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Facing Facts, by Stephen Neale. Oxford: Clarendon Press, 2001. Pp. xv + 254. H/b £25.00.

This book consists of a detailed, careful and thorough examination of the so-called *slingshot* argument. To be sure, the slingshot comes in different versions—but why devote a whole book to the slingshot? Because it is a serious argument which allegedly has enormous consequences: (i) that if there are any facts, there is only one of them, and (ii) that no connective having certain features can be non-extensional—the first consequence is taken to be a consequence of the second. Given the number, importance and influence of non-extensional logics and theories postulating facts, whether to account for truth, causation, modality, change or whatever, the slingshot cannot pass unexamined.

There are (at least) two versions of the slingshot, one that figures in the work of Davidson, Quine and Church (which uses a principle about the substitution of logically equivalent sentences), and one that can be reconstructed from things Gödel said (which uses a weaker principle about the substitution of a subclass of logically equivalent sentences). Neale examines the details of the functioning of both slingshots, examines how adopting different theories of definite descriptions affects what the slingshots prove, and evaluates those alleged consequences of the slingshots.

The book consists of eleven chapters and one appendix. The first seven chapters are, in different ways, preparatory. While chapter one is introductory, chapters two, three and four examine features of the philosophies of Davidson, Frege and Russell respectively. Chapter five presents Gödel's slingshot as Neale reconstructs it from Gödel's short remarks in a footnote. Chapters six and seven are rather technical: their purpose is to discuss certain inference principles and logical notions ('extensional', 'scope') that will be used in the subsequent chapters.

In chapter eight the real work begins: there Neale sets out Davidson's slingshot in the form of a deductive proof. The same is done to Gödel's slingshot in chapter nine. Neale argues that this proof delivers an exacting constraint on non-extensional logics.

To give the reader a sense of what Gödel's slingshot is, let me give an abbreviated version of what Neale presents as such. Let us say that a connective is *+ \neg -conv* if it allows the mutual substitution *salva veritate* of sentences like '*Fa*' and '*a = \neg x(x = a \wedge Fx)*'; and let us say that a connective is *+ \neg -subs* if it allows the mutual substitution *salva veritate* of sentences differing only in that they contain different definite descriptions uniquely applying to the same thing. Then let '@' be an arbitrary connective which is both *+ \neg -conv* and *+ \neg -subs*; let '*Fa*' be an arbitrary true sentence; then we have:

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| 1. <i>Gb</i> | Premiss |
| 2. <i>a \neq b</i> | Premiss |
| 3. @(<i>Fa</i>) | Premiss |
| 4. @(<i>a = \negx(x = a \wedge Fx)</i>) | 3, @+ \neg -conv |
| 5. @(<i>a = \negx(x = a \wedge x \neq b)</i>) | 2, 4, @+ \neg -subs |
| 6. @(<i>a \neq b</i>) | 5, @+ \neg -conv |
| 7. @(<i>b = \negx(x = b \wedge a \neq x)</i>) | 6, @+ \neg -conv |
| 8. @(<i>b = \negx(x = b \wedge Gx)</i>) | 1, 7, @+ \neg -subs |
| 9. @(<i>Gb</i>) | 8, @+ \neg -conv |

Strictly speaking this shows that if a connective is *+ \neg -conv* and *+ \neg -subs* then it allows the mutual substitution *salva veritate* of truths for truths—but as Neale carefully shows (pp. 185–6) one can prove the stronger result that if a connective is *+ \neg -conv* and *+ \neg -subs* then it is fully extensional. By putting Gödel's slingshot in this abstract way Neale is able to abstract from the peculiar features of any connective in particular and conclude in full generality that being *+ \neg -conv* and *+ \neg -subs* entails being extensional (he also puts Davidson's slingshot in such an abstract way (p. 173), thereby showing that being *+PSLE*—that is, allowing mutual substitution *salva veritate* of logically equivalent sentences—and being *+ \neg -subs* entails being extensional). That no non-extensional connectives can be both *+ \neg -conv* and *+ \neg -subs* is what Neale calls the *Descriptive Constraint* on non-extensional logics (p. 186).

