Chapter 16
Ontology and Methodology in Analytic Philosophy

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16.1 Introduction

From a certain perspective it is remarkable that a tradition which regards Rudolf Carnap, Ludwig Wittgenstein, and John Austin as central figures in its recent history, currently devotes so much of its intellectual energy to basic metaphysical questions. Given the prominence of anti-metaphysical doctrines and arguments, espoused by positivists, pragmatists and ordinary language philosophers, the fact that ontology is flourishing among analytic philosophers in the early twenty first century deserves some explanation.[1] Ontology is a slippery business which is usually characterized via the claim that it is the inquiry into the nature of existence or the attempt to determine the kinds of things that exist. It sometimes seem to lack enough real content to be considered a meaningful enterprise, but clearly many familiar areas of philosophical inquiry involve ontological questions and demand arguments on behalf of, or against ontological theses. With the revitalization of analytic metaphysics in recent decades there has been a gradual convergence towards a cluster related ontological problems and methodological assumptions. The purpose of this essay is to introduce some highlights of recent ontology in their proper conceptual and historical context.

In their *Oxford Handbook of Metaphysics*, Michael Loux and Dean Zimmerman describe the generational shift which coincided with the emergence of modern analytic ontology as follows:

> By the mid-1980s a new generation of philosophers was coming to the study of metaphysics. These philosophers had no first-hand knowledge of the positivist or ordinary language attacks on metaphysics. For them, the attacks were quaint episodes from a distant past rather

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[1]The development of analytic ontology over the past three decades deserves extended discussion. There are a number of introductory anthologies which cast a broad net, including Barry Smith and Hans Burkhardt (1991) and Roberto Poli, and Peter Simons (1996). Two examples of recent work in analytic ontology which provide a solid introduction to the contemporary debates are Trenton Merricks (2007) and Theodore Sider, (2003). Dale Jacquette makes a case for the importance of logic in ontology in his (2002).

than serious theoretical challenges. Accordingly, they were not in the least apologetic about doing metaphysics, nor were they content with a piecemeal approach to metaphysics. Unlike their predecessors they were willing to attempt the construction of comprehensive ontological theories, building upon the work of such trailblazers in the rehabilitation of systematic metaphysics as Roderick Chisholm, David Armstrong, and David Lewis. (2003, p. 4)

One of the goals of this essay is to explain why philosophers, beginning in the 1970s and 1980s rejected the standard theoretical challenges to ontology and how the contemporary ontological landscape took shape. Very briefly, the story I will tell runs as follows: Ontology reemerges in a very robust and unapologetic manner thanks to a confluence of developments in the 1950s and 1960s. These include Quine's criticism of the analytic-synthetic distinction, Strawson's presentation of the metaphysical assumptions underlying our ordinary ways of talking and thinking, and Barcan Marcus' defense of modal reasoning. By the early 1970s, Saul Kripke's account of necessary aposteriori truth and David Lewis' analysis of counterfactuals had the important effect of encouraging philosophers to entertain the possibility that metaphysical theses should be evaluated independently of theses in the philosophy of language or epistemology.

It is relatively uncontroversial to point out that Kripke's arguments in his 1970 lectures, later published as *Naming and Necessity* were especially important in the revival of metaphysics. Developments in late twentieth and the early twenty-first century metaphysics, including David Lewis' defense of Humean supervenience, the explosion of work in the philosophy of mind, the deep and ongoing discussions of modality, and the emergence of a two-dimensionalist approach to language and metaphysics can all be read as either reactions to, or developments of Kripke's insights in those lectures.[2]

In very general terms, Kripke's work allows for a principled distinction between metaphysics and epistemology; a distinction between the study of the world itself and the study of how we come to know the world. Kripke's arguments undermine a broadly Kantian approach to philosophy according to which, we are unable to know the world apart from our experiential or epistemic apparatus. Thus, according to this Kantian perspective, we are unable to begin a metaphysical investigation without first determining the scope and limits of our cognitive or experiential access to the world.

In the twentieth century it was common for philosophers to regard language as playing this mediating role between minds and worlds. Such philosophers often dismissed ontological investigation as naively ignoring the mediated character of understanding and experience. As we shall see, this anti-metaphysical posture not so easy to sustain in our time and, in fact, it was not universally shared by pre-Kripkean analytic philosophers.

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[2]Scott Soames (2005) has argued persuasively for the centrality of Kripke's work in the revival of metaphysics.

The early days of analytic philosophy were relatively friendly to ontology. Bertrand Russell and (the early) Ludwig Wittgenstein espoused versions of logical atomism which can be understood as attempts to provide a fully general account of the ontological characteristics of reality. Furthermore, one of the main features of Gottlob Frege's philosophy is his view that concepts and objects should be regarded as basic ontological categories. Among the other important facets of the ontological discussion in early analytic philosophy were Frank Ramsey's criticism of the distinction between universals and particulars and his analysis of the ontological commitments of scientific theories. (Ramsey 1931) Even in the Vienna Circle, in the midst of what we might see as the least friendly environment for ontology, discussions of ontological questions were lively and productive. Gustav Bergmann's effort, beginning in the 1940s to create a realistic ontology was informed by developments in the Vienna Circle and is perhaps the most constructive product of those discussions for ontology.[3]

The most important methodological principles guiding contemporary analytic ontology are continuous with the concerns and approach we find in these early figures. A broadly realist approach to ontological questions, a preference for parsimony, and an emphasis on common sense methodological conservatism are foremost among the features which contemporary philosophers share with those at the origins of the tradition. Thus, the ontological and methodological commitments of these early figures are worth reviewing in any attempt to understand the development of contemporary metaphysics.[4]

While the roots of contemporary ontological investigation run deep in the history of analytic philosophy, the tradition's focus on language and logic has sometimes proved detrimental to progress with respect to ontological questions. Historically, an increased focus on the philosophy of language in the middle of the century was accompanied by a general distrust of ontology. So, while Frege, Russell and the early Wittgenstein made maximally general claims concerning the categorial structure of reality, many mid-century philosophers urged their readers to abandon ontological inquiry entirely.

