



## Neo-Fregean Meta-Ontology:

**DOI:**

[10.1093/acprof:oso/9780199645268.003.0005](https://doi.org/10.1093/acprof:oso/9780199645268.003.0005)

**Document Version**

Submitted manuscript

[Link to publication record in Manchester Research Explorer](#)

**Citation for published version (APA):**

Macbride, F. (2016). Neo-Fregean Meta-Ontology: Just Don't Ask Too Many Questions. In P. A. Ebert, & M. Rossberg (Eds.), *Abstractionism: Essays in the Philosophy of Mathematics* (pp. 94-112). Article 5 Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199645268.003.0005>

**Published in:**

Abstractionism

**Citing this paper**

Please note that where the full-text provided on Manchester Research Explorer is the Author Accepted Manuscript or Proof version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version.

**General rights**

Copyright and moral rights for the publications made accessible in the Research Explorer are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

**Takedown policy**

If you believe that this document breaches copyright please refer to the University of Manchester's Takedown Procedures [<http://man.ac.uk/04Y6Bo>] or contact [uml.scholarlycommunications@manchester.ac.uk](mailto:uml.scholarlycommunications@manchester.ac.uk) providing relevant details, so we can investigate your claim.



# NEO-FREGEAN META-ONTOLOGY: JUST DON'T ASK TOO MANY QUESTIONS

FRASER MACBRIDE, UNIVERSITY OF MANCHESTER  
FORTHCOMING IN EBERT AND ROSSBERG (EDS.) *ABSTRACTIONISM*, OXFORD UNIVERSITY PRESS, PP. 90-108

## 1. A NEW DILEMMA FOR NEO-FREGEANS

According to neo-Fregeans an expression that is syntactically singular and figures in a true sentence is guaranteed to have some existing thing in the world to pick out. That's why they think investigating what may be truly said using sentences that feature syntactically singular expressions will afford them insight into what exists. And that's why they're so interested in inventing periphrases for logical truths in which novel syntactically singular expressions figure, expressions that neo-Fregeans vouch to be numerical: they think this will afford them logical insight into what numbers exist.<sup>1</sup>

This whole approach to ontology in general and arithmetic in particular relies upon what appears to be an extraordinary cosmological hypothesis, that reality is so fecund that whatsoever artificial circumlocutions we conjure up to express what has already been truly said, reality will inevitably redeem the commitments that are made by these new-fangled ways of talking; that an independent reality cannot fail to include enough objects to correspond to the neoteric singular expressions in terms of which these supposed circumlocutions for established truths are framed. And this naturally leaves us gasping to ask the question: what possible grounds could there be for presupposing that reality is so replete with objects?

One significant source of the incredulity neo-Fregeanism occasions is the very natural idea that the structure of reality is *crystalline*: that reality consists of states of affairs—objects, properties and relations arranged thus-and-so—whose structure is fixed quite independently of language. If the structure of states of affairs is fixed independently of language then it can hardly be inevitable that because one statement  $S$ —that describes a certain configuration of objects, properties and relations—is true, that another statement  $S^*$ —that describes a different configuration of objects, properties and relations—is also true, not even if  $S^*$  has been defined as a circumlocution for  $S$ . To make  $S$  true, a state of affairs must embed the same objects, properties and relations that  $S$  describes. But there can be no guarantee that because such a state exists that there is also a state that embeds the distinct plurality

---

<sup>1</sup>See Wright [27] and Hale [10].

of objects, properties and relations that  $S^*$  describes. A reality that consists of independently structured states of affairs may simply fail to fall into line with the expectations of someone who has introduced  $S^*$  as a circumlocution for  $S$ ; reality may fail to cooperate by only yielding up states of affairs that make one statement true but not the other. So when combined with the idea that reality is crystalline the neo-Fregean doctrine that the existence of previously undisclosed objects may be thrown into relief by introducing circumlocutions for established truths becomes a declaration of reckless confidence—that reality will invariably cooperate with us to ensure that what we say by periphrasis will be no less true than what we said before introducing novel singular expressions to embellish the expression of our thoughts.

The idea that reality is crystalline is essentially metaphysical. One way to dislodge this idea is to replace it with another that is no less metaphysical, the idea that reality is fundamentally *plastic*: that the structure of states of affairs is somehow dependent upon, or imposed by, the structure of the sentences that are used to describe them. Were we to be convinced that reality is plastic in this sense it would no longer appear so hazardous to suppose that the syntactic structure of reworked truths should inevitably disclose the existence of novel objects. Why so? Because once it is recognized that reality is an amorphous lump, its systematization into discrete objects no more than a consequence of the manner in which language divides it up, then it should hardly appear surprising that the existence of objects is disclosed by applying the syntactical apparatus of our language to make true predications of the world.<sup>2</sup> If reality is essentially amorphous language *makes* its own harmony with the world by imposing structure upon it. So if only we could make sense of the idea that reality is amorphous then recognizing that reality is lacking in structure would relieve neo-Fregeans of the need to rely upon the fortuitous cooperation of the cosmos.

But the fact of the matter is that we can barely make sense of the idea at all. If reality is truly without structure then it becomes questionable how it can possibly exert any constraining influence upon how we think about it, truly or falsely.<sup>3</sup> This is because a reality without structure is a reality bereft of a character of its own, a mysterious *Ding an sich*. This means that there is nothing about such a reality itself that is capable of being responsible for the truth or falsity of the sentences of our language. In order for something to be truly described as being one way rather than another, it requires to be possessed of one character rather than another. But lacking a differentiated character altogether, an amorphous reality is incapable of fulfilling this responsibility, whilst the many familiar objects whose antics appear to make our sentences true or false—persons, electrons, numbers and so on—are reduced if reality is indeed one amorphous lump to mere *Dinge für uns*.

---

<sup>2</sup>See Dummett ([5] 504-5) who sometimes articulates his understanding of Frege's context principle *at the level of reference* in terms of our language imposing a structure upon an amorphous reality.

<sup>3</sup>See Rorty [20]: 4, [21] and Davidson [3]: 190, [4] where different versions of this concern are raised for the idea that conceptual schemes may carve up an amorphous reality in different ways.

