Forms of Thought, by E.J. Lowe. Cambridge: Cambridge University Press, 2013. Pp. xii + 213. H/b GBP50.

It was with great sadness that I heard of the death of E.J. Lowe in early January 2014. I have learned a great deal from his writings, and I very much regret not having completed the review which follows in time for him to comment on it. His contributions to the philosophical debates in which he partook, and which he did so much to shape, will be sorely missed.

E.J. Lowe's recent book *Forms of Thought* is subtitled 'A Study in Philosophical Logic'. The preface and first chapter lay out what is meant by this: Lowe claims that the underlying aim of the discipline in which he is engaged (philosophical logic) is to 'reveal *forms of thought*, at least to the extent that thoughts are propositional in character and thus capable of standing in logical relations to one another' (p. ix); though he suggests that 'in practice that task must be approached by investigating the structure of sentences in natural language – since it is in such sentences that our thoughts are clothed and communicated' (p. ix). But the book, it seems to me, is equally an essay in what Strawson (1959) called *descriptive metaphysics*: that is, it is an attempt not only to characterize our ordinary ways of thinking and talking about the world, but also to vindicate them as fundamentally correct. Describing what is to come, Lowe writes:

I criticize the ontological presuppositions of the type of formal predicate logic that contemporary philosophers have inherited from the founders of modern quantificational logic, notably Gottlob Frege and Bertrand Russell, and propose some major reformations. This carries… forward the task… of constructing a system of formal logic which perspicuously reflects the neo-Aristotelian ontological presuppositions of my own preferred system of categorial ontology…. (p. 3)

Thus, Lowe rejects what he regards as the revisionary metaphysics of Frege, Russell, and those influenced by them such as Quine, as well as the accompanying formal logic, preferring instead to employ the ontologically more adequate '*logic of natural language*' (p. 1).

After the introduction, the remainder of the book is divided into nine further chapters and four parts: there are three chapters on reference and predication; and two on each of identity, modality, and conditionality. More specifically, chapter 2 considers singular thought and reference, while chapters 3 and 4 present Lowe's preferred neo-Aristotelian four category ontology, and discuss the varieties of predication involved in talking about entities of these various sorts. Chapters 5 and 6 are concerned with criteria of identity. Chapter 7 aims to show that standard arguments against contingent or vague identity are question-begging; and chapter 8 rejects possible worlds accounts of modality, favouring a view on which necessity and possibility are grounded in essences. In chapter 9 Lowe endorses a univocal account of the conditional, so that the distinction between the subjunctive and the indicative is not 'semantically or logically

very important' (p. 163), and on which the logic of this connective is 'entirely reducible to standard monadic modal logic' (p. 180); chapter 10 then argues that we should understand conditional probability in terms of conditionals, and not vice versa.

As should be clear from the foregoing summary, the book covers a lot of ground; and while all of the main chapters, with the exception of the eighth, are based on previously published material, there is much here that is of value. For instance, in chapter 7 a very interesting alleged counter-example to the principle that there can be no vague identity is put forward: it involves 'the capture of a free electron by a helium ion, which thus comes to have two orbital electrons, one of which is subsequently emitted' (p. 135); Lowe suggests that it is ontically indeterminate whether the emitted electron is the one that was captured. Equally, the discussion in chapter 9 of the transitivity of the conditional (which Lowe endorses, and defends against a purported counter-example), is both subtle and sophisticated. However, if I am right about the Strawsonian ambitions of Lowe's study, what is disappointing is the omission from the book of any serious consideration of quantification. It is the great advancement in our understanding of this form of thought – especially in its connection with relational predication, which is not discussed in any detail either - that provides the principal motivation for contemporary philosophers to accept the formal logic of Frege rather than that of Aristotle. Without some means of neutralizing the arguments from logical and expressive power that support its adoption, few advocates of contemporary formal logic will be swayed by Lowe's invocations to acquiesce in a system of philosophical logic with less revisionary ontological presuppositions. In what follows, I aim to show why.