In his later work Wittgenstein, John Austin and their followers rejected ontological disagreements as at best misguided and at worst an utterly meaningless or misleading enterprise. In recent years, criticisms of ontology have continued along roughly similar lines. While it was popular in the 1980s and 1990s to speak, in somber fin de siècle terms, of the death of philosophy, recent decades have actually seen an increasing level of activity and energy focused on the most basic questions in metaphysics, moral philosophy, philosophy of logic and the philosophy of mind.

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[3]While this essay will not discuss Bergmann's ideas, his struggle to reconcile positivism and ontology is a fascinating example of the more general problem, in analytic ontology of reconciling common sense presuppositions with formal and scientific insights. Herbert Hochberg provides a very informative discussion of Bergmann's views in his (1994).

[4]Two books which examine the ontological views of early analytic philosophers are Jan Dejnozka (1996) and Gideon Makin (2001)

Ontology has figured prominently in this return to fundamental questions in philosophy. Critics of metaphysics like Hilary Putnam and Richard Rorty called, in the 1980s and 1990s, for a broadly pragmatic approach to philosophy and an end to analytic philosophy.[5] While Putnam and Rorty were advocating some form of post-metaphysical thought, metaphysicians had been engaged in interesting and fruitful work. Philosophers in the 1980s and 1990s have been busily sharpening our understanding of basic notions related to modality, mind, causality, individuation, free will, and the like. In fact, it is probably fair to say that many of the richest, clearest and most detailed studies of these topics have been written in recent decades.

Relatively recently, philosophers have begun to examine some of the methodological assumptions underlying work in analytic metaphysics and epistemology. There has been an increasingly self-conscious reflection on the assumptions and techniques which govern philosophical work. In addition to a range of articles and books on conceivability, possibility and intuition, philosophers have begun to develop important analyses of the relationship between purely conceptual investigation and formal methods drawn from logic and mathematics.[6]

In recent analytic philosophy, ontological investigations are conditioned by at least three competing principles. In imprecise terms, the most important of these can be characterized as a conservative approach to philosophical methodology which, as touched on above, aims to preserve as many common sense theses and explanations as possible. The second principle is far crisper, namely the rejection of epistemic criticisms of metaphysics and the adoption of a realistic approach to basic philosophical questions. A third principle involves commitment to the view that attention to the structure of language or logic should inform ontological investigations. Clearly, these principles are not adhered to universally. In fact, depending on how strictly one interprets them, these principles, they may even be mutually incompatible. In any event, it is a relatively easy to find prominent examples of philosophers who reject one or more of them. In this essay these principles are offered as a way of introducing the contemporary state of ontology in very general terms and as a way of connecting contemporary developments with some of the guiding themes in early analytic ontology.

The complicated relationship between ontology, logic and language is one of the topics which this essay will discuss from a variety of perspectives. As is well known, the ontological views of early analytic philosophers were closely connected

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[5]Most recently, in his *Ethics Without Ontology* Hilary Putnam argues that ontology has had disastrous consequences for philosophy of mathematics and moral philosophy. Like Carnap, he argues that moral and mathematical reasoning can be conducted apart from debates concerning the foundations of these endeavors, arguing in effect, that ontology factors out of our moral and mathematical reasoning. Given his earlier criticisms of logical positivism, it is striking that Putnam comes so close to the anti-ontological arguments which we find in the *Aufbau* and in *Pseudoproblems of Philosophy*.

[6]By way of examples, the see the papers collected in Szabo Gendler and Hawthorne (2002) and Vincent Hendricks' *Mainstream and Formal Epistemology*.

to the development of modern logic. Theses in the philosophy of logic and language continued to shape attitudes towards ontology well into the second half of the twentieth century. However, in the work of the later Wittgenstein and the ordinary language philosophers, reflection on language and logic were deployed as part of a critical posture towards traditional ontology. In the mid-twentieth century, many of the most prominent criticisms of ontology and arguments against metaphysics were motivated by claims about the nature of language and the relationship between metaphysical theses and our epistemic capacities.

For Russell and Frege, logic and ontology were intimately entangled and it is not always a simple matter to determine which of the two has priority in their philosophical work. It is often difficult to separate the strands of their arguments into distinctively formal and distinctively metaphysical types. In fact, many of the most important interpretive questions in the study of Frege's work involve the problem of determining the relative importance he attached to ontological and logico-linguistic considerations in philosophical reflection. In Russell's early work, abstract entities are invoked in order to support the possibility of logic, but as we shall see below logical techniques like the theory of descriptions and methods like logical construction also serve to inform us with respect to our ontological commitments. While there are a range of difficult interpretive questions which can be raised here, there can be little doubt that ontology is inextricably related to logic in the thought of these early figures.

In a somewhat different vein, G.E. Moore's deeply influential account of common sense in philosophical reasoning, gave a central role to the ontological claims that are part of our ordinary experience of the world. Moore encourages us to be highly suspicious of any attempt to abandon common sense theses for what he saw as exotic theoretical reasons. Following Moore, a conservative emphasis on common sense in philosophical methodology has been one of the near constant features of ontological investigation in the analytic tradition. As we shall see below, the methodological conservatism that Moore's work inspires has played an important role in the development of contemporary ontology.[7]

Ontological questions have played a central role in recent analytic metaphysics. Among the themes which explicitly engage with the kinds of concerns which ontologists share are the debates between perdurantist and endurantist views, debates over the existence of specific aspects of reality or specific kinds, such as numbers, ordinary objects, minds etc. Investigations into the character of vague predicates, the reality of natural kinds, the nature of causal powers and dispositions are also of direct importance for the development of a meaningful ontology. In contrast with the kind of ontological work in mainstream analytic metaphysics (the kind of work which we might associate with philosophers like Kit Fine, Ted Sider, Trenton Merricks, Amie Thomasson, Clifford Elder and others), there is also a variety of stand-alone efforts to develop complete ontological frameworks. Prominent among

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[7]Scott Soames makes a compelling case for the centrality of Moore's thought in the development of analytic philosophy in the twentieth century in his (2005)

these is E.J. Lowe's four category ontology which will be discussed briefly below. In a chapter-length contribution, it is very difficult to provide even a brief treatment of the many important views and proposals which ontologists have generated in recent decades. The purpose of this chapter is not to provide an encyclopedic account of the history of ontology in the analytic tradition, but rather to provide a sketch of some of the defining figures and approaches to ontological questions.

