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THE NATURE OF INTUITIONS AND THEIR ROLE IN
MATERIAL OBJECT METAPHYSICS

BY

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ABSTRACT

I argue for three central theses: ‘intuition’ is ambiguous, in material object metaphysics ‘intuition’ refers to pre-theoretical beliefs, and these pre-theoretical beliefs are generated by an innate physical reasoning system. I begin by outlining the relevant background discussions on the nature of intuitions and their role in philosophy to motivate the need for a more careful investigation of the meaning of ‘intuition’ and the role of intuitions in specific sub-disciplines of philosophy. In chapters one and two I argue that ‘intuition’ is ambiguous between an inflationary and deflationary sense. In the inflationary sense, ‘intuition’ refers to a priori intellectual seemings with a special phenomenology, conceptual etiology, and modal content. In the deflationary sense, ‘intuition’ refers to beliefs or inclinations to believe. In chapter three I specifically examine the use of intuitions in material object metaphysics and conclude that in this sub-community ‘intuition’ is used in the deflationary sense to refer to pre-theoretical beliefs. Drawing from research on infant cognition, in the final chapter I argue that intuitions regarding material object metaphysics are those judgments that arise from an innate physical reasoning system. Based on this empirical observation, I argue that metaphysicians ought to give preference to abstract intuitions over intuitions regarding concrete cases because these abstract intuitions reflect the innate structure of our physical reasoning mechanisms.
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The aim of this dissertation is to better understand the nature of intuitions and their epistemic role in philosophical discourse. These topics have received a great deal of attention in contemporary meta-philosophical discussions. These discussions have been motivated by the pressing need to provide an account of, and to critically evaluate, the epistemic foundation of philosophy. Although theorists strongly disagree on the finer points in these debates, there is a general consensus in the field that, as Weinberg observes, “analytic philosophy without intuitions just wouldn’t be *analytic* philosophy.” (2007, 318) Moreover, almost all theorists agree with what I shall call the received wisdom of meta-philosophy.

RWM: Contemporary analytic philosophers heavily rely on intuitions as evidence, with intuition understood as a single kind of mental state. The aim of this dissertation is to critically evaluate RWM with respect to philosophy in general and material object metaphysics in particular. I argue that RWM is false because ‘intuition’ does not refer to a single type of mental state. In presenting this argument, my aim is to remain neutral with regard to the epistemic justification conferred by the various mental states referred to by ‘intuition’ and its cognates. While the bulk of the discussion of intuitions has focused on the epistemology of intuitions, I hope to show that this focus on the epistemology has left several important questions unanswered.

First, what are intuitions? Some meta-philosophers have addressed this question directly, but most authors take for granted that this question has an obvious answer and proceed to defend or critique the role of intuitions in philosophy. Second, what is the meaning of ‘intuition’ and its cognates? To date, this question has received little attention, but determining the meaning of

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‘intuition’ would lead to a stronger understanding of the nature of intuitions. Researchers who appeal to psychological studies on intuitions, for instance, must presuppose that psychologists use ‘intuition’ in the same sense as philosophers, but there are good reasons to suspect that this is not the case. Third, this dissertation aims to give a partial answer to this question: how do the norms surrounding intuition-talk differ between sub-disciplines of philosophy? This question has received almost no attention in the current debate.

Chapters one and two focus on the second question. Contrary to RWM, I present evidence from a wide range of sources indicating that ‘intuition’ is ambiguous between an inflationary and deflationary sense, and hence that it does not refer to a single type of mental state. In the inflationary sense, ‘intuition’ refers to a priori intellectual seemings with a special phenomenology, conceptual etiology, and modal content. In the deflationary sense, ‘intuition’ refers to beliefs or inclinations to believe. The evidence for this conclusion is drawn from meta-philosophers’ stated definitions of ‘intuition’ along with less formal characterizations of intuitions, analysis of the most popularly cited paradigm cases of philosophers appealing to intuitions as evidence, the meaning of ‘intuition’ and its cognates in ordinary English, an analysis of the communication network of philosophy, and linguistic tests for ambiguity. This evidence strongly supports the conclusion that ‘intuition’ is ambiguous. This conclusion has important implications for meta-philosophers and philosophers more generally. For meta-philosophers, this suggests that at least some of the disagreements concerning the epistemic credentials of intuitions may be due to theorists speaking past one another, using ‘intuition’ in two distinct senses. Where their disagreements are very real, the observation that ‘intuition’ is ambiguous instead suggests that more time should be devoted to carefully defining terms to focus on their real disagreements. I also suggest a normative implication for philosophers in general. Given that
we use ‘intuition’ in two distinct senses, philosophers ought to either clarify their intended meaning when using ‘intuition’ and its cognates or refrain from employing such terms.

Chapters three and four concern the final question: how do the norms surrounding intuition-talk differ between sub-disciplines of philosophy? I specifically investigate the meaning of ‘intuition’ and the role of intuitions in discussions concerning the ontology and mereology of material objects. Despite the fact that ‘intuition’ is ambiguous in philosophical discourse, in chapter three I argue that most metaphysicians working in the target sub-disciplines use ‘intuition’ and its cognates to refer to pre-theoretical beliefs. That is, authors working on these topics generally employ the deflationary sense of ‘intuition’ such that intuitions need not have modal content, a special phenomenology, or conceptual etiology. This is an important discovery because it provides a starting point for understanding the nature of intuitions. As noted above, theorists should be wary of investigating the psychological nature of intuitions prior to understanding the meaning of ‘intuition,’ but, with its meaning understood in relation to this sub-discipline, we may proceed to consider psychological research regarding the relevant mental states.

Drawing from research on infant cognition, in the final chapter I argue that intuitions regarding material object metaphysics are those judgments that arise from an innate physical reasoning system. This conclusion is supported by considering a range of metaphysical principles that metaphysicians characterize as intuitive and showing that each principle has an analog in discussions of infant psychology. Given the striking parallel between discussions in infant cognition and metaphysics, we have good reason to think that the similarities are non-accidental. I argue that the similarity is best explained by intuition nativism.

**Intuition Nativism:** In ontological and mereological discourse in analytic philosophy, ‘intuition’ and its cognates generally refer to cognitive assessments concerning the nature and
existence of physical objects produced by physical and agential reasoning systems that are innate or early developing and fully developed by age two.