Neo-Fregeans are thus confronted with a new dilemma. If reality is crystalline then their view that reality contains a sufficient plenitude of objects, properties and relations arranged thus-and-so to make their periphrases for established truths true is left hostage to cosmological fortune. Whereas if reality is plastic then it becomes dubiously coherent to conceive of our ordinary, scientific and mathematical claims about a diversity of objects as being genuinely true or false of an independent reality.<sup>4</sup>

If this dilemma is accepted then neo-Fregeans are left boxed into a corner with only an uncomfortable space of options to choose amongst. If they embrace the first horn then—despite how striking it is that mathematics is *unlike* any other science—the posits of mathematical discourse will turn out *not* to be significantly different in epistemological kind from the theoretical posits of natural science. But then it can hardly be a logical or *a priori* matter that the natural numbers exist. If they embrace the second horn then the natural numbers will turn out to be merely phenomenal constructions. But then the realist (platonist) aspect of neo-Fregean doctrine will have been abandoned. Jump one way, they land too close to Quine and his followers; leap the other way, they end up Brouwer's neighbours. So accepting this dilemma forces the neo-Fregeans down a cul-de-sac where *at the very least* what was distinctive about their view as a going concern in the philosophy of mathematics—logicism *and* platonism—threatens to be obliterated.

If they're going to be able to back out of this corner the neo-Fregeans had better find some intellectually respectable way of rejecting the dilemma posed. One way to do so would be to cast doubt upon a key presupposition that so far has been taken for granted, the dichotomy that says *either* our true sentences must 'mirror' the structure of a crystalline reality *or* 'impose' structure upon a plastic one. So long as we think that there is something substantial or constitutive to be said about what it takes for a statement to be true we will be hard pressed to avoid this dichotomy. After all, if true sentences aren't required to mirror the structure of an independent reality then how else can the configuration of the world we inhabit originate other than by the imposition of the structure of our language upon it? But if we can legitimately deny that there is an intelligible question to be raised, and therefore any informative account to be given, of how language hooks onto reality, then *prima facie* we can grant that a sentence *S* is true without thereby becoming embroiled in the uncomfortable consequences of having to say what *makes S* true—i.e. that either *S* mirrors the structure of a state of affairs or else imposes a structure upon it.

---

<sup>4</sup>What was the 'old' dilemma? Roughly this: either the periphrases the neo-Fregeans propose are merely definitional transcriptions for familiar truths in which case they don't introduce novel ontology, or they do introduce novel ontology in which case we can't stipulate that the novel contexts are periphrases for these truths (see Wright [28]: 277). By contrast, the new dilemma grants there is no need to understand neo-Fregean periphrases in such a reductionist spirit as the first horn of the old dilemma supposes. But this need only be granted for the sake of argument. In fact, I am also doubtful whether the neo-Fregeans succeed in showing that their periphrases should be understood as anything more than definitional transcriptions (MacBride [17]: 115-21). So my position is that both dilemmas, old and new, pose significant challenges to the coherence of neo-Fregeanism.

*Ontological quietism* is the view that there is indeed a sound theoretical basis for declining rather than rising to the challenge of saying what makes our sentences true. According to this species of quietism, there is no “sideways on” view that we can adopt whereby language-as-a-whole can be significantly compared to something else, *viz.* reality.<sup>5</sup> We are no more capable of adopting such a perspective outside of language from which we can measure language against reality and pronounce upon its representational efficacy than we can step outside our own skins. Consequently there is no “ontological gap” to be bridged between what is truly said and what the world is like. To suppose otherwise is to fall prey to the intellectually illicit temptation to think that there is an Archimedean point from which we may appreciate that our ordinary ways of talking have systematically failed to describe what the world is like. To demand supernumerary assurance of word-world co-operation before being willing to acknowledge the existence of objects that correspond to the occurrence of syntactically singular expressions in true sentences is to fall prey to just the same temptation. So by adopting ontological quietism, neo-Fregeans, if only they were willing, would be able to reject in a theoretically satisfying manner the metaphysical dilemma posed to them—a dilemma that falsely presupposes that either the metaphysics of mirroring or the metaphysics of imposition is forced upon us. They would avoid it by avoiding metaphysics altogether.

Whilst ontological quietism eschews constructive metaphysical claims, it is only convincing to the extent that it succeeds in providing an effective diagnostic deconstruction of the apparent intelligibility of questions about how language hooks onto reality. What is wanted before the neo-Fregeans can legitimately rely upon this view is a detailed work—that remains to be written—of intellectual anamnesis that allows us to identify and detach ourselves from the peculiar way, or ways, of thinking that make these questions appear inevitable.

The neo-Fregeans have not relied upon ontological quietism in defense of their position. But by no other means can neo-Fregeanism be distinguished from other speculative cosmological doctrines: ontological quietism remains the last best hope for sustaining the neo-Fregeans’ point of view.<sup>6</sup> So it is vital that neo-Fregeans set about the deeper, more therapeutic task of settling whether there is an intellectually satisfying basis for the anti-metaphysical stance that ontological quietism presupposes.<sup>7</sup>

---

<sup>5</sup>I employ here two helpful phrases of John McDowell’s (“sideways on” and “no ontological gap”) deployed by him to describe his own version of quietism about content (McDowell [18]: 27, 34).

<sup>6</sup>There are two other neo-Fregean brands on the market right now: maximalism (Eklund [7]) and quantifier variance (Sider [22]). I wouldn’t recommend using either product for reasons along the lines expressed in Hawley [12] and Hale and Wright [11]: 181-6. Nor do I think they ultimately evade the new dilemma proposed in this present paper either.

<sup>7</sup>Of course I don’t mean to deny that ontological quietism is a position that Wright has sometimes come close to endorsing, only that it has not been relied upon in his defence of neo-Fregeanism (see MacBride [17]: 121-8 for further elaboration). Quietism certainly appears to be there on the stage during Wright’s initial attempts to resuscitate neo-Fregeanism after Dummett had circumspectly abandoned the view during the late 1960s (see Dummett [6]: xlii-xliii). Wright declares: “Frege requires that there is no possibility that we might discard the preconceptions built into the syntax of our arithmetical language, and, the scales having

## 2. THINKING ABOUT STEPPING RIGHT TO LEFT ACROSS AN ABSTRACTION PRINCIPLE? THEN PLEASE MIND THE GAP!

Is there really any necessity for the neo-Fregeans to rely upon such a radical, anti-metaphysical point of view in order to render compelling their claim that reality cannot fail to include the objects ostensibly picked out by the novel singular expressions they introduce via periphrasis?

