respect other than truth'

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[207, Bigelow's emphasis]. This principle is in tension with the currently fashionable respect for fallibilism about knowledge. Therefore, Bigelow argues that the best option is to abandon fallibilism. But fallibilism does important work in Newstead's selection: it is because knowledge is fallible that the gap between our intentions and our intentional actions does not threaten the possibility that we can know what we are intentionally doing by knowing our intentions. And in Hetherington's own contribution, he takes commitment to fallibilism as a desideratum [223] and argues that we need to move away from a model of knowledge (the 'not-yet' model) that requires that we withhold knowledge ascriptions until some 'pertinent aspect' of the situation is proven to be absent (e.g., uneliminated sceptical challenges or Gettier circumstances). Instead, we should adopt a 'working' model according to which we can correctly ascribe knowledge even when the pertinent aspects of the situation may yet be there: even when the subject cannot yet eliminate sceptical scenarios and even when Gettier circumstances may still be in play.

So, the collection is actually rather conventional in its subject matter—the possibility and nature of knowledge—but the essays are uniformly well written and argued, clear, neither (for the most part) overly nor insufficiently precise and technical, and there is a range of views on those conventional issues that makes the book a lively and worthwhile read.

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### Reference

Lewis, David. 1996. Elusive Knowledge, *Australasian Journal of Philosophy* 74: 549–67.

Kirk, Robert, *Zombies and Consciousness*, Oxford: Clarendon Press, 2005, pp. xii + 235, £35.00 (cloth).<sup>1</sup>

Robert Kirk has two ambitious aims in *Zombies and Consciousness*: 'to expose the incoherence of the zombie idea, and to explain what it is for something to be perceptually-phenomenally conscious' [217]. Kirk first defends physicalism against the Zombie Argument (ZA) (e.g., Chalmers [1996]) with a novel argument to deny that zombies are even conceivable. Second, he attempts to answer 'the Hard Problem' of perceptual consciousness, proposing a substantial account of its physical and functional grounds. As I'll discuss below, I think that, in at least his first project Kirk is unsuccessful but his accounts are detailed, well-argued, and worthwhile nonetheless.

The 'zombie idea' and the book's structure are outlined in Chapter 1 before Kirk responds to ZA in Chapters 2–4. In Chapter 2 he motivates the problem, arguing that ZA is a challenge to all versions of physicalism. According to Kirk, all physicalists are committed to the 'Redescription Thesis', that all actually true statements that cannot be expressed in the austere vocabulary of an idealized contemporary physics depend for their truth on nothing other than facts expressed

<sup>1</sup>Thanks to David Chalmers for helpful discussion and suggestions.

430 by P, the conjunction of all the actual truths of that physics [9]. So for all the actually true statements expressible in psychological language Q, all physicalists are committed to the ‘strict implication thesis’: P strictly implies Q. That is, ‘not-(if P then Q)’ is inconsistent or incoherent for broadly logical or conceptual reasons [10]. If zombies are not inconsistent or incoherent in this sense then the strict implication thesis, and consequently physicalism are false.

435 In Chapter 4, Kirk responds to the argument, denying that zombies are conceivable on the grounds that the conceivability of zombies entails the conceivability of a version of epiphenomenalism that Kirk argues is inconceivable.

440 Taking himself to have refuted ZA, in the remaining chapters Kirk gives his account of the functional capacities constitutive of (perceptual) consciousness. In Chapter 5 he distinguishes two problems: the ‘what it is like’ (expressed in physical vocabulary to have a particular kind of conscious experience) problem and the ‘what it is’ (in terms of physical facts to have a particular kind of conscious experience) problem. Kirk takes Nagel to have shown that the former cannot be answered but argues that the physicalist need not answer it. It would require that psychological vocabulary can be semantically reduced to physical vocabulary but the redescription thesis does not entail that other vocabularies are semantically reducible to the vocabulary of P, nor that someone can learn the concepts of such vocabularies on the basis of knowing P [17–18]. So physicalists need only answer the latter problem, showing what physical facts (in P) the truths in Q depend on [72].