If this is right, our pre-theoretical intuitions regarding ontology arise from the same physical reasoning system implicated in infants’ behavior, our ordinary engagement with the physical world as adults, and scientific thinking. This discovery may have significant normative implications for the role of intuitions in metaphysics. One possible implication is that metaphysicians ought to give preference to abstract, general intuitions over intuitions regarding concrete cases because these abstract intuitions reflect the innate architecture of our physical reasoning system. When our intuitions regarding particular cases conflict with the general psychological principles concerning physical reasoning we should discount these case-based intuitions as performance errors. This may give us reason to prefer generalist accounts, such as universalism or nihilism, over particularist accounts that largely match our ordinary beliefs concerning physical objects, but I note some difficulties facing this argument. The second possible normative implication is that one cannot critique the epistemic value of metaphysical intuitions without also critiquing the epistemic foundations of the physical sciences. If metaphysical intuitions are generated by the same reasoning system that is essential for scientific discoveries in physics, then empirically oriented philosophers might be mistaken in simultaneously rejecting intuitions and supporting the methodology of the physical sciences.

These normative implications are intended to be merely speculative. The significance of this project is in its careful analysis of the meaning of ‘intuition’ in philosophy generally and material object metaphysics in particular, and the evidence suggesting that several metaphysical principles reflect the basic cognitive architecture of the mind. If the central theses defended here are correct, I have raised far more questions than I answer here. Given that ‘intuition’ is ambiguous, we should investigate the full range of possible disambiguations using the tools of
linguistics, information science, and philosophy to better understand the distinct uses of ‘intuition’ and its cognates. Given that most philosophers in at least one sub-field of philosophy use ‘intuition’ to refer to a single type of mental state, we should also investigate the distinctive norms surrounding intuition-talk in each of philosophy’s sub-disciplines. If our metaphysical intuitions resemble the pre-linguistic cognitive assessments of infants, we should devote more attention to the possible normative implications of these descriptive facts. In this dissertation I hope to provide the basic framework for beginning to address these and a range of related questions concerning the nature and epistemic value of intuitions in philosophy.
1.1 ‘Intuition’ in Philosophy

The aim of this and the following chapter is to argue that ‘intuition,’ as used by professional philosophers, is ambiguous between at least two senses. This will be a significant conclusion, in part because intuitions have received a great deal of attention in contemporary meta-philosophical discussion.\(^1\) Despite their disagreements, meta-philosophers generally agree with what I shall call the received wisdom of meta-philosophy.

RWM: Contemporary analytic philosophers heavily rely on intuitions as evidence, with intuition understood as a single kind of mental state.

Before proceeding, some clarification is in order. ‘Contemporary analytic philosophers’ refers to analytic philosophers writing over approximately the last fifty years and especially those currently engaging in philosophical discourse. In claiming that these philosophers heavily rely on intuitions as evidence, RWM remains neutral with regard to various notions of evidence, simply holding that intuitions are treated as epistemically relevant data, are often appealed to in supporting or challenging philosophical accounts, and occupy a central place in philosophical discourse. The meaning of ‘intuition’ in RWM will not be precisely defined, because part of my aim here is to provide evidence that ‘intuition’ is ambiguous. Negatively, ‘intuition’ should be understood as not referring to Kant’s Anschauung (typically translated as ‘intuition’), the intuitions of spiritual mediums, or a mother’s intuitions. Positively, as a first pass, the mental states referred to by ‘intuition’ are those that philosophers seem to be relying on when they use

\(^1\) See especially DePaul and Ramsey (1998), Williamson (2007), and Cappelen (2012).
terms such as the following: intuitive, intuitively, intuiting, intuit, seem, seems, see, appear, appears, clear, clearly, present, presented, tempting, tempted, strike, strikes, striking, impression, obvious, obviously, self-evident, we would say, we are inclined, we accept, and various combinations of these terms and phrases. Not all instances of these terms are cognates of ‘intuition,’ but authors frequently use such terms and phrases when engaging in intuition-talk, broadly construed. RWM is a sociological claim about the common practices and psychology of contemporary analytic philosophers. As such, it ought to be defended or challenged through empirical considerations. As a final clarification, it should be noted that, in claiming from the outset that ‘intuition’ is ambiguous, I should proceed throughout this work by disambiguating each use of ‘intuition.’ For the sake of easy reading, this will not be done except where a precise interpretation of ‘intuition’ is especially important.

RWM may be challenged in at least three ways. The first, taken by Herman Cappelen (2012), is to argue that philosophers do not rely on intuitions as evidence. A second challenge, presented by Jennifer Nado (forthcoming), is to show that the mental states typically thought of as intuitions are heterogeneous. The third challenge, my own, is to hold that ‘intuition’ does not refer to a single type of mental state. This criticism of RWM is similar to Nado’s criticism, except that my focus will be on the meaning of ‘intuition’ rather than empirical studies of the mental states associated with intuitions. I will argue that both RWM and Cappelen’s rejection of RWM are mistaken. Specifically, in this and the following chapter I will argue for two theses. First, ‘intuition’ is ambiguous in a way that undermines RWM. Second, if this is right, then

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2 Cappelen also presents evidence indicating that ‘intuition’ is ambiguous, but proceeds throughout his work to speak of intuitions as if ‘intuition’ has a single meaning. The possible ambiguity of ‘intuition’ appears to not play a major role in his argument.

3 While Nado assumes a standard meaning of ‘intuition’ and proceeds to show heterogeneity given that single, stable interpretation of ‘intuition,’ I instead proceed by arguing that ‘intuition’ is ambiguous. I am persuaded by Nado’s arguments, and I suspect that for each of the various disambiguations of ‘intuition’ discussed below, a variety of relevantly distinct mental processes are related to intuitions so defined.
philosophers ought to refrain from intuition-talk in philosophical discourse. These theses should not be understood as skeptical rejections of intuition. In rejecting RWM I am not claiming that intuitions play no legitimate role in philosophy. For many disambiguations of ‘intuition,’ this term refers to a legitimate source of evidence in philosophical inquiry. In arguing that philosophers should refrain from intuition-talk, I am not claiming that philosophers ought to refrain from appealing to intuitions as evidence, only that they should not use ‘intuition’ and its cognates to characterize this evidential appeal. Throughout this work I will, unfortunately, be doing exactly what I suggest we should not do (using ‘intuition’ to characterize evidential appeals). I hope the reader will appreciate the value of using ‘intuition’ without qualification for the sake of brevity.

My defense of theses one and two will proceed as follows. The remainder of this chapter will be devoted to considering proposed definitions and purported paradigm cases of philosophers appealing to intuitions. I begin section one by summarizing the meta-philosophical literature concerning the use of ‘intuition’ and intuitions in philosophy to provide further evidence that the majority of meta-philosophers endorse RWM. I then turn to the defense of thesis one, that ‘intuition’ is ambiguous. This will involve an argument by elimination. I assume that philosophers’ uses of ‘intuition’ may be interpreted in one of three ways: as a term in ordinary English, as a technical term employed only by philosophers, or, as a specialized discriminate sense of the ordinary term. I first evaluate the plausibility of interpreting it as a

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4 In claiming that many disambiguations of ‘intuition’ refer to a source of evidence, I remain neutral regarding the significance of this evidence and the extent to which philosophers ought to care about the evidence. My neutrality here is in some respects similar to Williamson’s (2007) attitude towards intuition-talk, but I diverge from Williamson in chapter three. There I break from this neutrality to argue that in material object metaphysics we ought to give preferential weight to our intuitions regarding abstract principles over our intuitions regarding concrete cases.