16.2 Ontology and Logic for Frege

Standard accounts of the history of analytic philosophy see the tradition as starting with the work of Gottlob Frege, Bertrand Russell and G.E. Moore. In the present context, Frege is striking insofar as his ontological views play such a central role in his philosophical system. Frege understood concepts and objects to constitute onto-logically fundamental categories. His ontology is coordinated directly with some of the key features of the logic that he presents in *Begriffsschrift*. In that book, Frege not only articulates the central advance that defined modern logic – the logic of polyadic quantification – but also prepares the way for the ontological claims articu-lated in later essays like 'Function and Object' and 'Concept and Object'. Moreover, *Begriffsschrift* contains the first statement of Frege's description of the misleading effect of ordinary language in philosophical reflection. Frege's criticism of ordi-nary language is well-known. However, understanding his view of the proper role played in philosophical reflection by language involves a high level of interpretive complexity. This circumstance has led to divergent readings of Frege's philosophy.

While some important points in Frege's philosophy of language continue to be debated, there is no interpretive doubt concerning his view of the inadequacy of natural language. In this respect, his complaints have set the tone for many philoso-phers who favored formal philosophical reasoning in the twentieth century. Bertrand Russell, for example, exemplified the Fregean insistence that ordinary language is a source of error for philosophers. In sharp contrast with the later Wittgenstein, Austin and others, Russell argued that 'an obstinate addiction to ordinary language' is 'one of the main obstacles to progress in philosophy'. (Schlipp 1944, p. 634) While the view that ordinary language is an inadequate guide to philosophical investigation has been an ongoing feature of more formally-oriented thinkers, it has faced opposition from philosophers who argue that we must rely on common sense, ordinary lan-guage or more recently on our intuitions. This tension between common sense and formal or scientific reasoning continues to be an ongoing feature of philosophical practice.

Fregean and Russellian criticisms of ordinary language were due, at least in part, to the perception that formal techniques provide insights which would otherwise be difficult to achieve. Specifically, Frege and Russell were impressed by the insight that comes via a clear view of the interplay of quantifiers, variables and predicates. For both Frege and Russell, the surface features of ordinary language distract us from a clear view of logical and ontological matters. Rather than looking to the sur-face syntax of natural languages, Frege turns instead to the mathematical notion of

the function as a starting point in his project to reform philosophy. For Frege, refashioning logic in terms of quantifiers, variables, names, and functions allows us to avoid the philosophically misleading features of natural language. In Frege's view, if one did not have access to the new logic and relied solely on ordinary language to grasp the implications of complex expressions involving embedded generality, one would be at a profound disadvantage.

Throughout his career, Frege believed that the 'logical imperfections' in 'the language of life' stand in the way of philosophical investigation. (1979, p. 253) Frege believed that his new logic could liberate us from the thrall of language. He writes, for instance, '[i]f it is a task of philosophy to break the power of words over the human mind, by uncovering illusions that through the use of language often almost unavoidably arise concerning the relations of concepts, by freeing thought from the taint of ordinary linguistic means of expression , then my Begriffsschrift, [...] can become a useful tool for philosophers.' (1967, pp. vi–vii) According to Frege, the reason that language taints our thought is that its grammar does not reflect the underlying structure of our judgments. Attachment to the superficial grammatical features of natural language blocks philosophers from achieving a clear view of the structure of valid reasoning.

This view of ordinary language is not simply a mark of his early enthusiasm for logic. In Frege's posthumous writings we find this criticism of grammar repeated in uncompromising terms. In his *Logic*, he writes, for instance: 'We shall have no truck with the expressions 'subject' and 'predicate' of which logicians are so fond, especially since they not only make it more difficult for us to recognize the same as the same, but also conceal distinctions that are there. Instead of following grammar blindly, the logician ought to see his task as that of freeing us from the fetters of language.' (1979, p. 143) As Frege saw it, the central step in the creation of a proper logic (which on his view is one which allows for multiple, embedded expressions of generality) involved drawing our attention away from grammatical subjects and predicates and towards arguments and functions (1967, p. 7). This step is emphasized throughout Frege's entire body of work. It was pivotal to the development of modern logic and it shapes his view of ontology.

In his 1925 paper 'Universals' Frank Ramsey extended the spirit of Frege's attitude towards grammar and ordinary language by showing that the grammatical distinction between subject and predicate does not, by itself, support the distinction between universals and particulars (1931). This claim is somewhat at odds with the Fregean distinction between objects and concepts described below, but it is consonant with Frege's criticism of the role of grammatical distinctions in ontological investigation.