450 Chapter 6 introduces the notion of being ‘a Decider’, a functional kind necessary for genuinely choosing between alternatives for action [88]: it is comprised of a ‘basic package’ of having goals (not merely needs), being able to gather information (so as to monitor one’s behaviour) which can be interpreted or classified, assessed, and stored [88–9]. In addition these capacities must be integrated so the information is for, or can guide the behaviour of, the whole system [91]. Kirk argues that being a decider is necessary for perceptual consciousness, by contrasting deciders with real and hypothetical cases that lack various features of the basic package. In Chapter 9 he introduces the notion of ‘Direct Activity’ concerning the way that the gathered perceptual information is available to a decider: information is directly active if it has instantaneity (endows certain capacities immediately, without additional recall, guessing, or popping-up [151]) and priority (affects the basic-package processes regardless of the organism’s current goals or whether it is actually used). He argues that being a decider with perceptual information that is directly active is sufficient for having perceptual consciousness in Chapter 10 by arguing it answers the ‘what it is’ problem distinguished above, relating this to discussions of the explanatory gap from the literature. Finally, in Chapter 11 Kirk briefly compares his account with others proposed in the literature.

470 Much here is worthy of discussion but I will focus on what I take to be the most important, original, part: the argument in Chapter 4 that the conceivability of zombies entails the conceivability of a certain version of epiphenomenalism about phenomenal consciousness (‘the e-quality story’) which is itself incoherent. (E1)–(E5) comprise the story:

- 475 (E1) The world is partly physical, and its whole physical component is closed under causation.

- (E2) Human beings stand in some relation to a special kind of non-physical properties, e-qualia. E-qualia make it the case that human beings are phenomenally conscious.
- (E3) E-qualia are caused by physical processes but have no physical effects.
- (E4) Human beings consist of nothing but functioning bodies and their related e-qualia.
- (E5) Human beings are able to notice, attend to, think about, and compare their e-qualia.

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Kirk claims that (E1)–(E4) are incompatible with (E5). So the story is incoherent. If the conceivability of zombies entails its conceivability then zombies are not conceivable.

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But should we accept that the e-qualia story is incoherent? For Kirk the problem is the epistemic intimacy with e-qualia (E5). Almost undeniably we do have some special epistemic relation with our phenomenal consciousness. Kirk takes this to require that e-qualia have causal effects on the cognitive activities by which we gain information about them [44], arguing for this by analogy with an example involving ‘sole pictures’ [45]: Consider his physically identical zombie twin, *Zob*. Due to shifts in natural laws *Zob*’s neural processes (of the kind that cause visual e-qualia in Kirk) cause sequences of constantly changing pictures to appear on the soles of *Zob*’s feet [45]. These sole pictures have no causal effects on *Zob*’s perceptual and cognitive processes so, Kirk says, intuitively he lacks epistemic intimacy with them: he does not even notice them. By analogy, as e-qualia are epiphenomenal (E3) then epistemic intimacy with them is not possible (contra E5).

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Does the sole-pictures example show that epistemic relations must be causal relations? As Kirk acknowledges, Chalmers denies this [44]. For Chalmers our epistemic relation with consciousness is non-causal: rather, epistemic intimacy is due to an ‘acquaintance relation’ which enables consciousness to be the subject of our judgements. Kirk claims that merely saying this is not enough: to respond to a challenge to this very idea. Chalmers must explain how being in this non-causal physical relation is sufficient for epistemic intimacy [44]. However, it isn’t clear that Kirk’s own account meets this demand. He seems to appeal to intuitions about other epistemic relations, say when having beliefs about physical things in the external world that do causally influence our cognitive processes. But how well understood is this? For instance, how does there being a causal relation between light reflecting from a cup on the table striking the retina and stimulating photoreceptors and neurons explain how we know about the cup? Kirk needs to show why such causal accounts are explanatorily adequate whereas an acquaintance account is not.