5 These options are taken from Cappelen (2012) and Bengson (forthcoming). Cappelen argues that ‘intuition’ should be understood as a term in ordinary English or as a technical term, and Bengson challenges this by advocating the middle path of discriminate use.
generally accepted technical term. If ‘intuition’ is a technical term used homogeneously by the philosophical community, its meaning must be fixed by either a general consensus on definitions or widespread agreement on paradigm cases. In assessing the first possibility, the most natural starting point is the characterizations of intuition given by meta-philosophers. It will be shown that meta-philosophers disagree substantially on the purportedly central features of intuition and that this disagreement is seen in the wider philosophical community as well. This indicates that proposed definitions will not suffice for fixing the meaning of ‘intuition’ as a technical term. To address the second possibility, I consider the most widely cited paradigm cases and conclude that disagreement regarding the defining features is reflected in significant differences between paradigm cases, such that this route to establishing an unambiguous technical term fails.

In chapter two I consider two further routes for showing that ‘intuition’ is not ambiguous. The first is to show that ‘intuition’ in philosophy has the same semantic content as ‘intuition’ in ordinary English, and this term is unambiguous. Based on dictionary definitions and data on ordinary use, I will argue that ‘intuition’ and its cognates are ambiguous in ordinary English; if philosophers are using the term indiscriminately, this ambiguity transfers to philosophical discourse. I then turn to consider a middle ground, first proposed by Bengson (forthcoming), according to which philosophers use ‘intuition,’ not as a technical term, but nonetheless in a discriminate way. If philosophers’ uses are sufficiently homogeneous and discriminate, then ‘intuition’ is not ambiguous. However, I will argue that Bengson’s account conflicts with evidence from survey results and philosophical texts.

This evidence will be supplemented by two independent measures: litmus tests for ambiguity and communication network analysis. ‘Intuition’ passes the four most standard tests for ambiguity in linguistics, and analysis of philosophers’ communication networks provides
corroborating evidence that goes some way in explaining the source of the ambiguity. With all of this evidence in mind, I conclude that ‘intuition’ is ambiguous. Based on this conclusion, at the end of chapter two I argue that the ubiquity of intuition-talk is methodologically problematic. The common use of ‘intuition’ and its cognates goes against the generally accepted virtues of philosophical writing and argumentation such as clarity and avoiding fallacious arguments, and thus philosophers ought to make a conscious effort to avoid the use of such terms.

The standard characterization of philosophical practice by meta-philosophers is as follows. Despite their disagreements, philosophers writing on intuition generally agree that intuition plays a significant or essential evidential role in contemporary philosophical discourse (Bealer 1998; BonJour 1998; Goldman 2007; Kornblith 1998; Pust 2000). Since at least the 1970s philosophers have made heavy use of intuition vocabulary (Symons 2008, 71). This may have originated with Chomsky’s (1965) extensive use of the term in linguistics (Hintikka 1999), the ordinary language tradition, or the linguistic turn, but nothing here depends on the details of this development or when exactly it originated. Some meta-philosophers make heavy use of the linguistics analogy (Devitt 1996; Goldman 2007; Graham & Horgan 1994; Hauser 2008; Hauser, Young & Cushman 2007; Rawls 1971, 47), but even those who resist the analogy between

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6 Cappelen (2012), Deutsch (2009), Earlenbaugh and Molyneux (2009), and Williamson (2004) are notable exceptions to this generalization. I return to these authors when presenting the case against the standard characterization.

7 This is not to say that nothing like an appeal to intuitions was present before these publications. The methodological norms related to earlier appeals to common sense (Reid, 2002/1785; Moore, 2004/1925) approximate those found in contemporary intuition-driven philosophy. Goldman (2007, 2) points to Locke’s (1975/1694) use of intuitions and similar moves can be seen as far back as Plato’s dialogues. What I take to be unique about contemporary analytic philosophy’s methodology is the conscious, deliberate use of ‘intuition’ and its cognates to denote this appeal to intuitions.

8 Hintikka’s hypothesis could be tested by tracking the use of ‘intuition’ and citations of Chomsky in a wide range of philosophical publications. Hintikka’s argument for Chomsky’s influence is only motivated by particular examples, but I suspect that a more robust investigation would support his conclusion. This could be done by tracking the use of ‘intuition’ in published philosophy articles since the 1950s along with the lineage of citations to Chomsky and other significant linguists using ‘intuition.’
philosophy and linguistics generally agree that contemporary philosophers rely significantly on intuitions (Bealer 1998, 211).

Meta-philosophers typically cite landmark publications in epistemology (Gettier 1963), political theory (Rawls 1971), philosophy of mind (Putnam 1973), and philosophy of language (Kripke 1972) as paradigm cases of philosophers appealing to intuitions as evidence. These are taken as paradigm cases because they are instances of what Dennett (1984, 12) labels an *intuition pump*, i.e. a thought experiment presented with the intention of eliciting an intuition. Such landmark publications are thought to have played a crucial role in the development of analytic philosophy’s methodological norms (Hintikka 1999). Most notably, these publications are taken to be paradigms of what I will label the *intuition norm*. By “intuition norm” I mean analytic philosophers’ reliance on intuitions as a basic source of evidence. This descriptive claim is distinct from, but typically paired with, the normative claim that this is how philosophers ought to proceed (e.g. Bealer 1998; BonJour 1998; Goldman 2007; Jackson 1998; Pust 2000). The thought is that if landmark philosophical essays relied significantly on intuitions, this must be the normative ideal for philosophical discourse.