Gödel's slingshot is more powerful than Davidson's because Gödel's uses a weaker assumption than Davidson's, for although that a connective is *+PSLE* entails that it is *+ \neg -conv*, that it is *+ \neg -conv* does not entail that it is *+PSLE*. Since Davidson's slingshot requires substitution of logically equivalent sentences containing definite descriptions, the validity of the argument depends on the semantics of definite descriptions. Given that in chapter eight Neale argued that on a Russellian account of descriptions the argument establishes something weaker than what Davidson and Quine were trying to show, namely the impossibility of facts and non-truth-functional connectives, chapter ten is about the impact that a referentialist theory of descriptions could have on the slingshot. Neale examines different versions of Fregean and Strawsonian theories of descriptions, and Hilbert and Bernays's theory.

The *Descriptive Constraint* on non-extensional logics provides a *Descriptive Constraint* on theories of facts, namely that the fact identity connective 'the fact that ϕ is identical to the fact that ...' cannot be both *+ \neg -conv* and *+ \neg -subs* (p. 185). For if such a connective is both *+ \neg -conv* and *+ \neg -subs*, then it is extensional and, if so, there is at most one fact. So we have a test of adequacy for theories of facts. Chapter eleven is an exploration of these metaphysical consequences of the slingshot. Neale argues that Russell's theory of facts passes the test, for on that theory the fact identity connective is neither *+ \neg -conv* nor

+ τ -subs. This is because Russell takes facts to be complex entities composed of particulars and properties. So the fact that $a = (\lambda x)(x = a \wedge Fx)$ contains properties not present in the fact that Fa and, given Russell's Theory of Descriptions, the facts that $a = (\lambda x)(x = a \wedge Fx)$ and $a = (\lambda x)(x = a \wedge Gx)$ also contain different properties (p. 204).

But the situation is not so clear with other theories of facts. For Wittgenstein the fact identity connective is + τ -conv and +PSLE but it is not clear whether it is + τ -subs. Neil Wilson takes the fact identity connective to be + τ -subs but it is not clear whether he takes it to be + τ -conv or +PSLE. And Neale argues that Austinian theories of facts are likely to succumb to the slingshot (pp. 205–9).

The book finishes with an appendix that discusses the Russellian notion of 'incomplete symbols', where Neale discusses worries on incompleteness and contextual definition that appear to have led Gödel astray in his assessment of Russell's Theory of Descriptions.

Let me just note a couple of typos. On page 103, line 3, '(25b)' should read '(25a)', and in line 5, '(25a)' should read '(25b)'. On page 132, lines 3–4 from bottom, 'the number x such that $((x = 1) \bullet \phi)$ or $((x = 0) \bullet \sim\phi)$ ' should read 'the number x such that $((x = 1) \bullet \phi)$ or $((x = 0) \bullet \sim\phi) = 1$ '.

Facing Facts is a rich book that contains many interesting and provocative assertions and theses. Here I would like to make just a couple of critical points on some things Neale says. One of these is Neale's assertion that logical equivalence is not the real issue when it comes to the force of slingshot arguments (p. 223). This is presumably because since Gödel's more powerful slingshot does not invoke logical equivalences, what matters is whether a certain connective is + τ -conv or + τ -subs. This is why Neale claims that the task for the fact theorist, apart from doing justice to the semi-ordinary and semi-philosophical idea of what facts are and permitting facts to do some philosophical work, is to give a theory according to which the fact identity connective is not both + τ -conv and + τ -subs (p. 223).

But whether what really matters is whether the relevant connective is + τ -conv or + τ -subs depends on something Neale does not discuss, namely, *What is a slingshot argument?*

Neale says that a slingshot argument is a *collapsing* argument, where a collapsing argument is one that purports to show that 'there are fewer items of a given kind than might be supposed previously' (p. 9). Neale is not equating slingshot arguments and collapsing arguments, he is just saying that being collapsing arguments is a necessary feature of slingshot arguments. If Neale had equated slingshots with collapsing arguments he would have been wrong, for there are many collapsing arguments that are completely unlike Davidson's and Gödel's slingshots (think of the traditional arguments for monotheism, for instance).