Ontology has, as one of its major topics, the study of identity and difference. From Frege's perspective, ordinary language is an obstacle to our capacity to form true judgments concerning identity and difference and one important task of the logician is to remove these obstacles. Frege was justified in thinking that his logic offers a more accurate representation of distinctions and identities than analyses based solely on the grammatical distinction between subject and predicate permit. It is well known that if the words 'all' or 'some' appear in the predicate

place in a traditional syllogistic logic, then invalid inferences can be shown to follow straightforwardly. Syllogistic reasoning provides no insight into the logical structure of multiply embedded statements of generality and is often positively misleading. It can be shown easily that by introducing polyadic quantification in the *Begriffsschrift*, Frege was able to express a range of judgments which had eluded previous attempts to formalize logic.[8]

The formal features of *Begriffsschrift* itself are directly related to one of the core philosophical insights in Frege's work, namely his application of the mathematical idea of the function. Specifically, the mathematical concept of the function inspires Frege's characterization of the structure of judgment. Ordinarily, functions can be understood as taking arguments and giving values, some function, for example $f(x) = 2x$, gives the value 4 when it takes 2 as its argument. The variable 'x' in this context plays the role of an empty slot or placeholder, which, in this context is filled by numbers. On Frege's view concepts play a similar role.

Concepts, by themselves, are incomplete expressions or, as he sometimes puts it, they are 'unsaturated'. This incompleteness is filled by singular terms. Singular terms name objects and when singular terms are placed in the gaps of an incomplete expression, (in the same way that a number can serve as the argument for a function) then concepts and singular terms combine to give a truth value. For Frege, truth values are special kinds of objects: 'The true' and 'the false' are singular terms which name those objects. So, continuing the analogy with functions in mathematics, concepts have as their codomain, two objects; the true and the false. Their domain is (with some important qualifications) the set consisting of every object.

The division of everything into two ontologically fundamental categories; concepts and objects, is motivated by Frege's view that no deeper analysis of these notions is possible and that these two categories suffice to generate the logic presented in *Begriffsschrift*.

In his 1892 paper 'Concept and Object' Frege recognizes a counterintuitive consequence of his ontological view. If we claim, for instance that the concept 'x is a horse' is a concept, then given Frege's view of concepts and objects, we have actually said something false. This is because the claim in question treats the concept term as a singular term. On Frege's view, only objects can be referred to using singular terms. Since the sentence 'the concept 'x is a horse' is a concept' is false, it surely seems as though Frege is driven to accept the paradoxical judgment that 'the concept 'x is a horse' is an object'. While a great deal of interpretive effort has been devoted to understanding this problem, it is important to note that Frege regards this situation as the result of the inadequacy of ordinary language and does not waiver from his ontological thesis.

Frege's ontological commitments, I would argue, are such that he is willing to accept that the sentence 'the concept *horse* is a concept' is false! However, the apparent strangeness here is not as serious as some have worried. Anthony Kenny alerts

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[8]For a more expansive and detailed account of the advantages of Frege's logic over syllogistic logic, see Anthony Kenny (1995, 12–26).

us to a footnote in 'Concept and Object' where Frege points to a way of resolving the apparently paradoxical implication of his account (1995, p. 124). Frege points out that there a range of cases in natural language in which we make strange sounding statements as a result of the awkwardness of ordinary language. He describes, for example how, by explicitly calling some predicate a predicate, we deprive it of that property. In modern terms we would say that Frege is pointing out that ordinary language is subject to possible use/mention confusions of the kind which we try to avoid via devices like quotation marks or italicization.

Kenny suggests that the expression "'the concept. . ." is really meant to serve the same purpose for our talk of "concepts as is served by quotation marks in relation to predicates.' (1995, p. 125) Without examining the details of this resolution, it is enough here to note that on Frege's view, any fault which might exist, lies with language rather than with his ontological thesis.

Note also that in the employment of devices like quotation marks we are attempting to make our language conform to our intentions with respect to the ontological state of affairs under consideration. If one writes, for instance, "the mailbox' contains ten letters' the quotation marks do not indicate that there are ten pieces of mail in the physical mailbox, but rather that the string of two words in the quotation marks contains ten letters. If one intends to talk about relatively abstract things like letters of the alphabet rather than letters in envelopes, one can easily indicate this intention via artificial typographic devices. It is more difficult (but not impossible) to make the same kinds of ontological distinctions in unaided spoken language. The introduction of the typographical conventions discussed here assumes that there is a level of insight into ontological facts which leads us to supplement natural language with various kinds of formalism. I would argue that Frege assumed that we do have such insight.

Formal devices, from quotation marks to quantifiers are employed in order to expand the expressive power of our language. Specifically, the function of these devices is to capture genuine distinctions and identity claims which language would fail to encompass in their absence. Frege's view of the significance of these extensions is clear.[9] In the *Begriffsschrift*, for example, he draws an analogy between his logical notation and the microscope which, while lacking the versatility of our eyes, proves useful for matters where scientific precision is demanded (1967, p. 6). Frege sees his logical formalism as a supplement to natural language which permits philosophers a more precise view of the nature of judgment and which is more faithful to the ontological facts than the superficial grammar of ordinary language.

As I have described them so far, Frege's views on logic and ontology are intertwined with his criticisms of ordinary language. By emphasizing Frege's ontological commitments, the present discussion is somewhat at odds with at least one

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[9]He writes that "the mere invention of this ideography has, it seems to me, advanced logic" (1967, 7)

prominent interpretation of Frege's philosophy.[10] Frege's foremost contemporary interpreter, Michael Dummett has argued that the central innovation in Frege's philosophy is his conversion of questions about ontology into questions about the nature of meaning. According to Dummett, traditional ontological questions become 'part of the theory of meaning as practised by Frege' (1981, p. 671). Dummett not only regards this as one of the most important features of Frege's philosophy by also as a general principle which helps form the distinctive methodology of the ensuing analytic tradition. For Dummett and like-minded readers, the lingua-centrism of much of analytic philosophy is due to Frege's own commitment to transforming philosophy into the philosophy of language.