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Furthermore, Chalmers does offer a detailed, independently motivated, account of the nature of this acquaintance relation. He [2003: 24, 27 ff.] describes it as a kind of constitutive relation, the phenomenal property serving to constitute a phenomenal concept so that the property is part of the belief about the property. We might question whether this is sufficient for the kind of epistemic intimacy we have with consciousness but Chalmers does not simply posit a mysterious relation. And Kirk gives no argument to show that such a constitutive relation cannot be an epistemic

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525 relation. He may have succeeded in showing that there are conflicting intuitions on this matter, but that does not show that (E5) is incompatible with (E1)–E4) in the e-quality story, so does not show that it is incoherent.

Despite these complaints however, this is a valuable addition to the consciousness literature.

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### 535 Reference

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540 Jenkins, Joyce, Jennifer Whiting, and Christopher Williams, eds., *Persons and Passions: Essays in Honor of Annette Baier*, Notre Dame IN: University of Notre Dame Press, 2005, pp. viii + 368, US\$53 (cloth).

545 The fifteen essays by friends, former colleagues, and former students of Annette Baier, which comprise this collection, fall into three groups. There are four pieces on Descartes, focused for the most part upon the role played by the passions in the Cartesian search after truth; there are seven pieces on Hume, several of which take up themes from Book 2 of Hume's *Treatise*, most of which reflect upon Baier's distinctive way of reading the *Treatise* as a search for an account of human nature able to bear its own survey; and there are four more miscellaneous pieces, two of which seek to show that is less obvious than Baier has claimed that Hume's ethics must win out when set against Kant's, and two of which examine the notion of trust that Baier has sought to show to be essential to a properly developed moral philosophy. One of the essays on trust has already appeared in print. There is in addition an introductory chapter by Christopher Williams that seeks to bring out the manner in which the collection is given unity when read in the context of Baier's abiding concern with the articulation of a *naturalistic* conception of the human being.

555 Many of the essays collected in *Persons and Passions* address a question that is raised again and again in Baier's own work: the question of what, exactly, moral philosophy is for. Thus Sergio Tennenbaum dismisses the idea that the main function of Kant's various explicit formulations of the categorical imperative is to help us apply the categorical imperative to particular practical cases. Rather, Tennenbaum argues, 'The formulation of the categorical imperative is part of Kant's main project of tracing the origin of human cognitions to their proper faculties' [251]. Kant's view is that our moral judgements must be referred to the faculty of (practical) reason. And tracing morality to its source in reason has practical significance in virtue of the fact that the sentiments are very often not reliable as guides to virtue. Broadly similar considerations lead Michelle Moody-Adams to the conclusion that Kant's moral philosophy provides a better and more humane 'bulwark against cruelty' than does Hume's.

570 Baier, of course, follows Hume in being rather more sanguine about the moral resources offered by the passions and rather more sceptical of the capacity of reason

alone to provide a bulwark against anything. The point of philosophy, as seen by Hume and Baier, is to give us a concentrated form of self-understanding, a means whereby the particular insights of novelists and playwrights and historians, and psychologists and sociologists and anthropologists, are brought together and unified into a theory of *human nature*. And a theory of human nature is useful to the extent that it enables us to find in morality an expression of our deepest needs and our most pressing desires. When, in the mirror provided by philosophy, we see ourselves clearly, we will recognize morality to be an artefact made in order that we might be more fully at home in the world, and with that recognition will come an endorsement of the claims that morality makes upon us. Other pictures, Kant's, say, or Augustine's, leave us unsure why, if its connection with what we are is so tenuous, we should always do what morality requires us to do. Baier's Hume supposes that self-understanding will put that question in abeyance.