What's their *Grundgedanke*? It's that a state of affairs may be carved up in different ways, different constituents of the state revealed by different carvings. An abstraction principle sets forth the different ways in which a state of affairs may be carved up. Less metaphorically, an abstraction principle like (HP) (" $\#F = \#G \leftrightarrow F \approx G$ ") tells us how a token of one state of affairs type—described on the right-hand-side of the bi-conditional as the obtaining of a certain equivalence relation ( $\approx$ )—is also the token of another type—described on the left-hand-side as the identity of another kind of thing (a  $\#$ ).<sup>8</sup> By stipulating (HP), the concept of a  $\#$  is introduced so that there is no gap between the obtaining of one state of affairs type and the other.<sup>9</sup> So the stipulation of (HP) conceptually guarantees that if  $F \approx G$  then the  $\#$  of  $F$  and  $G$  exists. It is thereby guaranteed that the syntactically singular expressions " $\#F$ " and " $\#G$ " introduced by this periphrastic method have something in the world to pick out if the statement " $F \approx G$ " is true. Or so the neo-Fregeans seek to persuade us.

But recall the metaphysical dilemma posed for them: if reality is crystalline, has a structure of its own, then it is a matter of cosmological good fortune that previously undisclosed objects are thrown into relief by introducing circumlocutions for established truths; whereas if reality is plastic, lacking inherent structure, then it becomes dubiously coherent to conceive of abstraction principles about a plurality of self-standing objects as being genuinely true or false of an independent reality. Does their *Grundgedanke* enable them to avoid this dilemma? Not really.

If reality is crystalline then (HP) makes a substantial claim, correlating one kind of abstract entity (concepts) with another ( $\#$ s). It's a substantial claim because  $F$ ,  $G$  and the  $\#$  of  $F$  and  $G$  are distinct existences, and reality—since it has its own structure—may simply

---

dropped from our eyes, as it were, find in reality that there are no natural numbers, that in our old way of speaking we had not succeeded in referring to anything"; "there is no room for any ulterior failure of 'fit' between true sentences and the states of affairs that make them true. So there can be no philosophical science of ontology, no well-founded attempt to see past our categories of expression and glimpse the way in which the world is truly furnished" (Wright [27]: 14, 52). In the light of these familiar passages it is curious that Eklund should deny (contra [17]: 127-8) the suggestion that there is even a "hint", as he puts it, of quietism in Wright's neo-Fregean writings (see Eklund [7]: 104).

<sup>8</sup>(HP) is Boolos preferred symbolization for Humes Principle ([2]: 305). " $F \approx G$  is an abbreviation for the second-order formula expressing that there is a one-one correspondence between the objects falling under the concept  $F$  and those falling under  $G$ . The function sign " $\#$ ", dubbed "octothorpe" by Boolos, is interpreted—wishfully perhaps—by neo-Fregeans as the cardinality operator.

<sup>9</sup>See Hale [9]: 103-5 and Wright [28]: 277-8, [26]: 308-12.

choose not to combine them according to the pattern (HP) prescribes. So it's simply not the case that "we have the option", as Wright insists, of stipulating that the holding of  $\approx$  between  $F$  and  $G$  suffices for the existence of the  $\#$  of  $F$  and  $G$ .<sup>10</sup> We don't have the option because if the constitution of reality really owes nothing to us then reality is entirely within its rights to ignore our efforts to lord over it, to dissent from what are merely the edicts of men: so far from offering up a  $\#$  for every  $\approx$ -related  $F$  and  $G$ , reality may fail to correlate anything that deserves to be called a  $\#$  with  $\approx$ -related concepts, or indeed correlate anything at all. So if reality is crystalline then Wright is wrong to declare that there is "absolutely no gap" between the obtaining of an equivalence relations amongst concepts—described on the right-hand-side of (HP)—and the existence of  $\#$ s—described on the left-hand-side. Developing the metaphor, the point is not merely that there is a gap between the carriage and the platform, but that stepping off the train one may discover that there is nothing there at all.

Of course neo-Fregeans deny that to affirm the truth of (HP)—without some further corroborative evidence for the claim—is just to take a step in the dark. But they pose themselves an impossible task if they think they can earn the right to say so whilst acknowledging that reality has a structure of its own. Their *Grundgedanke* is that the existence of the objects described on the left-hand-side of (HP) calls for the obtaining of no token state of affairs beyond what was already described on the right-hand-side; it's just the same token state falling under different types. They think this excuses them from the charge that (HP) can't be stipulated because it is a substantial claim—a claim that when assumed inflates the size of our ontology by adding  $\#$ s to it. They think (HP) isn't a substantial claim because, as Hale endeavours to convince us, the right- and left-hand-sides of (HP) "are to be understood as different, equally correct descriptions of the same state of affairs. It is in this sense, and for this reason, that the proposed explanation is not ontologically inflationary".<sup>11</sup> But this does nothing to ameliorate and only multiplies the number of substantial claims to which neo-Fregeans are committed.

- (1) Even if it is granted that if  $\#$ s exist they are configured in states of affairs that also include  $\approx$ -related concepts, it is no less a substantial claim that there actually are states of affairs configuring  $\#$ s on condition that there are  $\approx$ -related concepts—since, as we have already reflected, an independent (crystalline) reality may fail to include any  $\#$ s whatsoever, even though there are  $\approx$ -related concepts.
- (2) There is an additional claim to which the neo-Fregeans are committed by the move Hale makes: that a token state of affairs including  $\approx$ -related concepts will also include their associated  $\#$  in its configuration. This is also a substantial claim because an independently constituted reality may just not embed sufficient structure in a single state of affairs to include all these abstract items. In fact, we arguably ask more of reality if we demand it accommodate both concepts and  $\#$ s in the configuration of a single state rather than finding room for them in adjacent

---

<sup>10</sup>See Wright [28]: 277.

<sup>11</sup>See Hale [9]: 103.

states—much as we ask more of an extended family to make do together under one roof rather than asking some of them to live next door.

Their *Grundgedanke* doesn't seem to be working out when it comes to avoiding the awkward consequences of supposing that reality is crystalline. But maybe things go better for them when it comes to the second horn of our dilemma. What was the second horn? If reality is a single amorphous lump then there is nothing about it that is capable of exerting a controlling influence upon whether our descriptions of a world populated by a plurality of objects are true or false. *Prima facie* the neo-Fregeans avoid this horn of the dilemma because reality is conceived by them not as a single lump but as a plurality of states of affairs. So *prima facie* the dilemma posed isn't fatal for them after all.