The present essay is not the appropriate venue to tackle Dummett's claim about the origins or the distinguishing features of analytic philosophy in detail. Instead, it suffices to note that alternative readings of the relative fundamentality of ontology and language can be justified. Clearly, Frege's ontological theses cannot be separated completely from his views on the nature of language and human epistemic capacities. However, the interpretive challenge is to understand precisely how he believes ontology and language are related. According to Dummett, traditional ontological questions are completely subsumed within Frege's larger theory of meaning. There is some evidence to the contrary which I will discuss very briefly.

Frege recognizes that he cannot provide a purely formal account of, for example, the distinction between concept and object; that he must move beyond the formal language of *Begriffsschrift* and must appeal to hints or elucidations that depend on his readers' grasp of the roles of names and predicates in ordinary language.[11] However, readers have disagreed on the manner in which he regarded the argument for accepting his ontological taxonomy of concepts and objects as dependent on an understanding of language.

As Joan Weiner argues and as we saw in our discussion of 'Concept and Object' above, Frege's ontological claims did not arise via a slavish adherence to the surface properties of language. As Weiner notes, he was alert to sentences in ordinary language like 'The horse is a four-legged animal' where the grammatical structure indicates a simple predication but where Frege argues that it should not be understood as such (1990, 249 footnote). As we saw above, Frege's own account of, for example, the difficulties involved with talking about 'the concept *horse*' support interpreting him as seeing ontological commitments as more fundamental than theses in the philosophy of language. While it runs counter to the mainstream reading of Frege, I believe that it is consistent with the textual evidence to see him as placing primary importance on ontological rather than linguistic theses. At the very

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[10] Although Gideon Makin (2000) makes a strong case for the seeing both Frege and Russell's work as fundamentally oriented towards metaphysical questions rather than attempting to replace metaphysics with philosophy of language.

[11] See Anthony Kenny's discussion of the 'unbridgeable gulf between concepts and objects' and Frege's reliance on common sense acquaintance with the distinction between predicates and names in his (1995, 121). Joan Weiner has an extended reading of the distinction between definition and elucidation for Frege in her (1990), especially pp. 99–104 and 227–280.

least, it seems clear that Frege believe that ontological considerations should guide our understanding of grammatical categories and logical formalism rather than vice versa. For example, as we saw above, Frege regarded 'the concept *horse*' problem as a product of the inadequacy of ordinary language rather than as a symptom of a problem with his ontology.

As Claire Oritz Hill has noted (1997) Frege's goal of creating a language free from the imprecision and systematically misleading features of ordinary language, was forced to face the ontological challenge of accounting for identity. Ortiz Hill addresses Frege's views on the nature of identity with special focus on the ambiguity which Frege found in identity statements. She quotes the following striking remark in § 8 of *Begriffsschrift* 'thus along with the introduction of the symbol for equality of content, all symbols are necessarily given a double meaning: the same symbols stand now for their own content, now for themselves'. (Quoted in 1997, p. 5) Concerns over the nature of the equals sign in Section 16.8 of the *Begriffsschrift* involve ontological considerations and are not merely a matter of the nature of signs. Since Frege's reflection on the nature of identity claims motivates his pivotal distinction between the sense and the reference of a sentence, we can understand the problem of identity as motivating, at least in part, his account of how the content of a sentence is determined. In this sense, pace Dummett, one can read Frege's ontological concerns as motivating his interest in philosophy of language.

16.3 Logical Construction in Russell, Ramsey and Carnap

After Frege, one of the most significant points of origin for twentieth century analytic philosophy is Russell and Moore's reaction against what they saw as the speculative excesses of British Idealism. This reaction is often seen as a turn towards Humean empiricism or positivism.[12] However, reading Russell and Moore as anti-metaphysical and as narrowly empiricist is a profoundly mistaken approach to their work. For the purposes of this essay, the most significant problem which results from an empiricist reading of Russell and Moore is that it distracts attention from the importance of ontological considerations on their early thought. As we can see from the careful studies of Russell's early philosophy provided by Peter Hylton (1990) and others, it makes more sense to read the anti-idealist turn in Russell and Moore as the developments of a conservative methodological stance with respect to common sense judgments and ordinary experience.

Russell and Moore famously rejected the views of their neo-Hegelian teachers. For Russell, this turn only takes place once he had already completed work on the

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[12]David Pears' *Bertrand Russell and the British Tradition in Philosophy* (1972) is a prominent example of the empiricist reading of Russell's turn away from British Idealism. Peter Hylton's *Russell, Idealism and the Emergence of Analytic Philosophy* (1990) presents a more accurate and detailed analysis of the early philosophy of Russell and Moore which notes the centrality of abstract entities in Russell's thought. In his early work, Russell often had recourse to abstract entities in ways which do not comport with the kind of empiricism that Pear and others have in mind.

first part of his plan to produce an encyclopedic synthesis of scientific and political thinking in the spirit of Hegel's philosophy (Russell 1897). Both Russell and Moore were driven to abandon Idealism because of their inability to reconcile it with a common sense attitude towards the reality of objects, the truthfulness of propositions and the objectivity of judgment. While Russell's conversion to Moore's common sense realism was pivotal to his philosophical development, his encounter with modern logic in the work of Frege and Giuseppe Peano provides the technical backbone and content for many of the most important developments which followed.

The influence of the newly developed formalism on Russell's ontological views is well known. Among Russell's seminal achievements is his theory of descriptions. Perhaps the most important feature of the theory of descriptions was its implications for ontological reasoning. Russell describes how we can formalize sentences in such a way as to permit us to see more clearly what the ontological commitments of our assertions are. So, for example, when one hears the assertion that the present King of France is bald, one might be concerned about the ontological status of the monarch under consideration. At the moment, France is free of kings. However, one might worry that denying or assenting to claims about the King's baldness commits one to an ontology which includes the non-existent King of France.