The second group of essays collected in *Persons and Passions* addresses Baier's way of reading Hume from a number of different angles. Robert Shaver defends Hume against Christine Korsgaard's charge that the very idea of reflective endorsement of the claims of morality leads ineluctably beyond Hume and towards Kant. Shaver argues that morality survives the test of reflection when, and only when, it is shown that doing as morality requires is conducive to human well-being. Nothing motivates the Kantian drive towards the 'unconditioned': once the connection between morality and well-being is made out, there is no further 'why should I?' question intelligibly to be asked. In what I judge to be the two best essays in the collection, Lili Alanen and Donald Ainslie fill out some of the detail of Baier's reading of Hume's *Treatise*. At the heart of Baier's interpretation of Hume is the claim that the *Treatise* stages the self-destruction of a rationalist conception of human nature, replacing that conception with one which gives sentiment and passion the task of defining who we are. Alanen seeks a better understanding of the intentionality of Humean passions. Notoriously, and apparently most implausibly, Hume himself says that passions are 'original existents' which 'do not contain any representational quality'. Alanen shows that this does not have to mean that they lack intentional objects. They are not, it is true, *copies* of anything. Yet they are acts of perception, acts 'whose very essence is the emotion or stirring they cause in the mind', and which 'turn the mind so moved to other objects assigned them by nature or habit' [136]. A faculty of sympathy is central to both Hume's theory of the passions and his sentimental theory of moral judgement. In both contexts a stable idea of self is involved in the mechanism of sympathy. And yet in Book One of the *Treatise* Hume fails to find any such idea as an idea of self. Ainslie argues that this problem dissolves once it is seen that Hume offers two different accounts of the self, 'the self as *mind*', and 'the self as an *embodied person with a distinctive place in the social sphere*' [144]. Alanen's and Ainslie's papers are significant contributions to Hume scholarship.

Other contributors are more sceptical of Baier's claim that what the *Treatise* presents is a theory of human nature able to provide a regress-stopping answer to the question of the ground of moral obligation. David Gauthier argues that reflective endorsement cannot be restricted, as it is by Hume, to a consideration of the extent to which morality serves non-moral interests and concerns. Gauthier asks 'whether subjecting morality to a nonmoral test is appropriate', answers that it is not, because, in view of the sub-optimality of purely self-regarding decision-making,

‘rational deliberation itself has a moral dimension’ [227]. Janet Broughton argues that problems for Baier’s reading of Hume start earlier on, in Book One of the *Treatise*. It is implausible, Broughton claims, to regard Part Four of Book One as a *reductio* performed on a theory of human nature that Hume is attacking. The theory of human nature on display there is Hume’s own, and the uncomfortable conclusion reached is ‘that the human understanding operates according to principles... that make reasonable belief in almost anything impossible’ [188]. Of course, and as Hume himself saw with painful clarity, such a conclusion makes it hard to be sure of the possibility of moving on from logic to questions concerning the passions, morals, and politics. According to Broughton, Hume moved on, not with a Baierian confidence in the ability of sentiments to endorse themselves, but rather with decision to more or less ignore what he had discovered about the faculty needed for the pursuit of his inquiries. ‘Keep moving and don’t look down!’ was the order of the day [190]. This seems to me to capture very well the spirit of the transition from Book One to Book Two.

Baier’s way of reading Hume as a naturalistic anti-rationalist might make it appear strange that a collection of essays in her honour opens with four pieces on Descartes. Three of those four pieces, however, concern themselves with Descartes’s conception of the passions, and, especially, with the role of the passions in the argument of the *Meditations*. These are fascinating explorations of a neglected theme. Lisa Shapiro suggests that ‘the project of the *Meditations* involves the regulation of the passions just as much as it involves laying a metaphysical foundation which can answer the skeptical arguments of the First Meditation’ [25]. ‘Part of knowing, for Descartes’, Shapiro adds, ‘is knowing who one is, and this self-knowledge essentially involves feeling a certain way toward oneself’ [30]. Amy Morgan Schmitter takes a similar line, arguing that Descartes holds ‘that in many cases cognitive success may be best measured by the passions that accompany our thinking’ [66]. William Beardsley concentrates on the meditator’s feelings towards God. This way of reading the *Meditations* will need to be developed in more detail before it will be clear what revisions are necessary to the best of recent work on Descartes. But the project is eminently worthwhile, and is evidence of the wholly salutary influence that Annette Baier has had on the history of early modern philosophy.