But this doesn't mean that any of their problems go away. Essentially the same dilemma presents itself in microcosm when we switch our attention from reality itself to its ingredient states. On the one hand, if each state of affairs has a structure of its own then each state is crystalline; but then it cannot be a matter for stipulation—again it turns out to be a substantial claim—that each state configuring  $\approx$ -related concepts is also a state configuring a  $\#$ . So recognising that reality comes divided up into component states of affairs doesn't make the endorsement of (HP) any less of a speculative commitment upon our part. On the other hand, if states of affairs are themselves amorphous lumps then things appear to go swimmingly for the neo-Fregeans—at least for a while. If states of affairs are sticky on the inside—owe their internal structure to us—then we do “have the option” (Wright) of laying down that states of affairs are configured as (HP) prescribes; by stipulating (HP) we impose the structure of our conceptual (syntactical) apparatus upon these states. It is then neither surprising

- (1) that there are states configuring  $\#$ s; nor,
- (2) that states of affairs including  $\approx$ -related concepts also include their associated  $\#$ .

But if these constituents are not there independently of the application of the syntactical apparatus of our language to describe them—they cannot be independently there if neo-Fregeans are to avoid the consequence of thinking these states are crystalline—then there is nothing about states of affairs considered *in themselves* that merits their being described one way rather than another. Conceived in isolation from speakers whose appointed role it is to carve up reality, states of affairs lack self-subsistent constituents to which our representations may succeed, or fail, to correspond. But then each state is a mysterious *Ding an sich* and incapable of exerting an intelligible control over whether our descriptions of it are true or false.

There's worse to come. If we accept that states of affairs are internally amorphous then it becomes questionable whether we have any grounds for supposing them to be externally (numerically) distinguished. If states of affairs have no structure of their own then we cannot appeal to differences in the objects, properties and relations from which these states are 'configured' to distinguish between them—since constituent objects, properties and relations are *Dinge für mich* that arise from the application of the syntactical apparatus of our



language. It therefore becomes questionable, if states of affairs are internally amorphous, whether neo-Fregeans have any right to affirm that reality is many rather than one. But if reality is one, an amorphous lump, then neo-Fregeans cannot avoid being thrown back upon the second horn of our dilemma.

### 3. WAYS OUT OR STOP-GAPS?

The neo-Fregeans have not responded directly to this dilemma so we can only speculate about what they might say. However, they have responded to Boolos' luminously expressed objection that the truth of (HP) cannot be a matter for stipulation but only speculation because (HP) can only be true if there is a function that maps  $\approx$ -related concepts to the same  $\#$  and concepts that aren't  $\approx$ -related to distinct  $\#$ s, and we can have no *a priori* guarantee that such a function exists.<sup>12</sup> Boolos' objection evidently corresponds to the first horn of our dilemma—albeit couched in the idiom of higher-order logic and absent a metaphysical gloss. Investigation reveals that neither of the strategies Hale and Wright suggest to deal with Boolos' objection provide a basis for satisfactory responses to either it or to the first horn of our dilemma.

The strategy upon which they place the greater reliance is intended to persuade us that the existential commitments of (HP) are no more untoward and just as benign as the commitment many contemporary metaphysicians make to the existence of abundant properties. The distinction between sparse and abundant properties Hale and Wright draw from Lewis.<sup>13</sup> Sparse properties, Lewis tells us, “carve reality at the joints”, whereas abundant properties “carve things up every which way”. So whilst there are only enough sparse properties to ground the objective resemblances and causal powers of things, there are so many abundant properties that there is one of them for any significant condition we could have expressed with a predicate. Hale and Wright hear this as Lewis offering a distinction between “*real worldly properties*” whose existence is “a non-trivial question”, and properties for which the “good standing of a predicate is *already* trivially sufficient to ensure” their existence ([11]: 197). They take this to mean that whilst there “is a gap” between a predicate's having a sense—its expressing a significant condition—and its referring to a genuinely sparse property, there is “no additional gap to cross which requires ‘hitting-off’ something on the other side”, *i.e.* between a predicate with sense and the abundant property it expresses ([11]: 207). And this leads them to infer that whilst there is an inevitable

<sup>12</sup>See Boolos [1]: 306 and Hale and Wright [11]: 194-209. The sceptical question Boolos actually asks about the truth of (HP) is: “do we have any analytic guarantee that there is a function that works in an appropriate manner?”. Hale and Wright respond that “Boolos undoubtedly demands too much when he asks for ‘analytic guarantees’ in this area” ([11]: 195). But there's injustice in this complaint: Hale and Wright have often used “analytic” to describe what they take to be the distinctive character of (HP) and Boolos was only playing along in this passage, expressing himself using their preferred idiom. See, for example, Wright [28]: 279. And the force of Boolos' point is not diminished by substituting the weaker notion of “a priori” for the stronger one of “analytic”.

<sup>13</sup>See Hale and Wright [11]: 197-8. The terminology of abundant and sparse properties originates in [15]: 10-9, Lewis' seminal work on properties—rather than [16] where Hale and Wright direct us.

element of risk involved in holding that a predicate refers to a sparse property—since it can't be taken for granted that we know where the joints in nature lie—there is no corresponding risk involved in supposing that a significant predicate picks out an abundant property.

Impressed by what they perceive to be a critical insight into the ontology and epistemology of properties, Hale and Wright seek to establish a favourable comparison between the manner in which abundant properties are made manifest in the choreography of our language and the way in which, according to them, abstract objects, such as #s, are given to us. In neither the case of abundant properties nor abstract objects is it possible to have 'direct' (Gödelian) insight into the existence of the entities in question—if we are to acknowledge their existence, we must accept them sight unseen. Nonetheless, in both cases it is possible to have 'indirect' insight into their existence: it is possible to detect the fact that the linguistic vehicles via which abundant properties and abstract objects reveal themselves to us have reference signaling features. What it is about a linguistic vehicle that signals it has reference? That varies depending upon the logical category of the vehicle: whereas a predicate is required only to have a (sufficiently) determinate satisfaction condition to signal that it has reference to an abundant property, a name must not only be syntactically singular but also figure in a true sentence to pick out an abstract object.<sup>14</sup>

This provides the substance of their response to Boolos' objection—and, by proxy, the first horn of our dilemma. It would mark a deep confusion in our thinking about the nature of abundant properties were we to question the referential credentials of a predicate with a determinate satisfaction condition because we lacked independent evidence of the existence of the abundant property the predicate purports to express. It would mark an analogous confusion in our thinking about the nature of abstract objects were we to question the referential credentials of a syntactically singular expression (“#*F*”) introduced by the periphrasis of a received truth (“*F*  $\approx$  *G*”). To demand independent ratification of the existence of an abundant property before acknowledging that a predicate refers to it would be to completely fail to grasp the all-important difference between abundant properties that are constitutionally given to us by the fact that they are expressed by predicates in good standing, and sparse properties that rely upon worldly investigation for their identification. Similarly to demand independent ratification of the existence of abstract objects before acknowledging that syntactically singular expressions introduced by periphrases for true sentences refer to them would be to fail to grasp the great gulf between abstract objects that are constitutionally given to us via the expressions that denote them, and concrete objects that require *a posteriori* investigation to establish their existence.