Purportedly, when philosophers use intuition language they are appealing to intuitions as evidence. While philosophers characteristically rely on reasoning and argumentation, it is thought that contemporary philosophers rely on intuitions to justify the premises of these arguments. Thus, intuitions are often taken to be the evidential rock bottom in philosophical discourse (Weinberg 2007, 320), although they need not be interpreted in this way (Goldman & Pust 1998, 179). Whether or not intuitions are understood as the epistemic foundation for philosophical discourse, meta-philosophers agree with Kornblith’s observation that philosophers

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9 I consider some of these works in greater detail below. Of these four often-cited works, only Kripke and Rawls use ‘intuition’ or its cognates, and Rawls’ conception of intuitions clearly departs from typical definitions of the term.
“appeal to intuitions in constructing, shaping, and refining their philosophical views.” (1998, 129) Bealer characterizes this practice as follows:

Philosophical investigation and argument approximate the following idealization: canvassing intuitions, subjecting those intuitions to dialectical critique, constructing theories that systematize the surviving intuitions, testing those theories against further intuitions, and so on until equilibrium is approached. (1998, 205)

Similar remarks are made by Alexander and Weinberg (2007, 56), Bengson (forthcoming, 2), Chudnoff (2011, 625), Cummins (1998, 125), Goldman (2007, 1), Kornblith (2005, 428), Shafir (1998, 59), Sosa (2007, 45), Symons (2008, 68), Williamson (2007, 215) and almost all other theorists writing on intuitions. Where Bealer and others present their characterization as an idealization, ‘idealization’ should be understood as a descriptive generalization with exceptions rather than as a normative standard that differs significantly from actual philosophical practice. Importantly, these theorists take actual philosophical practice to approximate this characterization with relatively few exceptions. Those who criticize the intuition norm, such as Cummins, accept the descriptive idealization while rejecting appealing to intuitions as a normative ideal. Whatever their disagreements, the field is in agreement that, as Alexander and Weinberg suggest, “analytic philosophy without intuitions just wouldn’t be analytic philosophy.” (2007, 318)

These remarks indicate that meta-philosophers generally endorse RWM, but more textual evidence is needed to show that these theorists are treating intuitions as a unified type of mental state. Unfortunately, intuition theorists only rarely explicitly consider the topic of the (dis)unity of intuitions. The best evidence that theorists conceive of intuitions as a single type of mental state comes from their various characterizations of intuitions (explored in greater detail below). Bealer and Sosa, for example, speak of the epistemic role of our intuitions regarding arithmetic, geometry, and all of philosophy, without ever suggesting that different types of mental states
count as intuitions in these various domains (Bealer 1998, 211; Sosa 2007, 3). Similarly, Pust speaks of intuitions as “a distinct kind” of mental state (2000, 31, emphasis added). If a theorist claims that intuitions are mental states of type \( x \), we may reasonably infer that she is treating intuitions as a single type of mental state. And, given that such implicit claims to the unity of intuitions are not challenged in the literature, we may reasonably infer that meta-philosophers in general conceive of intuitions as a single type of mental state.\(^{10}\) Thus, it appears that meta-philosophers generally endorse what I have called the received wisdom of meta-philosophy.

1.2 Definitions of ‘Intuition’

This agreement may be misleading. If these meta-philosophers are right, something called ‘intuition’ is central to all of contemporary analytic philosophy, but this says nothing without an accurate definition of ‘intuition’ to tell us just what is thought to be vital to philosophical discourse. Below I consider what various meta-philosophers have taken to be the central defining features of intuitions.

F1: **Seemings**: intuitions are non-doxtastic, non-perceptual intellectual seemings with propositional content (Bealer 1998, 213; Bengson forthcoming; Chudnoff 2011, 626; Ewing 1951, 26; Hales 2012, 189; Huemer 2001; Langkau 2012, 328; Livengood et al. 2010, 318; Pryor 2005; Pust 2000, 33; Swain, Alexander & Weinberg 2008; Weinberg 2007, 318)

F1*: **Beliefs**: intuitions may be reduced to or identified with judgments, beliefs or inclinations to believe. (Cummins 1998, 119; Devitt 2006, 491; Earlenbaugh & Molyneux 2009, 89; Goldman 2007, 14; Gopnik & Schwitzgebel 1998, 78; Kahneman & Tversky 1982, 124; Kornblith 1998; Lewis 1983, x; Ludwig 2007, 135; Parfit 1984, 278-280; Sider 2001, 196-207; Sosa 2008; van Inwagen 1997, 309; Williamson 2004, 109)\(^{11}\)

\(^{10}\) Jennifer Nado (forthcoming) is an important exception to this generalization. In that essay Nado argues for a conclusion similar to my own. Her essay has been cited twice (as of 11/14/13), indicating that the ambiguity of ‘intuition’ or heterogeneity of intuitions is not yet a heavily discussed topic in meta-philosophy.

\(^{11}\) Cummins, Gopnik and Schwitzgebel also characterize intuitions as hypotheses resulting from tacit theories, but for my purposes here nothing hangs on the distinction between believing that P and hypothesizing that P. Parfit and Sider do not explicitly report their meta-philosophical leanings, but in the passage cited Parfit uses “inclined to believe” and “intuitive belief” interchangeably, and Sider uses “ordinary belief” and “intuition” interchangeably.
F1**: Conceivings or Imaginings: at least some intuitions are a type of conceiving or imagining that P. (Chalmers 2002, 155; Yablo 1993, 35-37)

F1***: Affective States: At least some intuitions are emotional representations of phenomena (Gendler 2007; Roeser 2011).

F2: Special Phenomenology: if subject S has the intuition that P then, necessarily, S has an accompanying phenomenal experience distinctively associated with intuitions. (Bealer 1998, 207; Chudnoff 2011, 627; Koksvik 2011; Livengood et al. 2010, 318; Plantinga & O’Brien 1993, 105; Pollock 1974, 321; Pust 2000, 39)


F3*: Conceptual or Non-Conceptual Etiology: intuitions may result from conceptual competence but have other sources as well. (Cummins 1998; Devitt 2006, 494; Kornblith 1998, 133; Lewis 1983, x; Rawls 1951, 189; van Inwagen 1997, 309)

F4: Modal: philosophical intuitions always have modal content (e.g., P is necessary, possible, or impossible), either implicitly or explicitly. (Bealer 2000, 3; BonJour 1998; Grundmann 2007; Ichikawa & Jarvis 2009, 245; Ludwig 2010, 430; Pust 2000, 39; Sosa 2007, 103)

F4*: Modal or Non-Modal: While philosophers sometimes have intuitions with modal content, many and perhaps most philosophical intuitions are intuitions about contingent features of the world. (Devitt 2006, 491; Gopnik & Schwitzgebel 1998, 77; Kornblith, 1998; Lewis 1983, x; van Inwagen 1997, 309; Weinberg 2007, 320; Williamson 2007)


F5*: A Posteriori: the intuition that P provides a posteriori justification for believing that P. (Devitt 2006, 491; Goldman 2007, 19; Gopnik & Schwitzgebel 1998, 77; Kornblith 1998, 137; Papineau 2009, 20)


F6*: Reflective: intuitions may and often are based on reflection and deliberation (Chalmers 2002, 147; Cummins 1998, 126; Daniels 1979; Kauppinen 2007; Koksvik 2013; Liao 2008, 256; Rawls 1951, 183)

Putting aside F1** and F1*** for the moment, for each F there is a corresponding F* expressing an opposing characterization. The Fs may be characterized as inflationary because they generally offer more robust characterizations of intuitions that significantly narrow the scope of what
counts as an intuition. The F*s may be characterized as deflationary because they admit of a wider range of phenomena. These conflicting characterizations form two somewhat natural groups. The Fs are generally endorsed by rationalist philosophers who support a special evidential role of intuitions in philosophy.\textsuperscript{12} In contrast, F*s are more often held by philosophers with empiricist leanings.\textsuperscript{13} These philosophers tend to offer more modest or restricted support for intuition or explicitly argue against the method of relying on intuitions. Of those F* theorists endorsing the evidential role of intuitions, it is often thought that intuitions are just one of many sources of evidence in philosophy and that such mental states are not peculiar to philosophers.