Alexius Meinong had understood judgments concerning non-existent objects as committing us to a realm of objects, including impossible objects, which do not exist in the ordinary sense. Whether an object exists is a question which is distinguishable, according to Meinong, from questions concerning its properties. The fact that an object does not exist, on this view, is not a barrier to our making true claims concerning that object. For Meinong, there is a variety of properties that a non-existent object can possess. Consequently, he regards part of the task of ontology to involve cataloguing the characteristics of nonexistent objects as they relate to our reasoning and discourse. Meinong's ontology is extremely rich and generates a range of interesting and fertile questions.[13] However, Russell's theory of descriptions has had an important role insofar as it allows a principled way of blocking the move from judgments about objects like the present King of France to claims about their exotic ontological status. Russell's strategy is simply to unpack the implicit embedded quantification relation in the sentence:

$$(\exists x) (Kx . ((\forall y) ((Ky \rightarrow (x = y)) . Bx)$$

As such, it becomes clear that, whether the King is said to be bald or not bald that the sentence is straightforwardly false because it is making a false existence claim. This is a simple, yet critically important step in our thinking about ontology. The theory of descriptions shows how our sentences cannot always be taken at their face value and do not automatically license ontological claims. Instead, logic allows us (at the very least) an alternative analysis of our ontological commitments, such that we do

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[13] See John Findlay's (1963) for a very clear presentation of some of the subtleties of Meinong's ontology.

not mistakenly regard judgments concerning Kings of France and golden mountains as forcing us to make exotic ontological claims. There may be other reasons for accepting a Meinongian ontology, but Russell shows one very important reason for pausing before taking this step.

Like Frege, Russell saw logic as permitting us a way of getting clearer on the ontological presuppositions of our theories and in *Our Knowledge of the External World* he proposes the principle that 'Wherever possible, logical constructions are to be substituted for inferred entities.' (1914, p. 112) Russell's application of logic to ontological questions provided a new way of thinking about how we approach investigations in ontology. Russell exemplified a strategy in metaphysics whereby one could show that the apparent ontological commitments of some sentence or theory could be reconsidered while maintaining the relevant content of the theory or sentence. Again, like Frege, Russell is clarifying the fact that our ordinary ways of talking and thinking about existence need not compel us to follow the grammatical structure of our sentences blindly. Russell believed that with this technique we could legitimately hold that there are no unreal objects.[14]

Frank Ramsey would extend Russell's insight in two important ways. As mentioned above, Ramsey's criticism of the distinction between universal and particular, takes aim at the idea that the subject predicate structure of judgments in ordinary language compel us to adopt an ontology consisting of universals and particulars. In addition to his criticism of universals, Ramsey applies the technical apparatus set forth by Russell in his account of the relationship between the structure of theories and their ontological commitments. Ramsey's account of theories had profound ramifications for philosophy in the late twentieth century and would shape the core ontological presuppositions of functionalist theories in philosophy of mind and philosophy of biology.

Ramsey asks us to consider some scientific theory T where T ranges over unobservable properties $A1 \ldots An$, observable properties $O1 \ldots On$ and individuals $a1 \ldots an$.

$$T(A1 \ldots An, O1 \ldots On)$$

The ascription of some unobservable property (say the property of being a neutron) to some individual or region of space-time a can be carried out via a sentence containing a higher-order existential quantifier along the following lines:

$$(\exists A1) \ldots (\exists An) [T(A1 \ldots An, O1 \ldots On) \text{ and } A1a)]$$

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[14]One could argue that because the theory of descriptions makes all claims about fictional or unreal objects false, it is thereby too restrictive and potentially self-undermining. This objection forces Russell to introduce the distinction between primary and secondary occurrence of a term which fails to denote. The secondary occurrence of the term 'Hamlet' in a sentence like 'Hamlet was a prince' allows us to claim that what is really intended here is the true sentence 'The play tells us that Hamlet was a prince'. Names for unreal or fictional objects can still play a role in true sentences in this sense.

This definition characterizes unobservable theoretical terms based solely on existential quantification, observables and the structure provided by the theory. If we understand our theory T as providing a unique ordering of properties, then reference for problematic terms; things like neutrons, beliefs, or market forces can be fixed via their relationships with one another and with the observable phenomena described by the relevant theory. The structure of relationships between the elements of a theory is presented by the theory T and to say that some individual has some property can be converted into a claim about relative placement within the structure described by T, in this case that a has the ith of A1... An.

Ramsey's work would have important ramifications later in the century, especially in the development of functionalism in the philosophy of mind and the philosophy of biology. David Lewis' application of Ramsey's technique to characterizations of functionally individuated concepts (1972) was widely understood to simplify the ontological status of claims made, for example, in folk psychological discourse. Treating such concepts as existentially bound variables specifies the role of theoretical terms via the system of relationships defined by the structure of the theory (1931, pp. 212–236). Given some psychological theory, the Ramsey sentence can serve as a way of providing definitions for mental terms that do not themselves include mental terms.

Metaphorically speaking, we can say that the Ramsey sentence serves to provide non-question begging definitions of mental terms by treating them as locations in the network provided by a theory. If our theory provides a unique ordering of properties, then reference for theoretical terms is fixed via their relationships with one another and with the observable phenomena described by the relevant theory. The structure of relationships between the elements of a theory is presented by the theory and to say that some individual has some property can be converted into a claim about relative placement within the structure described by the theory.

Ramsey elimination does not make any significant difference in the development of a scientific theory of mind since it assumes the existence of a theory that is both finished and true. It tells us nothing about how one might settle on a causal structure appropriate to particular explanations: It assumes an ordering without saying anything about what it is, or how one might decide between alternatives. Of course, Ramsey's account was not originally intended to answer such questions and so this defect does not matter for his purposes. His goal was to account for the meaningfulness of theoretical terms in an established theory. Lewis's use of Ramsey faces the well known threat that even if a part of the folk psychological theory turns out to be false, the statement of the theory in terms of a Ramsey sentence will also be false. Additionally, as Jaegwon Kim points out, even if the folk psychological theory has false non-mental consequences, the whole Ramsey sentence turns out false (1996, p. 108).