---

<sup>14</sup>What does it take for a predicate to be bestowed with a sufficiently determinate satisfaction condition? Hale and Wright issue a promissory note to the effect that the answer to this question will be given by an inferential role semantics ([11]: 198-9). Of course to vindicate neo-Fregeanism, the reference-demanding sentences in which the names of abstract objects feature will need to be atomic and extensional as well as true. You know the drill!

Does this show that it is wrong-headed to question whether reality is so replete with objects that expressions like “ $\#F$ ” are guaranteed a reference because they are introduced by an abstraction principle like (HP)? Not if the gulf between abundant and sparse properties has been exaggerated or misconstrued. According to Hale and Wright, the distinction between sparse and abundant marks a sharp boundary: whereas a sparse property is a “*real worldly property*”, an abundant property is a “*way of being*”.<sup>15</sup> But that’s not how Lewis conceives of the distinction. According to Lewis, sparse properties are just an “elite minority” amongst the abundant properties, not a different kind of beast altogether. This makes it possible for Lewis to say that the distinction between sparse and abundant is a “matter of degree”—for example, grue and bleen are less natural properties than the colours—and less natural properties can be reached “by not too-complicated chains of definability from the perfectly natural properties”.<sup>16</sup> Most importantly, so far as Lewis is concerned, the existence of abundant properties is neither a trivial matter nor guaranteed *a priori* by reflection upon language. He believes in these controversial entities “for the sake of enough benefit in unity and economy”, in particular because abundant properties are able to do work in providing a plenitudinous source of semantic values for a systematic semantics—whose compositional aims would be frustrated by relying upon any more impoverished a store—and work characterising the content of our intentional attitudes, contents that cannot be relied upon to carve reality up at the joints. But this does not mean the existence of abundant properties is trivial or guaranteed. It only means that we have good reason to believe in the existence of these things because of the theoretical benefits that talk of them brings. Ultimately our reasons for believing in the existence of such sparse properties as mass or charge are no different: in neither the case of sparse nor abundant properties is it trivial that something exists; we are only committed to acknowledging the existence of these things as a consequence of adopting what appears to be the best theory.

So far from establishing that the neo-Fregean commitment to abstract objects is no more contentious than the commitment of contemporary metaphysicians like Lewis to abundant properties, the comparison Hale and Wright draw has the reverse of the effect they set out to achieve—it brings into even sharper focus than before the truly idiosyncratic character of their approach to ontology. Of course, there are other philosophers whose thinking about properties is more nearly analogous to Hale and Wright’s conception of abstract objects. According to Strawson, for example, it suffices for the existence of a property  $\Phi$  that we can truly say “that either something is  $\Phi$  or nothing is  $\Phi$ ”.<sup>17</sup> Since, by Strawson’s lights, this is a tautology, not a fact about the world, it follows that the mere meaningfulness of “ $\Phi$ ” suffices for its having a reference. But this view of properties is perilously close to

---

<sup>15</sup>See Hale and Wright [11]: 197-8, their italics. It’s difficult to ascertain what Hale and Wright intend to imply by this contrast. Is it supposed to mean that a sparse property is “real”, whilst an abundant property isn’t? Or that an abundant property is real but unworldly? If an abundant property isn’t real then its existence can’t be a “trivial” matter. If an abundant property is unworldly but still real then it’s unclear why its existence should be any less substantial a matter than the existence of any other real thing.

<sup>16</sup>See Lewis [15]: 13-4 and [16]: 59-61, 67. A similarly abductive approach to the metaphysics of properties is recommended in Swoyer [24]: 254-5, also cited by Hale and Wright [11]: 198.

<sup>17</sup>See Strawson [23]: 183-4.

Hale and Wright's own view of abstract objects. It therefore faces analogous challenges and—for the very reason that it is akin to Hale and Wright's theory—cannot supply us with independent corroborative evidence for their view. In both cases what is still wanting is an account of how the choreography of expressions—even with truth added—can be “trivially sufficient” for the existence of anything.

What about their second strategy for responding to Boolos' objection? Does it fare any better than the first?<sup>18</sup> Boolos, recall, asks for a guarantee that there exists a function that maps concepts to objects in such a manner that (HP) comes out true. Hale and Wright argue that to demand such a guarantee is to press a sceptical challenge about the existence of #s, a challenge which we have “no clear model” of how to answer and with which we should really have no more sympathy than we have with external world scepticism. The reason that we have no clear model of how to provide the guarantee Boolos demands is that (HP) is conservative. This means that (HP) has no consequences for what the world (without #s) is like that we could not have drawn anyway. So (HP) has no differential consequences for what the world (without #s) is like: whether (HP) is true or false, the world (without #s) will be just like it is. Hale and Wright conclude that there can be no evidence that we can draw from what the world (without #s) is like that will speak in favour of the truth of (HP) or its falsity. So by demanding evidence that speaks in favour of the truth of a conservative principle like (HP), Boolos has simply posed a challenge that cannot in principle be met, a merely sceptical one.

But this response to Boolos only seems credible because Hale and Wright fail to distinguish conservativeness from dispensability. Whereas the conservativeness of (HP) implies that we don't gain anything by *adding* (HP) to a non-mathematical theory, the dispensability of (HP), if it is dispensable, implies that we don't lose anything by *subtracting* (HP) from a theory that's already framed in the idiom of mathematics.<sup>19</sup> Hale and Wright are correct to think that the conservativeness of (HP) rules out a certain kind of direct confirmation for the existence of the function to which (HP) is committed: there is nothing in the world (without #s) whose presence there—not even a miracle—could provide us with a sign that (HP) is true rather than false. But the conservativeness of (HP) is consistent with the indispensability of #s to (e.g.) physical theory. So the conservativeness of (HP) does not rule out our having indirect confirmation of the existence of a function that behaves in the appropriate manner, via the contribution that (HP) makes to our best theory of the world, a world that we cannot effectively predict or explain unless we include #s in our fundamental descriptions of it. There is therefore no reason to think that the challenge Boolos poses is merely an expression of hyperbolic doubt. The doubt may in principle be quelled by the indirect confirmation that accrues to talk of #s because of the indispensable contribution that #-talk makes to our best physical theory.<sup>20</sup> And since both strategies

<sup>18</sup>See Hale and Wright [11]: 202-5.