The relative naturalness of the F/F* groupings is seen in the network diagram in Figure 1 below, constructed with the Harel-Koren Fast Multiscale algorithm.\textsuperscript{14} I will rely on similar network representations throughout the dissertation, so it is worth pausing to explain this type of representation in detail. All networks have two basic constituents, objects and relations. I will refer to the objects as \textit{nodes} and the relations between those objects as \textit{edges}. Any type of entity can be treated as a node, and any relationship between those entities can be represented by an edge. In representing a social network, one could represent people as nodes and friendships between those people as edges. If the above network were a friendship network, the divide between F and F* labels would be indicative of two distinct friendship cliques. Similarly, one might use a network graph to represent internet relations (nodes: websites; edges: links), disease

\textsuperscript{12} The F account may be traced back to Descartes’ privileging the “natural light” in his \textit{Meditations}. In the third meditation he emphasizes the difference between the natural light, which is an a priori intellectual seeming with a distinctive phenomenology, and a mere F1* “impulse to belief” which, he argues, lacks epistemic worth.

\textsuperscript{13} One notable exception to the link between F features and rationalism is Weinberg’s general acceptance of an F definition. Although Weinberg has empiricist leanings, insofar as he is interested in empirically discovering our intuitions, he endorses a more traditional account. I suspect that he endorses an F conception of intuitions for the sake of engaging with his rationalist opponents. As a generalization, experimental philosophers, and those endorsing F* features, are more concerned with the contents of our intuitions and the practice of appealing to intuitions, whereas more traditional philosophers, and those endorsing F features, are more concerned with the ontology of intuitions (cf. Vaidya 2010, 400).

\textsuperscript{14} This algorithm was chosen for its ability to detect and represent clusters of nodes.
(nodes: infected organisms; edges: viral transmissions), or macro-economics (nodes: nations; edges: trade relations). Whatever the target domain, network graphs are valuable because they allow for a relatively simple visual representation of a large, complex set of relations between the objects in that domain; computational network analysis is valuable for detecting large scale patterns that would be missed if analysis were limited to studying objects or relations in isolation. The following network is one such example.

Figure 1. A network representation of defining features of intuition (red & blue labeled nodes) and philosophers who endorse those characterizations (black dots), with edges representing the endorsement relation.

This network was constructed by treating each author and definition as a node. Black dots represent authors and colored labels definitions (blue for F and red for F*). Each endorsement of a definition by an author is represented by an edge (gray line). Edges were created between
author A and definition D just in case A endorses D. For example, Koksvik, who endorses F2 and F6*, can be seen as the black dot, right-center, connecting these two definitional features. As indicated by the spatial dimensions of the network, the Fs form one natural cluster and the F*s another. One important exception to this F/F* classification is that most intuition theorists endorse F6, that intuitions are spontaneous rather than reflective. As seen here, this makes F6 a significant bridge between the F and F* clusters and F6* a relative outlier. Many authors who generally match the F* categorization endorse F6 rather than F6*. In network jargon, F6 has high betweenness centrality, meaning that it plays a central role in connecting two otherwise largely isolated clusters.¹⁵ It plays this role because it is endorsed by authors who otherwise substantially disagree. One possible reason for this is that F6 matches the non-technical, ordinary sense of the term (discussed further in chapter two).

This network was folded to focus on the connections between definitional features. By ‘folding’ I mean simplifying the original data set to focus on a specific type of node. In this case, authors were removed from the network. Wherever author A endorses definitional features X and Y, an edge was created between X and Y and A was removed from the analysis. This resulted in the network displayed in Figure 2 below, created with the ForceAtlas algorithm.¹⁶

¹⁵ One node, F1*, has a higher betweenness centrality (386), but I take this to be less significant because this is an artifact of the relatively high number of authors that were only cited in relation to F1*. Trivially, F1* is a necessary link to these authors because they would otherwise not be included in the graph. F6’s second high betweenness centrality (338) is more significant in this context because all of its edges relate to nodes with other edges.
¹⁶ ForceAtlas is a force-directed, continuous layout algorithm based on a linear-linear model comparable to Noack’s LinLog and the Fuchterman-Reingold algorithm. This algorithm is ideal for small to medium-sized graphs of scale-free networks.
Figure 2. A network representation of defining features of intuition (red & blue labeled nodes), with edges representing the number of cited philosophers who endorse both characterizations of intuitions.

In this graph each node is a purported defining feature of intuition. Unlike the first graph this one is sensitive to edge weight. By ‘edge weight’ I mean the strength of the connection between two nodes. For social networks, edge weight may track the strength of a friendship or the frequency of communication. For economic networks, edge weight may track the quantity of goods traded between corporations or nations. This is important because not all relationships are equal. In the graph above, the edge weight between any two definitional features was determined by the total number of authors endorsing both definitions. For example, seven authors endorse both F1* (doxastic states) and F4* (modal or non-modal content), so the edge weight was set to seven,
whereas the edge weight between F1* and F3 (conceptual etiology) was set to one because only one author endorses both. By distinguishing between such strong and weak connections, we can identify which definitional features have a more natural fit, at least according to the common opinion of meta-philosophers. Edge weight factors into the creation of the network graph by partially determining the distance between nodes, which partially explains why F1* is closer to F4* than F3. In this image edge width and color correspond to edge weight. Even more than the initial graph, this image indicates that the proposed defining features fall into two natural clusters. The only significant connection between these groups is the conception of intuitions as spontaneous (F6).