Lowe accepts an ontology which recognizes four categories of entity. His taxonomy can be induced by means of two cross-cutting distinctions: the difference between the substances and the insubstantial (dependent) beings; and the contrast between particulars and universals. Thus, objects (or primary substances) are particular substances; kinds (or secondary substances) are universal substances; attributes (or properties) are insubstantial universals; and modes (or tropes) are insubstantial particulars. By contrast, on the kind of contemporary ontological position that Lowe rejects there is at best one distinction amongst kinds of being, namely that between particulars (i.e. objects) and universals (i.e. properties and relations) – if the latter are countenanced at all. (Lowe himself claims that he is 'happy to include relational universals in [his] ontology' (p. 32); but he gives no clear indication of how to do so.) This distinction is the ontological correlate of that between singular terms and predicates in standard formal logical systems: universals are recognized in second-order systems with quantification into predicate position, but not in their restricted, first-order variants.

Lowe devises a baroque method of talking about the various items in his ontology, constructing a formal language with terms for beings in each category, and, crucially, two different formation rules for putting them together to make atomic formulae - one to express predication, the other to represent the (equally) formal relation of 'inherence' (which most clearly holds between modes and objects). He also includes special predicates for existence and identity; though he insists that

the former is a primitive which is not to be explicated as meaning *identical with something*. Although he does not mention the truth-functional connectives explicitly, he presumably intends his preferred language to include them: and, of course, as Lowe acknowledges, 'we also need *quantifiers* – at least a *particular* and a *universal* quantifier' (p. 60); he says that he 'favour[s] so-called *restricted* quantifiers for most purposes' (p.60).

Finally, Lowe adds some further forms of atomic formula construction, in order to make room for what he calls *categorial predication*. He says:

The system of formal logic whose language I have been constructing is meant to be one which respects and reflects certain fundamental categorial distinctions of an ontological nature. But now we have to consider how we can speak explicitly *of such categorial distinctions, by extending the expressive power of our formalized language. So far, these categorial distinctions have been only* implicit *in the language, being embodied in our choice of* symbol *types and our ways of representing predication and inherence. A* categorial *statement, however, will be one which explicitly assigns some entity to a specific ontological category…. (p. 63)*

To achieve the requisite explicitness, Lowe simply adds new one-place syncategorematic predicates to the language which can be combined only with terms of the corresponding type to yield (true) sentences assigning entities to their categories.

The upshot of all of this, however, so far as I can tell, is to yield a system which can be rendered in a standard, first-order Quinean regimentation (though one which is given a Meinongian interpretation on which quantification is not thought of as ontologically committing). Quine held that a predicate 'divides its reference' over the various things in its extension: the word 'white', for example, when it occurs in predicate position, simply applies to each of the white things. Accordingly, the truth of a sentence can be explained, on his view, without acknowledging the existence of anything other than the objects to which its singular terms apply, and over which its (first-order) variables range. Thus, the Quinean regimenter can make sense of Lowe's standard predications and claims of inherence, by employing two-place relational expressions for each of these formal notions, and treating what might otherwise be regarded as the predicate (e.g. whiteness) as a relatum instead. But she can equally account for Lowe's categorial predications: for these are just like any other (genuine) predications on her view; their truth requires the existence of the things to which the predicates occurring in them apply, but not of any items predicated. What is more, the Quinean can also get a verdict that Lowe wants, but is not entitled to: Lowe says that 'a statement such as 'Whiteness is a primary substance'… is just *not well formed* in [his] system and hence *necessarily false*' (p.64). But of course, only well-formed sentences can be assigned truth values at all, whether contingently or necessarily. A Quinean regimentation would involve the much simpler standard syntax, on which there is only one formation rule for atomic formulae (combine *n* terms together with an *n*-place predicate to get a formula); statements such as the problematic one above would then count as well-formed, though (presumably) false – indeed, assuming certain additional semantic constraints, necessarily so.

None of this is to say that Lowe's views in ontology are mistaken; but it does suggest that the proposed logical reforms are less radical than it seems. Unless the formalism can be developed further (e.g. through more explicit consideration of relational predication and quantification), and in a way that clearly diverges from standard practice, it seems unlikely that advocates of the Fregean orthodoxy will be moved to adopt it. Sadly, it now falls to Lowe's followers to convince them.