<sup>19</sup>See Field's [8] where the contrast between conservativeness and dispensability shapes Field's defense of mathematical fictionalism.

<sup>20</sup>In such circumstances (HP) would be confirmed in the same way that, according to Quine, mathematical theories receive confirmation more generally: through their indispensable contribution to our best

Hale and Wright have put forward to meet this challenge have failed, the need to appeal to some form of anti-metaphysical quietism to escape the new dilemma for neo-Fregeanism appears no less pressing.

#### 4. IS ONTOLOGICAL QUIETISM A FORM OF RELATIVISM?

Ontological quietism, as I have characterized the view, states that there is no getting behind the syntactic categories of language to make an unblinkered inspection of reality itself; we can only submit to the norms of our discourse that fix the truth conditions for saying that things are thus-and-so and register in circumstances where those truth conditions are satisfied that things are thus-and-so. So far from furnishing a foundation—or perhaps better, ‘anti-foundation’—for neo-Fregeanism, Matti Eklund has argued that the quietism I have described is nothing more than the usual mission impossible variety of conceptual relativism that self-destructs when opened. But Eklund’s argument relies upon a radical misconception of what ontological quietism is about. Nevertheless considering it will help us get clear about the character of the view he seeks to dismiss.

Let’s begin by reminding ourselves of a couple of home truths about a certain crude form of conceptual relativism. First, what is it? Conceptual relativism of the relevant kind is the doctrine that by shifting from one conceptual scheme to another a sentence that can be seen to be true from one point of view can also be seen to be false from another *even though the meaning of the sentence in question remains the same*. The italicized qualification is important because it distinguishes the intoxicating doctrine of conceptual relativism from the innoxious doctrine that *truth is relative to meaning*. According to the latter view, the truth of a sentence is the upshot of two factors: what a sentence means and what the world is like. The meaning of a sentence fixes its truth conditions, whilst the way things stand settles whether these conditions are satisfied or not, together they determine the sentence’s truth-value. Second, what’s wrong with conceptual relativism (at least in this crude form)? It is because the doctrine that truth is relative to meaning is so evident that conceptual relativism (so understood) can so easily be seen to be incoherent. If the meaning of a sentence  $S$  remains constant across schemes then, since truth is relative to meaning, the truth-value of  $S$  should remain constant across these schemes too (assuming what the world is like remains fixed). But conceptual relativism just is the view that the truth-value of  $S$  may vary from one scheme to another even though its meaning (and the world) remains the same. Consequently as long as we continue to endorse the doctrine that truth is relative to meaning we cannot also endorse conceptual relativism without

---

scientific theories (see, for example, [19]). Quine’s approach to mathematics is often opposed on the grounds that (a) it makes no sense of the methodological independence of pure from applied mathematics—pure mathematicians don’t usually work with an eye to physical applications—and (b) higher mathematics lacks physical applications altogether. It is noteworthy that neo-Fregeanism fares no better on either score: (a) mathematicians don’t usually work with an eye to whether the objects they talk about are capable of being introduced by abstraction principles like (HP); (b) it is highly contestable whether all mathematical objects can be introduced by abstraction (as Hale and Wright admit, [11]: 180 n.6).

thereby countenancing a descent into contradiction too—affirming that  $S$  has more than one truth-value relative to a single scheme.

Now let's compare this argument against crude conceptual relativism with Eklund's description of what he calls the "collapse"<sup>21</sup> of quietism. Ontological quietism, recall, is the doctrine that we can only acquiesce to the norms of our discourse and record whether according to them  $F$ s exist. Eklund's strategy is to argue that this doctrine cannot be made to cohere with the possibility that norms of discourse may differ between languages. His argument presupposes that someone who adopts quietism denies him or herself any principled basis for choosing between the norms of different languages. Why suppose this? Presumably Eklund thinks (although he doesn't explicitly say) that making a principled choice between norms requires acknowledging that reality has an independent structure of its own that some norms of discourse enable us to describe more effectively than others, something a thoroughgoing quietist is committed to denying. Let us grant this presupposition for the time being. It follows that so far as a committed quietist is concerned, one norm is as good as any other. But this betrays the fact that quietism is just another form of relativism and no less readily confuted. The collapse of quietism now comes quickly. Because a quietist is unable to choose between divergent norms, he or she is committed to acquiescing to them all. But this is not possible to do because divergent norms of discourse place incompatible demands upon a speaker.

To make vivid his case Eklund invites us to imagine the following scenario. Suppose there are two simple languages  $L$  and  $L^*$  that consist of corresponding stocks of singular terms, predicates and logical particles that admit of straightforward translation. Furthermore whilst there are some singular predications framed using the predicate " $F$ " of  $L$  that are true relative to the norms of discourse governing  $L$ , there are no singular predications that can be framed using the translation of " $F$ " in  $L^*$  (" $F^*$ ") that are true relative to the norms that govern  $L^*$ . Submitting to the norms of  $L$  the quietist must acknowledge that  $F$ s exist (because there are some things of which " $F$ " is truly predicated) whilst submitting to the norms of  $L^*$  she must deny that  $F$ s exist (because there are no things of which " $F^*$ " is truly predicated and " $F^*$ " means the same as " $F$ "). In order to avoid such a battery of incompatible demands being placed upon us we must deny either (i) what would otherwise appear to be an evident possibility—that norms of discourse may differ between languages—or else (ii) steer clear of quietism. It is the latter course that Eklund recommends.

In order for this *reductio ad absurdum* to be effective Eklund requires from our quietist the concession that a predicate that is satisfied relative to one set of norms has a translation in a different language that fails to be satisfied relative to another set of norms *even though the predicate and its translation mean the very same thing*. The italicized qualification is vital to Eklund's case. If " $F$ " means something different in  $L$  from what " $F^*$ " means in  $L^*$  then what the speakers of  $L$  affirm by saying  $F$ s exist isn't what the speakers of  $L^*$  deny when they say  $F^*$ s don't. So if it is to be the case that a quietist is placed under

---

<sup>21</sup>See Eklund [7]: 104-5

a burden of incompatible demands when futilely endeavouring to submit to the different norms of different languages, the norms in question had better govern predicates that mean the same.