If we ignore these threats and settle *apriori* on a particular psychological taxonomy and decide that it is not subject to revision, then functionalism suffices as a theory of mind in the sense that it provides a way of resolving the meaningfulness of our talk of mind without encountering ontological worries. This was Lewis' strategy insofar as mental states are 'physical states of the brain, definable as occupants of

certain folk-psychological causal roles.' (1999, p. 5) By deferring to folk psychology, Lewis' position denies the relevance of progress in psychology to philosophy of mind. This might be a defensible position if it could be shown that we have access to folk psychology in a way which resists correction or refinement via inquiry. Elsewhere, I have argued that Lewis' use of Ramsey sentences is undermined by the assumption that it is possible to improve our understanding of psychological terms. (Symons, forthcoming)

The approach to ontology which is pioneered by Russell in 'On Denoting' and which we find developed in Ramsey's work involves embracing the idea of logical construction mentioned above. The idea of a network of relations defining a theory and the possibility that these relations can be thought of in lieu of inferred entities, had profound effects in the philosophy of mind and the philosophy of biology in the late twentieth century. Functionalism can be seen, in large part, as a development of the ontological insights which we find in early analytic philosophy.

Most importantly, the ability to characterize complex and interdependent systems of relations via multiply embedded statements of generality, changed the manner in which terms behave in our theories and led to a fundamental rethinking of the place of mental and other nonphysical terms in our ontology. The other major effect of the Russellian approach to logical constructions was the development of a profoundly anti-ontological line of thinking in Rudolf Carnap's work. While this is not the place to provide detailed account of Carnap's philosophy, his anti-metaphysical position has had a profound influence in twentieth century thought. Carnap's major works are less well known to philosophers than some of his more provocative and readable articles. As Philipp Frank notes, the paper which brought Carnap most attention and have the widest consequences was 'The elimination of metaphysics through logical analysis of language' Frank describes the effect of that paper as follows:

> People who have always had an aversion against metaphysics felt an almost miraculous comfort by having their aversion justified by 'logic'. On the other hand people for whom metaphysics had been that the peak of human intellectual achievement have regarded Carnap's paper as a flagrant attack upon all 'spiritual values' from the angle of a pedantic logic. Logical positivism got the reputation of being cynical skepticism, and simultaneously, intolerant dogmatism. (1963, p. 159)

Analytic philosophy is occasionally criticized for being narrowly focused on language, logic or conceptual analysis to the detriment of ontological or metaphysical investigation. More commonly, analytic philosophy has been accused of an excessively deferential attitude to mathematics and the natural sciences.[15] This line of criticism obscures the historical reality and contemporary diversity of the analytic tradition. However, it is true that analytic philosophers have generated some of the severest criticisms of traditional metaphysics. Many early analytic philosophers, in particular those who were part of or influenced by the Vienna Circle, tended to

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[15]One of the most explicit general criticisms of analytic philosophy as a movement is Stanley Rosen (1985). While Rosen's discussion of the history of analytic philosophy is not reliable, his criticisms exemplify widely held complaints against mainstream philosophical practice.

identify metaphysics with obscurantist or reactionary cultural tendencies.[16] By contrast with traditional metaphysics, philosophers like Carnap, Neurath, and Schlick were motivated by a modernist ideal of a reformed philosophical practice which was guided by the kinds of intellectual virtues which they believed were exemplified by the natural sciences. Science offered a more appealing and progressive example of intellectual activity than the kinds of traditional philosophy with which they were familiar.[17] The sciences, they believed, offer a model of clarity, openness and internationalism which stood in stark contrast to, for example, the ontological rumblings that members of the Vienna circle heard coming from Heidegger's hut.[18] Heideggerian forms of ontology, were anathema to the refugees from fascism who helped to shape philosophy in the second half of the twentieth century.[19]

Historical, social and political factors partly explain some of the strongly anti-metaphysical rhetoric which we read in the Vienna circle. Nevertheless, in spite of this apparent hostility to metaphysics, ontological questions have always been central to the enterprise of analytic philosophy. For example, Wittgenstein's *Tractatus* was held in the highest esteem by the members of the Vienna Circle. Few books tackle ontological questions as directly as the *Tractatus*. Today, metaphysical debates are at the heart of philosophy and these debates are guided, perhaps more so than ever in the history of philosophy, by basic ontological questions.

In the pages that follow I will introduce briefly some of the general background to Carnap's criticism of metaphysics. Specifically, it is important to grasp his view of the role of logical construction in philosophy. Carnap's approach to ontology was influenced, to a very great extent by Russell's theory of descriptions and his account of relations. In his *Logical Structure of the World,* Carnap describes his project as '[a]n attempt to apply the theory of relations to the analysis of reality' (1967, p. 7) and asserts that his own work is a radicalization of the major

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[16]Richard von Mises (1951) provides an introduction to positivism which emphasizes its cultural implications and contrasts prior philosophical orientations with the liberal model of inquiry and social progress to which the positivists aspired.

[17]In his criticism of analytic philosophy Avrum Stroll emphasizes what he sees as the scientistic mainstream of analytic philosophy. He contrasts the vices of scientism with the virtues of the those philosophers who would draw a sharp distinction between science and philosophy (in his view this was Wittgenstein and Austin) One problem with this view is, among other things, the centrality of the distinction between science and philosophy in the work of the Vienna circle and specifically in Carnap's distinction between scientific and non-scientific propositions. Stroll, like Rosen and other critics often seem more concerned with philosophical style or tone, than with any specific philosophical point.

[18]See Michael Friedman's *A Parting of the Ways* (2000) for a detailed discussion of the political and cultural background to Carnap's criticism of Heidegger. The resolute opposition to metaphysics is more easily understood in historical context.