So what is a slingshot argument? What makes Davidson's and Gödel's slingshots interesting is that they are collapsing arguments based on the fact that

every connective with certain logical features must allow the substitution *salva veritate* of truths for truths. (Note: those features make the relevant connectives fully extensional, but what makes the arguments collapsing is that connectives with those features allow substitution *salva veritate* of truths for truths—the full extensionality of the connectives, that is, that they also allow substitution of falsehoods for falsehoods is not required to make the arguments *collapsing*.) Thus I take it that slingshots are any arguments purporting to show that there are fewer items of a given kind than might be supposed previously on the basis of a general argument to the effect that a connective with certain logical features must be extensional, or at least it must allow substitution *salva veritate* of truths for truths.

But then consider the following argument, where '@+conj' means that @ allows the substitution *salva veritate* of a conjunct for a true conjunction and '@+disj' means that @ allows the substitution *salva veritate* of a true disjunct for a disjunction. (Note: extensional connectives are no less +conj and +disj than they are + τ -conv and + τ -subs):

1. p	Premiss
2. q	Premiss
3. @(p)	Premiss
4. @($p \wedge (q \vee \neg q)$)	3, @+PSLE
5. ($q \vee \neg q$)	Logical Truth
6. @($q \vee \neg q$)	4, 5, @+conj
7. @(q)	2, 6, @+disj

It is plausible to think that facts are identical if and only if they make true the same propositions. But then the above argument is a slingshot if one lets '@(...)' be the truthmaker connective 'the fact that p is a truthmaker of the proposition that ...'. For ' q ' in the above argument stands for any *true* sentence. So the generalized conclusion of this is that every fact makes true every proposition, and so there is only one fact. (Note that even without the claim that facts are identical if and only if they make true the same propositions, this argument is extremely damaging for any sensible truthmaker theory, since every sensible truthmaker theory will postulate that some propositions are made true by different facts—indeed this argument is very damaging even for those truthmaker theories that take some truthmakers to be entities other than facts.)

My point is not to argue that facts are identical if and only if they make true the same propositions, or that the connective 'the fact that p is a truthmaker of the proposition that ...' is +PSLE, +conj and +disj. It is sufficient that these claims have some degree of plausibility, as I think they have. For my point is that when it comes to the force of a slingshot argument what matters need not be whether the relevant connective is + τ -conv or + τ -subs. The descriptive constraint that the above slingshot imposes on the truthmaker theorist is that the

truthmaker connective must fail to be +PSLE, or +conj or +disj.

Note that if a connective is +PSLE then it is + \neg -conv and so if a connective is not + \neg -conv, then it is not +PSLE. So someone could insist that even in the case of this slingshot it is relevant whether the connective in question is + \neg -conv. But the slingshot above can be reformulated invoking a notion tighter than mere logical equivalence. Thus one might demand of the truthmaker connective not that it be +PSLE, but that it be merely +PSLE*, where a connective is +PSLE* if it allows the mutual substitution *salva veritate* of sentences like 'p' and 'p \wedge (q \vee \neg q)'. When so reformulated, whether the connective is + \neg -conv does not matter any longer.

Note also that this slingshot does not force fact theorists, as Neale claims *Gödel's slingshot* does (p. 223), to say something about the semantics of definite descriptions. For there is nothing about descriptions in this slingshot. But although this slingshot does not force the fact theorist to say anything about descriptions, saying something about them might be relevant in this context. For instance, by using Russell's Theory of Descriptions a fact theorist could deny that the truthmaker connective is +PSLE. For 'p' and ' $(\iota x)(x = a) = (\iota x)(x = a \wedge p)$ ' are logically equivalent. But on Russell's Theory of Descriptions, ' $(\iota x)(x = a) = (\iota x)(x = a \wedge p)$ ' is short for (*):

$$(*) (\exists x)((\forall y)(y = a \wedge p \text{ iff } y = x) \wedge (\exists z)((\forall w)(w = a \text{ iff } w = z) \wedge x = z))$$

But 'p' and (*) have different truthmakers, for *a*, whatever it may be, is a truthmaker of (*) but it need not be a truthmaker of 'p'. (Of course, the truthmaker theorist could reject that the truthmaker connective is +conj or +disj, or could reject that it is +PSLE without saying anything about descriptions.)

So here is a slingshot that does not satisfy some of the things Neale says about them.