However, our quietist has no reason to concede and every reason to dismiss the possibility of a predicate whose translation into another language has the same meaning but whose proper use is governed by different norms. The norms implicitly governing the practices that constitute a language circumscribe the conditions under which it is correct to use the expressions of that language. In this way the norms of a language fix the truth conditions of what may be said using those expressions. Norms differ where the conditions they circumscribe for the correct use of the expressions they govern differ. It follows that if two predicates are governed by different norms then *ipso facto* they must differ in their correct use, *i.e.* the conditions under which they are correctly applied must differ too. But predicates that cannot be correctly used in the same way cannot have the same meaning—to suppose otherwise would be to implausibly credit facts about meaning with an independence from facts about correct usage that would render it utterly mysterious how grasping the correct use of an expression facilitates an understanding of what the word means—and predicates that mean different things can hardly be translations.

Now that we understand why the concession Eklund demands should not be granted, it is his case against quietism that quickly collapses.<sup>22</sup> Where the norms of languages diverge, the meanings of the words governed by them diverge too. But this only means that these words are being used to render heterogeneous sayings about the world. So our quietist's attempt to cleave to the norms that govern these words cannot give rise to the overtly incompatible commitments that arise from an adherence to conceptual relativism. For example, since they are governed by different norms and therefore mean something different, the predicates “*F*” and “*F\**” are used in their respective languages to ascribe different features to things. It follows that there is no incompatibility generated by our quietist acquiescing simultaneously to the norms of *L* and *L\**: there is no contradiction inherent in his or her truly saying that when some things exhibit one feature they lack another. The fact that our quietist is required to truth-evaluate the sayings of these languages differently because of the different norms that govern them reveals nothing more

---

<sup>22</sup>Eklund also offers an alternative gloss on the argument outlined above: “The idea behind the argument is simple. The quietist holds that when the existence of *F*s is not ruled out by the contingent empirical facts there is a possible language with singular terms successfully referring to the *F*s. But for there to be such terms, *F*s must exist. But then quietism is false” ([7]: 105). But Eklund does not explain here why he thinks, and it is entirely unclear in the light of the above discussion why he should think, that our quietist is committed to holding both (1) that *F*s don't exist as a consequence of the norms that govern his or her home language and (2) that *F*s do exist as a consequence of the norms of a possible language. So this gloss does nothing to advance the case for the prosecution. It is tempting to speculate that Eklund has elided quietism in this passage with his own favoured interpretation of neo-Fregeanism, *viz.* maximalism, the doctrine according to which “*F*s exist just in case (a) the hypothesis that *F*s exist is consistent, and (b) *F*s do not fail to exist, simply as a matter of contingent empirical fact” (see his [7]: 102). But maximalism (so-defined) is evidently quite different a view from quietism as I have characterised it.

than a wholesome commitment upon the quietist's part to the benign relativity of truth upon meaning.<sup>23</sup>

What has led Eklund astray here—led him to misconceive of quietism as a pernicious form of conceptual relativism—is a way of thinking about alien languages and schemes due to Eli Hirsch.<sup>24</sup> In his *Concept of Identity* Hirsch describes a possible language in which the word “car” is replaced by two others, “incar” and “outcar”. The former expression applies to any car that is wholly inside a garage or to the segment of a car that is inside a garage when the car is partly outside. The latter applies to any car that is wholly outside a garage or to the segment of car that is outside a garage when the car is partly inside. In this language, when a car leaves a garage, an incar is said to dwindle then pass away whilst an outcar comes to be outside the garage, an object that gradually grows to be the size and shape of the original incar. According to Hirsch, it would be a “mistake” for a speaker of English to recognize the path of the shrinking incar as corresponding to the career of an object: “It is certainly incorrect, at least in our language, to assert, in the ordinary circumstances of a car leaving a garage, that an object shrank in size and vanished” ([14]: 32). Hirsch seeks to explain the felt sense in which it is incorrect in English to affirm the coming to be and passing away of incars and outcars by appealing to a conflict between the identity criteria for these purported kinds of objects and the established criteria for tracing an object's career embodied in our ordinary concept of identity—criteria that, for example, require us to trace objects along change-minimizing paths that incars and outcars are incapable of following because they come to be and pass away even when cars undergo no (non-locational) change whatsoever ([14]: 79-81). So whilst it is illegitimate for speakers of English to assert that an object passed away as a car exited its garage, it would be legitimate for a speaker of an alien language to do so if his or her language embodied a more relaxed concept of identity, one more tolerant of the existence of objects that don't follow familiar (change-minimizing) career paths.

If Hirsch is right about this then even though we can extend English by introducing vocabulary for incars and outcars what we are thereby enabled to say can never be true because the satisfaction conditions of these words conflicts with the application of the concept of identity that regulates English. By contrast, in the more relaxed environment of an alien language regulated by a different concept of identity it may be truly said that incars and outcars exist. Hirsch does not take this to imply that the introduction of “incar”-“outcar” vocabulary into English misfires altogether—the words “incar” and “outcar” mean exactly

---

<sup>23</sup>Of course it may also be the case that despite ascribing different features to reality, the predicates of two or more languages cannot be simultaneously satisfied because they collectively make impossible demands on the size of reality. This is an inter-linguistic version of the intra-linguistic ‘Bad Company’ objections familiar from the literature. See [17]: 143-6 for an introduction to the latter debate and Weir [25] for an insightful contribution. However since the predicates in question have different meanings (rather than the same meanings applied relative to different norms) this is a quite different objection to the one that Eklund suggests in his paper. Whether the quietist can deal with the ‘Bad Company’ objections is an independent and signally important matter for another occasion.

<sup>24</sup>See Hirsch [13]: 361-3, [14]: 32-33 and Eklund [7]: 102-4.



what they are stipulated to mean even though their application conflicts with the regulative role of the established concept of identity, it's just that they can never be truly said in English of a vehicle inside or outside, entering or exiting a garage. So if Hirsch is right he has provided us with a way of understanding how it is possible for the kind of setup to arise that will impose incompatible demands upon our quietist: a scenario in which there are two languages, both including the same “incar”-“outcar” vocabulary, with the *very same* meanings, but where because of the different regulative roles the divergent notions of identity perform in these languages it is true to say in one language that incars and outcars exist but false in the other.