This disagreement indicates that the first route to interpreting ‘intuition’ as a technical term (a generally accepted definition) fails. These theorists may all be referring to a single mental state, with roughly half of them getting it wrong, but this possibility cannot be justified by appeal to a unified definition of the term by experts. While there may be more intuition theorists endorsing each F or F*, in each case a sizable and vocal minority disputes the majority opinion. Given that these definitions form two clusters, if ‘intuition’ is a technical term in philosophy whose meaning is determined by popular definitions, we should conclude that ‘intuition’ is ambiguous between two distinct senses. One may worry, however, that even this extensive list of citations is not truly representative of the philosophical community. Although a substantial number of meta-philosophers hold each of these views, it may be that the majority of philosophers in the wider community endorse some particular conception.

Fortunately, speculation is unnecessary here because we have some empirical evidence regarding philosophers’ views on intuition. Kuntz and Kuntz (2011) surveyed 282 English speaking philosophers regarding seven definitions of ‘intuition’ and asked participants to rank
order these definitions.\textsuperscript{17} If the meta-philosophical disputes were merely indicative of disagreement between intuition theorists, then we would expect their participants to reach a general consensus on the most appropriate definition. This was not what they found. Each of the seven definitions received some support and the two most popular definitions were approximately equal in their average ratings. According to the first, an intuition is a “judgment that is not made on the basis of some kind of observable and explicit reasoning process.” According to the second, an intuition is “an intellectual happening whereby it seems that something is the case without arising from reasoning, or sensorial perceiving, or remembering” (2011, 654-655). According to both definitions intuitions are spontaneous and not the result of explicit inference (F6), but they differ in an important respect. The first aligns with the doxastic account of intuitions (F1*, beliefs, inclinations to believe, or judgments more generally) while the second is in line with theorists such as Bealer and Bengson who insist that intuitions cannot be identified with judgments (F1). According to this second definition, intuitions are intellectual seemings relevantly analogous to perceptual seemings. They provide evidence for judging or believing that P without themselves being a doxastic attitude towards P. Unfortunately none of the survey’s definitions distinguished between F2-F5*, but this nonetheless provides some modest evidence that philosophers agree one feature (F6) while disagreeing on another (F1/F1*).

This is an interesting result, in part because it indicates that the meta-philosophical community’s conceptions are mirrored in the reported conceptions of intuition by philosophers in general. As in meta-philosophy, with survey participants there was no consensus on how to define intuition in the larger analytic philosophy community. As Kuntz and Kuntz note, this “is not a surprising result given the variety of intuition accounts available in the [meta-

\textsuperscript{17} Buckwalter (2012) has criticized Kuntz & Kuntz, arguing that their results do not support their conclusion that experimental philosophy is unmotivated. I agree with this criticism but take their data to be unaffected by the challenge.
philosophical] literature.” (2011, 655). The disagreement amongst philosophers does more than just mirror the views of some particular meta-philosophers. Recall the network representation of meta-philosophers views. In this network, three nodes had especially high ranking: F1*, F6, and F1.  

Similar to these meta-philosophers, survey participants generally agreed with F6, but polarized around the conflicting F1 and F1* characterizations. This provides further evidence for the ambiguity of ‘intuition’ by demonstrating that analytic philosophers in general have two competing incompatible conceptions of intuition.

I will now consider two objections to the above argument. First, one might claim that the noted disagreements can be ignored if we can construct an appropriate Ramsey sentence for fixing the meaning of ‘intuition’ as a technical term. By ‘Ramsey sentence’ I mean the suggestion first made by Ramsey and Carnap of determining the meaning of a theoretical term by way of empirical, observation sentences. Such sentences may be constructed by considering the platitudes concerning intuitions and the role that ‘intuition’ and its cognates play in philosophical discourse. Thus, although there is disagreement on the definitions, there may be an implicit consensus in the practices surrounding intuition-talk. Holding to the positivists’ ideal, we might hope that such an operationalization could be presented in terms of observation statements, but we might make progress in defining ‘intuition’ even without this constraint.

I am doubtful that ‘intuition’ could be operationalized in terms of purely observational vocabulary, and I suspect that any proposed operationalization would face immediate criticism from intuition theorists. For example, one might propose the following Ramsey sentence: ‘intuition’ designates that state, whatever it may be, that we undergo when we reflect on Gettier

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18 These nodes were ranked highest according to several metrics. These three had the highest betweenness centrality, indicating that they are common ground amongst several philosophers. They were also ranked highest in regards to eigenvector centrality (relative importance to the central core of the network) and Page Rank (the method used by Google for assessing a website’s importance, given its position in the network of websites connected by links).
cases and other such paradigms, and which seems (from the inside) to rationalize assenting to certain verdicts. This is, strictly speaking, a far cry from a Ramsey sentence because it involves theoretical vocabulary referring to unobservables. A better version would be based on careful anthropological investigations of philosophers employing ‘intuition,’ but this example suffices for making salient the difficulties with the ramsification method in relation to ‘intuition.’ Which mental states play the role of rationalizing assent in the Gettier case? They may be beliefs that lead one to infer that Smith does not know (F1*), or not. They may involve some ill-defined phenomenal conscious state (F2), but this is highly unlikely to be operationalized into observation language. ‘Intuition’ might be operationalized in terms of its mental causal history (F3), but this is controversial.

We may instead survey philosophers to determine which sorts of mental states seem to rationalize assent, but I suspect that their answers would each and every one of the proposed conflicting defining features of intuition. Were George Bealer to propose such a description, he might propose that intuitions are those Xs that (1) play a necessary epistemic role in philosophical theorizing, (2) do not play this role in the empirical sciences, (3) have modal content, and (4) are always accompanied by a special phenomenology. Were Robert Cummins to propose a description, he might propose that intuitions are those Xs that (1) are relied on by some philosophers, (2) need not play any role in philosophical theorizing, (3) are often empirically informed hypotheses or tacit theories, (4) play a similar role in the empirical sciences, and (5) are less reliable than non-intuitive judgments. Such radically diverging descriptions do not fit the model for the ramsification strategy. Instead, we might use the methods of cognitive psychology and neuroscience to discover what mental states have the functional role of rationalizing assent from the inside when considering paradigm thought experiments. I consider this possibility in
detail in section 3.4. This route seems plausible, but I will argue that any attempt to default to neuropsychology will either beg the question by first presuming some particular conception of intuitions or show that intuitions are a heterogeneous, motley class of mental states. Without the aid of scientific evidence, I am skeptical that the ramsification strategy will prove to be any more successful than the route of considering the most popular explicit definitions.