But it might be said that what has passed under the name of 'slingshot' in the literature are different versions of arguments that involve equivalence conditions on terms and sentences, while the above argument involves an equivalence condition on sentences only. True, and one is free to reserve the honorific title 'slingshot' for whatever arguments one pleases—but I fail to see what is so relevant in being an argument that involves equivalence conditions on terms and sentences as opposed to being an argument that involves an equivalence condition on sentences only. The reason why Davidson's and Gödel's slingshots are philosophically relevant, and the reason why fact theorists in general should take them seriously, is not that they involve equivalence conditions on terms and sentences, but that they are arguments purporting to show that there is at most one fact on the basis that a connective with certain logical features must be extensional or at least allow substitution *salva veritate* of truths for truths. And this is a feature shared by the above argument, even if it does not involve an equivalence condition on terms.

Now Neale clearly limited the scope of his work to Davidson's and Gödel's slingshots (or variants thereof)—and there is nothing wrong with that. And

so, it might be said, when he says that logical equivalence is not the real issue when it comes to the force of slingshots he is saying something true because he is referring only to Davidson's and Gödel's slingshots (and variants thereof). True, but if restricted in this way, Neale's assertion comes close to triviality. For all it boils down to is that logical equivalence is not the real issue when it comes to the force of a pair of arguments, one of which involves logical equivalence and the other a tighter notion of equivalence. But Neale made his assertion when enumerating the main results of his book, which gives reason to think that he meant with it a substantive claim. However, when taken as a substantive and more general claim his assertion is not true, as we have seen.

The other comment I would like to make has to do with whether avoiding the slingshot commits the fact theorist to an ontology of properties or universals. Given that Russell avoids the slingshot, among other things, by making properties constituents of facts, Neale finds tempting to draw the moral that if one wants non-collapsing facts, one needs properties as components of facts; he suspects this will be proved in due course (p. 210).

But I think this suspicion of Neale's is wrong. One can have a structuralist conception of facts without making properties or universals constituents of facts. I have proposed a view like that (*Resemblance Nominalism*, Oxford: Clarendon Press, 2002, pp. 85–7). I take facts to be ultimately entirely constituted by *resembling* particulars (that they are constituted by resembling particulars does not mean that resemblance is a further constituent of facts—if that were the case facts would not be ultimately *entirely* constituted by resembling *particulars*). So facts are identical if and only if they have the same constituents.

But doesn't this resemblance nominalist conception of facts succumb to the slingshot? No, for given Russell's Theory of Descriptions, the facts that $a = (\iota x)(x = a \wedge Fx)$ and $a = (\iota x)(x = a \wedge Gx)$ contain different constituents, as the former contains all *F*-particulars but not all *G*-particulars but the latter contains all *G*-particulars but not all *F*-particulars (I am assuming *possibilia*, of course). So the fact identity connective is not + \neg -subs if one combines Resemblance Nominalism with Russell's Theory of Descriptions. And it is not + \neg -conv if one combines it with a referentialist semantics of definite descriptions—for then the fact that $a = (\iota x)(x = a \wedge Fx)$ will contain only one particular, *a*, while the fact that Fa will contain all other *F*-particulars. (It could perhaps be argued that even combined with Russell's Theory of Descriptions, Resemblance Nominalism does not make the fact identity connective + \neg -conv.)

Facing Facts is a lucid and penetrating discussion of a simple but powerful argument that has attracted the attention of the most brilliant philosophical minds of the twentieth century. It is strongly recommended to all those who are interested in facts—whether as truthmakers, causal relata, objects of propositional attitudes, and so on—and to all those who are interested in non-extensional logics. I thank the Leverhulme Trust, whose Philip Leverhulme

Prize enabled me to find the time necessary to write this review.

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The Threefold Cord: Mind, Body and World, by Hilary Putnam. New York: Columbia University Press, 1999. Pp. xii + 234. H/b \$30.50, P/b \$18.50.