In describing the envisaged setup in this way, Hirsch (and Eklund) are taking for granted that it is a fact *about* English that our ordinary criteria for tracing the careers of persisting objects rule out the existence of such wayward objects. But *prima facie* there is nothing about English itself that prohibits our acknowledging their existence. It does not appear to be a grammatical or a logical error to admit them—there is no contradiction inherent in saying that there is a car and an incar in the garage, there's not even a parking problem for them. The fact is merely that they are outlandish, “bizarre”. So *prima facie* it is a better explanation of the felt incorrectness of asserting that incars and outcars exist that doing so conflicts with other commitments—theoretical or otherwise—we have already made (rather than linguistic norms to which we have previously acquiesced). Likely these commitments arise from a nascent theory of physical objects that informs our basic judgments about what things exist in the world surrounding us. Perhaps it is even, as Hirsch goes on to speculate concerning our thinking about the self, a “basic kind of psychological necessity... part of human nature” ([14]: 302) to conceive of the world in terms of such a theory. But so long as it remains to be established that our reluctance to admit the existence of incars and outcars flows from the fact that we as English speakers have acquiesced to norms of discourse that rule them out, rather than the rudimentary theoretical commitments we have made, there is nothing in the comparison of English and the alien language Hirsch describes to suggest the kind of scenario that need trouble our quietist.

This last point may be strengthened by another dilemma. If it is a fact about English that our notion of identity is logically or grammatically intolerant of our correctly asserting that there are incars or outcars then the vocabulary of “incars” and “outcars” cannot even be introduced into English. If that is the case then it cannot be false but only meaningless to say there is an incar in the garage. Alternatively, if the felt incorrectness of asserting there are incars or outcars is owed to another source, theoretical or psychological, then it cannot be false *relative to the the norms of our discourse* that such things exist. Either way there is no prospect of our saying something false in English that is said truly by alien schemers.

## 5. CONCLUSION

If ontological quietism is the last best hope for neo-Fregeanism—the only way to really make charitable sense of what they collectively say—and quietism cannot be readily confuted, then what? Then, if it is a deeper understanding of ontology we seek, it is time to set about the envisaged work of intellectual anamnesis, discover whether we can intelligibly stop asking questions about how language hooks onto reality without relinquishing what undoubtedly stands in our way, the congenital conviction that the world upon which consciousness dawns is not of our making.

## ACKNOWLEDGEMENTS

Earlier versions of this paper were presented to a Metametaphysics conference held in Birmingham and a metaphysics seminar in Cambridge. I am grateful to the audiences there and also to Arif Ahmed, Helen Beebe, Tim Button, Philip Ebert, Jane Heal, Frederique Janssen-Lauret, Ken Gemes, Mike Martin, Nick Jones, Adam Stewart-Wallace, and an anonymous referee from Oxford University Press for comments on a penultimate draft.

## REFERENCES

- [1] George Boolos. Is Hume's principle analytic? In R. Heck, editor, *Language, Thought and Logic: Essays in honour of Michael Dummett*. Clarendon Press, Oxford, 1997.
- [2] George Boolos. *Logic, Logic and Logic*. Harvard University Press, Cambridge, Mass., 1998.
- [3] Donald Davidson. On the very idea of a conceptual scheme. *Proceedings and Addresses of the American Philosophical Association*, 47:5–20, 1974. Reprinted in his *Inquiries into Truth and Interpretation*.
- [4] Donald Davidson. *Inquiries into Truth and Interpretation*. Oxford University Press, New York, 1984.
- [5] Michael Dummett. *Frege: Philosophy of Language*. Duckworth, London, 1973.
- [6] Michael Dummett. *Truth and Other Enigmas*. Duckworth, London, 1978.
- [7] Matti Eklund. Neo-fregean ontology. *Philosophical Perspectives*, 20:95–121, 2006.
- [8] Hartry Field. *Science Without Numbers*. Basil Blackwell, Oxford, 1980.
- [9] Bob Hale. Grundlagen 64. *Proceedings of the Aristotelian Society*, 97:243–61, 1997. Reprinted in Hale and Wright, *The Reason's Proper Study*.
- [10] Bob Hale and Crispin Wright. *The Reason's Proper Study: Essays towards a Neo-Fregean Philosophy of Mathematics*. Clarendon Press, Oxford, 2001.
- [11] Bob Hale and Crispin Wright. The metaontology of abstraction. In David J. Chalmers, David Manley, and Ryan Wasserman, editors, *Metametaphysics*. Oxford University Press, Oxford, 2009.
- [12] Katherine Hawley. Neo-fregeanism and quantifier-variance. *Aristotelian Society Supplementary Volume*, 81:233–49, 2007.
- [13] Eli Hirsch. Physical identity. *Philosophical Review*, 1976.
- [14] Eli Hirsch. *The Concept of Identity*. Oxford University Press, Oxford, 1982.
- [15] David Lewis. New work for a theory of universals. *Australasian Journal of Philosophy*, 61:343–77, 1983. Reprinted in his *Papers in Metaphysics and Epistemology*.
- [16] David Lewis. *On the Plurality of Worlds*. Blackwell, Oxford, 1986.
- [17] Fraser MacBride. Speaking with shadows. *British Journal for the Philosophy of Science*, 54:103–63, 2003.
- [18] John McDowell. *Mind and World*. Blackwell, Oxford, 1994.
- [19] Willard Van Orman Quine. Things and their place in theories. In *Theories and Things*. Harvard University Press, Cambridge, Mass., 1981.
- [20] Richard Rorty. The world well lost. *The Journal of Philosophy*, 69:649–665, 1971. Reprinted in his *Consequences of Pragmatism*.
- [21] Richard Rorty. *Consequences of Pragmatism*. Minnesota University Press, Minneapolis, 1982.
- [22] Theodore Sider. Neo-fregeanism and quantifier-variance. *Aristotelian Society Supplementary Volume*, 81:201–32, 2007.
- [23] Peter Strawson. *Individuals*. Methuen, London, 1959.
- [24] C. Swoyer. Theories of properties: From plenitude to paucity. *Philosophical Perspectives*, 10:243–64, 1996.
- [25] Alan Weir. Neo-fregeanism: An embarrassment of riches. *Notre Dame Journal of Formal Logic*, 44:13–48, 2003.
- [26] Crispin Wright. Is Hume's principle analytic? *Notre Dame Journal of Formal Logic*, 40:6–30.
- [27] Crispin Wright. *Frege's Conception of Numbers as Objects*. Aberdeen University Press, Aberdeen, 1983.
- [28] Crispin Wright. On the philosophical significance of Frege's theorem. In R. Heck, editor, *Language, Thought and Logic: Essays in honour of Michael Dummett*. Clarendon Press, Oxford, 1997.