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Frascolla, Pasquale, *Understanding Wittgenstein’s Tractatus*, London and New York: Routledge, 2006, pp. xiii + 244, £50.00 (cloth).

Although this is certainly not the first book on Wittgenstein’s early masterpiece, it authoritatively makes its entry into the secondary literature on the *Tractatus*. For it is not only a very clear and complete introduction on the *Tractatus*, but it also provides a new interpretation of the text. This interpretation is based on an enlightening new reading of the Tractarian ontology. It attempts to demonstrate that the book really has a hidden unity that links the ‘logical’ parts of the text with the ‘ethical’ ones. One cannot but be struck by how Frascolla shows that the text is

supported by a harmonious architecture. For instance, by reading Frascolla one cannot but admire once more the way in which Wittgenstein construes the idea according to which objects combine themselves into possible states of affairs whose totality forms the logical space, whereas the combinatory distributions of the subsistence vs. the nonsubsistence of those states form all the possible worlds; so that finally, the particular bipartition of those worlds into worlds that make a *Satz* (a proposition, in the standard translation of the text) true and worlds that make that proposition false gives the sentence its (truth conditional) meaning.

Quite sensibly, Frascolla starts (Chapter 2) with the semantical parts of the text in order to establish the picture theory of language as Wittgenstein's original contribution to solving the problem of semantical competence—how it is that we understand propositions we never heard before. Wittgenstein's idea is that language compositionality is just a necessary, but not a sufficient, condition, of that understanding. We get to that understanding not only because we already know the meaning of the proposition's constituents but also because we literally 'read off' out of the proposition how things in the world would stand if the proposition were true; the proposition literally shows its sense in so far as it is a picture of the possible situation it presents. Frascolla's main line of development consists in showing how Wittgenstein's text supports this seminal idea by suitably refining it in opposition to its apparent counterexamples; first, atomic propositions whose form of representation is different from that of the possible states of affairs they depict (Chapter 2), and second, complex propositions which cannot present complex states of affairs, for there are no such things given Wittgenstein's idea that connectives stand for nothing (Chapter 4).

Wittgenstein's way of dealing with the first putative counterexample involves his notion of a thought as the logical picture of facts. Following an old interpretative tradition [31 ff.], Frascolla says that, in order to stick to the idea that even a picture (a proposition) which does not share its form of representation with the possible state of affairs it depicts (for instance, only the former but not the latter has a spatial form of representation) must have something in common with that state in order to present it, Wittgenstein recurs to the idea that the picture is isomorphic with the state. That is, the way the picture elements are connected to each other is isomorphic to how the state elements would be connected if that state subsisted. For Frascolla, saying that a picture is isomorphic with the state of affairs it depicts is actually tantamount to saying that the picture expresses a thought, taken as the logical role of the picture or, which is the same, as the most abstract element that the picture shares with that state of affairs, its logical form: both the picture and the state are such that they are made by the same number of constituents, whichever they are, which may stand between each other in some relation or other [34 ff.].

It is clear why Frascolla needs isomorphism. For by making the picture and the state different instances of the very same abstract type of ordering, isomorphism between the picture and the state still allows one to 'read off' the state out of the picture; as hinted at before, this is the condition a proposition has to fulfil in order for it to be meaningful in so far as it depicts something. It is uncertain, however, whether isomorphism guarantees pictoriality. Theoretically speaking, once the aboutness relation that projects the elements of the proposition onto certain objects is fixed, there might be more than one way in which those objects may be connected which is isomorphic to how those elements are connected; hence, it would still not be

the case that by looking at the proposition one sees *which* is the possible state of affairs it presents.