When philosophers want to explain their view concerning, say, realism or the mind-body problem, this is often done by demonstrating how the view relates to other major theories in contemporary philosophical discussions. Hilary Putnam is probably in the unique position that he could situate his present view in the space of rival theories without hardly ever referring to anyone but himself. In *The Threefold Cord* Putnam presents the development of his thinking in the nineties, with reference to his earlier views and to those of others. The book is written in his usual user-friendly style which effortlessly carries the reader from page to page, and the rich and intricate line of thought makes the reviewer struggle hard to give a concise summary of the main arguments.

The main novelty of this book is the combination of a newly found interest in perception with Putnam's earlier concerns about realism and the mind-body problem. The source of the intractable problems that have 'bedeviled philosophy since Descartes' (p. 128) is the idea that 'the immediate objects of perception were mental' (p. 9). This leaves us with an antinomy: either we have to posit an 'interface' between ourselves and the world we experience, or we have to resort to some sort of idealism which constructs the world out of experiences. Both options result in a 'loss of the world': the first because it prevents us from reaching to the world, the second because it cannot do justice to what Putnam calls—using William James's phrase—'the natural realism of the common man' (p. 10). There is an admitted strong influence of John McDowell here, and the solution Putnam adopts for the problem of perception is the disjunctive theory Putnam attributes to McDowell as well as to Austin and William James.

The problem is not limited to perception, but pervades the whole traditional notion of the mental. The picture underlying the modern theory of perception as well as conception is, familiarly, the 'inner theatre or inner movie screen' (p. 101); the assumption that 'there is a self-standing realm of experiences or mental phenomena' (p. 30). The interface problem is the same for perception and conception: the question of 'how does language hook on the world' is a replay of the question of 'how does perception hook on the world' (p. 12)—both become unanswerable once we accept the traditional picture.

This links up with Putnam's earlier work on realism and reference. The antinomy about truth echoes the antinomy about perception. On the one hand,

Dummettian antirealism and deflationism (which, in this respect, is claimed to be only a verbal variant of antirealism, p. 55) cannot do justice to common-sense realism—for example about the past—on the other hand, metaphysical realism involves an unacceptable metaphysical fantasy. Putnam's former internal realism was not a real solution, it simply pasted 'together elements of early modern realism and elements of the idealist picture' (p. 55). The real third way is to be found in Wittgenstein, who is interpreted as a realist rather than an antirealist. This completes 'what proved to be a long journey from realism back to realism' (p. 49). However, this is *common sense* and not metaphysical realism: the difference is that while the common-sense realist can appreciate all our ordinary talk about the reality of the past and suchlike, he does not 'make these words fated to say something *queer*' (54), that is, stand for some mysterious metaphysical relation.

Once we break away from the picture underlying the Cartesian cum materialist theory, the claims of traditional philosophy become unintelligible, rather than false, Putnam claims. For example, the following notions lack full intelligibility: identity of mental and physical states or properties (pp. 30–7 and 85); internal psychological state; functional state (p. 112). If someone asked the natural question of how we could, in this case, so much as form an idea of what all the discussions in the philosophy of mind (including much of Putnam's former work) were about, Putnam's answer would rely on the theory of meaning advocated by Charles Travis: that the content of utterances is irreducibly context-sensitive (p. 87). For example, although Putnam succeeds in defining internal psychological state as a state which does not presuppose the existence of anything other than the subject of this state (p. 112), the ensuing feeling that we understand this notion is an illusion, he says. For although we may understand it in one context—and hence the notion is *partially* intelligible—that's no guarantee that we would understand it, say, in the context where Jaegwon Kim claims that there is an internal state shared by knowledge and belief (p. 113). I couldn't really appreciate why this is more illuminating than simply saying that Kim is *wrong* in claiming the existence of such states, but in fact the arguments can be often translated to straight disagreements.

My main question about the book concerns Putnam's central thesis about the parallel between the 'interface problem' for perception and conception. Here is one way to reconstruct the debate about perception. There are two natural assumptions about perception: that we perceive material objects directly, and that what is thus perceived is mind-independent. But the argument from illusion and hallucination shows that these two assumptions are incompatible. One of them has to be given up, and accordingly, we are left either with Lockean representative realism or Berkeleyan idealism—neither of which is satisfactory, according to Putnam. Furthermore, Putnam is right: disjunctivism is indeed a way out of this dilemma, because it questions the force of the argument from illusion and hence the incompatibility of the two natural assumptions.