One might instead object that I have cherry picked these points of disagreement and omitted many cases of clear agreement. As a first response, it must be emphasized that F1-F6* are taken to be the central features of intuition by intuition theorists. This is evidenced by the fact that, when meta-philosophers provide definitions or characterizations of intuitions, they focus on F1(*) – F6(*), normative features, and not much else. As such, this list represents real, robust disagreement amongst theorists. Nonetheless, one may argue that other central features have been excluded. For example, almost all theorists agree that intuitions play a central evidential role in philosophy, and this is also a defining feature of intuitions. The evidential role was intentionally excluded because this is a normative rather than descriptive feature of intuitions. The normative, epistemological questions cannot directly settle the descriptive, psychological question about the nature of intuitions, and such questions are best postponed until we have an adequate understanding of the mental states in question.

Nevertheless, there are other points of general consensus. Although there are some exceptions, meta-philosophers seem to generally agree upon the paradigm cases and some features of intuitions. I consider these in the following section. F1-F6* indicate that the surface level agreement between meta-philosophers is misleading. All of the noted authors agree that X is central to philosophical discourse, where X is whatever is meant by ‘intuition,’ but their respective definitions of X suggest that there is, in fact, very little agreement on how to
characterize contemporary philosophical practice. Although each theorist insists that it is a “plain truth” (Bealer 1996, 3) that their X is at the core of philosophy, the plain truth for each respective theorist is strikingly different from what many others insist. Participants in this debate appear to be assuming something like what Vaidya calls the Transparency Assumption: Subjects can reliably report both when they have an intuition, and what the contents of their intuitions are (2010, 400). While this assumption may be justified, the further assumption – that subjects can know what type of mental state occurring – is not warranted in light of the disagreement cited above. This is the first general reason to seriously consider the possibility that ‘intuition’ is ambiguous. The reported Fs and F*s are logically inconsistent, and each point of disagreement concerns what theorists take to be a central defining feature of intuitions rather than an insignificant detail in their account. So, we should doubt the claim that any theorists’ notion of intuition reflects something that obviously plays a central role in philosophical discourse and conclude that, as a technical term, ‘intuition’ is ambiguous.

1.3 Paradigm Cases

One might suspect that the obviousness of intuition’s role in philosophy may be found in paradigm cases rather than definitions. This is the second route to defining ‘intuition’ as a technical term. Although theorists disagree substantially on how to define intuition, perhaps the disagreement regards a class of paradigm cases which all intuition theorists agree are paradigm cases of a philosopher having an intuition. Thus, this objection continues, Bealer et al. are right in insisting that it is a “plain truth” that intuitions are central to philosophical discourse. In considering the paradigm cases, I will begin with some examples noted by intuition theorists that spell trouble for the general method of relying on concrete cases to fix the meaning of ‘intuition.’
These cases are non-paradigms and are mentioned only to highlight the difficulties facing this method. I then turn to consider four of the central paradigm cases cited by intuition theorists: Gettier, Goldman on fake barns, Chalmers on philosophical zombies, and the trolley problem. For each paradigm I will explain the case and present what I take to be the most natural interpretation of the author’s methods and use of intuition-talk. I then consider Cappelen’s opposing interpretation that the authors in question did not rely on intuitions, and show why this interpretation is less plausible than my own. I conclude that the route of appealing to concrete cases does not vindicate RWM.

While there seems to be more agreement on the paradigm cases of intuition, the examples employed by F and F* theorists indicate that the disagreement runs deeper than their proposed definitions. First, consider the typical examples of intuitions offered by F* theorists. Daniel Dennett, for example, is a skeptic of intuitions who generally favors the F* characterizations (2001). Dennett compares these intuitions in philosophy of mind with intuitions related to naïve physics (2005, 34). Cummins is similarly skeptical, suggesting that we ought to "dismiss philosophical intuitions as epistemologically valueless" (1998, 125). Like Dennett, Cummins compares philosophical intuitions to the intuitions of naïve physics, as do fellow F* theorists Gopnik and Schwitzgebel (Cummins 1998, 119-124; Gopnik and Schwitzgebel 1998, 77). Others sympathetic to an F* reading focus on linguistic intuitions concerning whether or not a term or concept applies (Devitt 2006, 481; Stich 1996, 48). In contrast, consider the paradigm cases of intuition referenced by proponents of F. George Bealer (1998) defends those intuitions in epistemology and philosophy of mind challenged by Dennett, Cummins, and Stich, but the examples given to justify this conclusion are importantly different. Bealer’s case studies in

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19 Cummins’ view is more nuanced and less extreme than this quote suggests, but, nonetheless, he is clearly one of the more skeptical philosophers writing on intuitions.
defense of intuition include our intuitions regarding the naïve comprehension axiom, De Morgan’s laws, the double negation introduction rule, and the transitivity law in mathematics and logic (208-212). F-proponents generally follow this trend, citing the naïve comprehension axiom (Bengson 2010, 11), arithmetic intuitions (Bengson 2010, 26; BonJour 1998, 209; Sosa 1998, 260), geometric intuitions (BonJour 1998, 209; Chudnoff 2011, 636; Sosa 2007, 3), and nothing is numerically self-diverse (Sosa 1998, 259-260). As a particularly vivid example, Bengson offers the following paradigm case of intuiting:

The mathematical prodigy Ramanujan… hails a cab and, as it stops, he notices that its number is 1729. This causes him to smile, for he immediately sees that this number has a very interesting property, namely, the property of being the smallest number expressible as the sum of two positive cubes in two different ways. (2010, 11)

Proponents of a rationalist, F-like conception of intuition rely heavily on examples from mathematics and logic, but critics of their accounts such as Cummins, Dennett and Stich never so much as mention such examples. Goldman, who rejects rationalism and some F-features, mentions mathematical intuitions, but only to note that they are clearly “quite prone to error” (2007, 3). As seen, F* defenders focus on cases of physical or linguistic intuitions, and Bealer holds that neither are genuine intuitions (1998, 207-211). Disagreement is seen both in proposed definitions and in the examples used to motivate those definitions. Were we to update the hypothetical Ramsey sentences of Bealer and Cummins, we might add to Bealer’s characterization that (5) are exemplified by De Morgan’s law, and, to Cummins’ characterization, that (6) are exemplified by naïve physics. Adding such concrete examples to the Ramsey sentences does not help to fix the meaning of ‘intuition,’ and this suggests that the route

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20 Jonathan Weinberg, whose skeptical position is relevantly similar to remarks made by Cummins, Dennett and Stich, observes that proponents and skeptics of intuition often speak past each other in regards to the cases they address (2007, 319). Although he does not bring up specific examples, his discussion of the “vagueness” of ‘intuition’ may be seen as anticipating the evidence and arguments presented here.
of appealing to paradigm cases does not resolve problems seen with the disagreement found in explicit definitions.