[19]As Friedman (2000, 11–13) and others have noted, Carnap's well known criticism of Heidegger's account of nothingness; Heidegger's notorious claim that "Nothing itself nothings [*Das Nichts selbst nichtet*]" is not a crude application of verificationism. Instead, Carnap sees Heidegger's usage as violating the logical form of the concept of nothing. Heidegger's vice is less a matter of metaphysics than of misology

direction of Russell's philosophy *(ibid,* 8). However, unlike Russell, Carnap's attitude towards metaphysics is profoundly critical. For Carnap, metaphysics tended to generate meaningless statements. In *The Logical Syntax of Language* (1934) he presents this critical attitude as follows: 'In our Vienna Circle' as well as in kindred groups... the conviction has grown and is steadily increasing, that metaphysics can make no claim to possessing a scientific character. That part of the work of philosophers which may be held to be scientific in its nature...consists of logical analysis' (1959, p. xiii). According to Carnap, philosophy was to be purged of metaphysical claims by means of the development of a logical syntax which was to serve as the logic of science: 'The aim of logical syntax is to provide a system of concepts, a language, by the help of which the results of logical analysis will be exactly formulable. *Philosophy is to be replaced by the logic of science.* That is to say, by the logical analysis of the concepts and sentences of the sciences, for *the logic of science is nothing other than the logical syntax of the language of science'* (1934, p. xiii). [italics in the original] In *The Logical Syntax of Language* (1934) he writes: 'By the logical syntax of a language we mean the formal theory of the linguistic forms of that language'.

Carnap distinguishes between sentences of two types: 'real' (empirical sentences) and 'auxiliary' (logico-analytic sentences). On Carnap's view, empirical inquiry provides the former while philosophy is restricted to the latter. Strictly speaking, according to Carnap, the logico-analytic sentences with which philosophers are concerned have no empirical content.

In his early work, Carnap arrives at his criticism of metaphysics via an attempt to understand the nature of philosophical disagreement. His earliest major philosophical work begins with an attempt to provide an analysis of disagreements over the nature of space and specifically, an analysis of distinct frameworks within which the term 'space' functions. This work diagnoses philosophical disagreements as resulting from confusions of physical, perceptual, and mathematical frameworks. These distinguishable frameworks each employ 'space' in legitimate, but incommensurable ways. This early analysis gives way to a more sweeping dismissal of all metaphysical claims in the years which followed.

Carnap's view of the nature of metaphysical disagreement is very straightforward. He argues repeatedly that metaphysical disagreements simply factor out of meaningful discourse altogether. Metaphysical considerations, on Carnap's view, are simply irrelevant to inquiry. Before describing this move in his work, it is instructive to consider the following biographical comment:

> in my talks with my various friends I had used different philosophical languages, adapting myself to their ways of thinking and speaking. With one friend, I might talk in a language that could be characterized as realistic or even materialistic... In a talk with another friend, I might adapt myself to his idealistic kind of language... With some I talked a language which might be labeled nominalistic... I was surprised to find that this variety in my way of speaking appeared to some objectionable and even inconsistent... When asked which philosophical position I myself held, I was unable to answer. I could only say that in general my way of thinking was closer to that of physicists and of those philosophers who are in contact with scientific work. (1963, pp. 17–18)

Carnap describes his way of thinking is 'neutral with respect to traditional philosophical problems'. This stance is formulated as the principle of tolerance in *The Logical Syntax of Language*.

In his *Pseudoproblems of Philosophy* Carnap imagines two geographers engaged in a disagreement concerning the reality of the external world. Given the task of discovering whether some mountain in Africa is only legendary or whether it really exists, the realist and the idealist geographer will some to the same positive or negative result. According to Carnap, in all empirical questions 'there is unanimity. Hence the choice of philosophical viewpoint has no influence upon the content of natural science... There is disagreement between the two scientists only when they no longer speak as geographers but as philosophers' (1967, p. 333).

In *The Logical Structure of the World* (1928) Carnap presents an attempt to show how the structure of the world is derivable from the moments or time points of experience by means of a single relation. The relation he employs is that of 'partly remembered similarity'. Carnap's thesis is that science deals only with the description of the structural properties of objects. Proof of the thesis depends on demonstrating the possibility of a formal constructional system containing all objects in principle. What Carnap meant by 'formal' in this context is given by the following definition: 'A theory, a rule, a definition, or the like is to be called *formal* when no reference is made in it either to the meaning of the symbols (for example, the words) or to the sense of the expressions (e.g. the sentences), but simply and solely to the kinds and order of the symbols from which the expressions are constructed' (1934, p. 1). The notion of construction which Carnap favored shares many important features in common with Russell's.

Carnap is often read as attempting to reduce all of reality to perceptual experience along the lines of a deductive model of reduction of the kind we find later in Ernst Nagel's work for example (1961). While Carnap uses the term 'reduction' throughout the *Aufbau*, the purpose of his reductions is not ontological in the sense of showing that the physical facts or facts about perception are exhaustive of all the facts. Instead, reducibility in Carnap should be understood as transformation. Thus, for example, one of his examples of the kind of transformations which he has in mind is the interdefinability of fractions and natural numbers. Statements about fractions can be transformed into statements about natural numbers without any loss of content thereby. Carnap's account of reductions as transformations or logical constructions is clearly stated:

> To reduce *a* to *b, c* or to *construct a* out of *b, c* means to produce a general rule that indicates for each individual case how a statement about *a* must be transformed in order to yield a statement about *b, c*. This rule of translation we call a construction rule or constructional definition. (1967, p. 6)

Scientific knowledge, according to Carnap, consists solely in the presentation of systems of relations. The structural features of the systems permit possible transformations of various kinds such that we gain insight into essential character of scientific inquiry and are no longer distracted by non relational features of scientific discourse.