720 Here the ontological part of the book enters the stage. According to Frascolla (Chapter 3), one can say what objects are for Wittgenstein: they are phenomenological universals that, given their nature, can (or cannot) combine together in order to make up possible states of affairs.

725 This reading of *Tractatus's* ontology has many merits, for it allows Frascolla to account for many traditionally obscure passages of the text, mainly: (i) that the logical space can be empty (i.e., that there is a possible world which contains no subsisting states of affairs, no facts); (ii) that objects are colourless yet chromaticity is one of their forms; (iii) how the text's sections on solipsism are linked to the logico-ontological sections. Moreover, although Frascolla does not say it explicitly, this interpretation allows one to solve the afore-mentioned problem as regards isomorphism. If objects are phenomenological universals—a certain kind of phenomenological colour, a certain kind of phenomenological spatial location, a certain kind of phenomenological temporal moment—then each of them has just one form, one mode of possibly combining (vs. non combining) with other objects; for example, if (phenomenological) Red is an object, it can combine only with (phenomenological) spaces and (phenomenological) times, but not, say, with (phenomenological) sounds (<Red, Here, Now> is a possible state of affairs, but there is no such state of affairs which results *inter alia* from the combination of Red and a certain tonal pitch, for there cannot be such a combination). But if this is the case, then for a given number of objects there is just one way for them to possibly combine, just one possible state of affairs, hence there is no indeterminacy problem to the effect that a proposition may present *more* than one possible state of affairs whose objectual components are the same.

740 One problem with this reading is that it ascribes to the text various key theses the text is utterly silent about, such as for example the thesis that every object has just one form—Wittgenstein limits himself to saying that space, time, and chromaticity are forms of objects [*TLP* 2.0251]—and the thesis that possible states of affairs supervene on their objectual components, i.e., no difference in such states without a difference in such components—Wittgenstein limits himself to saying that (possible) states of affairs are (possible) ways for objects to be combined (cf. e.g., *TLP* 2.031). Moreover, this reading ascribes to Wittgenstein a traditional metaphysical view on the nature of objects (objects as universals) which one would imagine to concern at most what Wittgenstein calls the *application* of logic, i.e., what decides which atomic propositions there really are, rather than *logic* itself, i.e., the ontological scaffolding which is the *a priori* condition in order for language to have meaning.

755 But this is just an example of Frascolla's striving for a hidden unity in the text. Another example of this tendency goes in the other direction, when Frascolla attempts to conceive the notion of a thought in a unitary way. As we have already seen, Wittgenstein mobilizes the notion of a thought as the picture's logical form, namely what the picture shares with all the possible states of affairs it can theoretically present (a number that, if Frascolla is right, shrinks to just one possible state of affairs once the aboutness relation between its elements and certain objects is fixed). Frascolla is entirely right in endorsing [36 ff.] a nonpsychologistic interpretation of that notion: so conceived, the thought is just an abstract role of any picture-fact presenting some other state of affairs, it is not a psychological fact

which, like any other fact, should rather possess its own form of representation. Yet the factor giving a picture its logicality is not yet what gives a picture its intentionality, namely what enables projecting the picture's elements onto certain objects so that those elements become names *of* those objects. Now, Wittgenstein calls also this factor a thought [*TLP* 3.11 – 12]. As a result, it is not *eo ipso* the case that if one rules out a psychologistic interpretation of the first factor, a psychologistic interpretation of the second factor is to be ruled out as well. All in all, perhaps Frascolla is too optimistic in assuming that there is such a hidden unity. Yet it would be very nice that there were one, and Frascolla teaches us a very striking way as to how to look for it.

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