One might object that such non-paradigm cases are largely beside the point. Critics such as Cummins unfavorably emphasize the similarity between philosophical intuitions and naïve physics (known to be unreliable), and proponents favorably emphasize the similarity with simple arithmetical judgments (known to be reliable), but neither the critics nor the proponents take their comparison cases to be the paradigms of philosophical intuitions. We may find clear agreement on paradigm cases even if philosophers disagree on the defining features and many concrete cases of the mental state in question. The relevance of these non-paradigm cases is that they influence our conception of intuitions by way of analogical transfer. In comparing paradigm philosophical intuitions to naïve physics intuitions or mathematical intuitions, theorists implicitly present an analogical argument that serves to transfer our understanding of the known case (naïve physics, known to be unreliable, or mathematics, known to be reliable) to the unknown case (philosophical intuitions). If concepts were discrete, symbolic representations of propositions, then such analogies might be irrelevant to the meaning of ‘intuition’ in philosophy, but I think we have good reason to think that analogical reasoning plays a significant role in determining the meaning of most concepts (Churchland 1986; Foss 1988; Lakoff & Johnson 1980). Nonetheless, I proceed by focusing on the paradigm cases of intuition-talk in philosophy. If there is large consensus regarding such paradigms, then shifts in meaning caused by analogical transfer may turn out to be negligible for interpreting the meaning of ‘intuition’ in philosophical discourse.

Meta-philosophers appealing to such paradigm cases in philosophy have rarely evaluated these cases in detail. Instead, the trend is to mention the cases as if it were obvious that the
philosophers cited relied on intuitions (as defined by the meta-philosopher citing them) and proceed with the assumption that such cases provide additional evidence for the evidential role of intuitions. The most thorough examination of the cases, to my knowledge, is seen in Herman Cappelen’s *Philosophy Without Intuitions*. Cappelen considers a variety of cases from the sixties to the present and concludes that none of these cases involve a reliance on intuitions as evidence because they lack the features that most intuition theorists describe as characteristics of intuitions (2012, 112). The cases he considers include Gettier (1963), the trolley problem (Foot 1967), brain transplants (Williams 1970), the violinist (Thomson 1971), fake barns (Goldman 1976), arthritis cases (Burge 1979), indexicals (Perry 1979), lottery cases (Cohen 1988), philosophical zombies (Chalmers 1996), and Truetemp (Lehrer 2000). In each case, Cappelen argues that the authors in question were not relying on intuitions as evidence, and he uses this as inductive evidence for his general conclusion that philosophers do not rely on intuitions as evidence. Thus, Cappelen and I agree that RWM is false, but for very different reasons. I assume that at least some disambiguations of ‘intuition’ refer to mental states that are rightfully treated as evidence by philosophers, but my purpose here is just to show that ‘intuition’ is ambiguous. Contrary to Cappelen, I will argue that a careful investigation of paradigm cases offers evidence for the ambiguity rather than the non-evidential status of intuitions, but either conclusion would undermine RWM.

It is beyond the scope of this chapter to consider all of the cases in detail, but it is worth pausing on a few to determine if the appearance of ambiguity is merely seen in definitions or if it is evidenced by the paradigm cases themselves. I consider four of Cappelen’s cases in detail: Gettier, fake barns, philosophical zombies, and the trolley problem. These cases are chosen for several reasons. They highlight important developments over a forty year period in analytic
philosophy. If our intuition norm has changed over this period, these cases should make that salient. In addition, these are some of the most cited paradigms by meta-philosophers and so are the most deserving of careful consideration. This is especially true of Gettier’s thought experiments. Chalmers and Goldman’s cases are chosen because both authors have written explicitly on which mental states they take to provide evidence for their respective conclusions; if our goal is to reach a charitable, unbiased assessment of the paradigm cases, the best starting point is to focus on cases where the authors have themselves explicitly noted what they intended in their writing. Finally, I have chosen the trolley problem because this is the paradigm case which has received the greatest attention from cognitive psychology and is thus most likely to serve as a foundation for determining the psychological states or processes implicated in our intuition norm.

1.3.1 Gettier

Of all the works in philosophy, the most often cited paradigm by intuition theorists is Gettier’s argument against the justified true belief account of knowledge. Gettier’s argument relies on two cases in which an agent seems to have a justified true belief yet lacks knowledge. For the sake of detailed examination I present one of his cases in full:

Suppose that Smith and Jones have applied for a certain job. And suppose that Smith has strong evidence for the following conjunctive proposition:

d. Jones is the man who will get the job, and Jones has ten coins in his pocket.

Smith's evidence for (d) might be that the president of the company assured him that Jones would in the end be selected, and that he, Smith, had counted the coins in Jones's pocket ten minutes ago. Proposition (d) entails:

e. The man who will get the job has ten coins in his pocket.

Let us suppose that Smith sees the entailment from (d) to (e), and accepts (e) on the grounds of (d), for which he has strong evidence. In this case, Smith is clearly justified in believing that (e) is true. But imagine, further, that unknown to Smith, he himself, not Jones, will get the job. And, also, unknown to Smith, he himself has ten
coins in his pocket. Proposition (e) is then true, though proposition (d), from which Smith inferred (e), is false. In our example, then, all of following are true: (i) (e) is true, (ii) Smith believes that (e) is true, and (iii) Smith is justified in believing that (e) is true. But it is equally clear that Smith does not know that (e) is true; for (e) is true in virtue of the number of coins in Smith's pocket, while Smith does not know how many coins are in Smith's pocket, and bases his belief in (e) on a count of the coins in Jones's pocket, whom he falsely believes to be the man who will get the job. (Gettier 1963, 121-123)

The first thing to note in regards to Gettier's work is that at no point in this article does he use 'intuition' or its usual cognates, although one might reasonably interpret "it is equally clear" as an appeal to intuitions. Anyone wishing to argue that Gettier himself relied on intuitions is obliged to provide an argument that Gettier relied on intuitions despite no explicit mention of this. This would be exceptionally difficult because one would first need to specify which sense of 'intuition' they have in mind (F, F*, or some hybrid of the two) and then show that Gettier was relying on this particular type of mental state, in himself or his reader, to justify his conclusion.

Because Gettier was writing in the infancy of analytic philosophy’s intuition norm, it is unlikely that he had any specific conception of intuition in mind, and the absence of 'intuition' and its cognates suggests that the most charitable interpretation of Gettier would not assume that he intended any specific conception. One might plausibly redirect the attention to those philosophers responding to Gettier who were more likely to have a worked out conception of intuitions, but this raises additional difficulties. When we turn our attention to philosophers analyzing Gettier’s work, there is no single claim or set of claims that clearly present themselves as justified by intuition. Chudnoff presents four candidate propositions:

(1) In the story: Smith has a justified true belief that P, but does not know that P.
(2) Possibly: One can have a justified true belief that P, but not know that P.
(3) If a thinker were related to P as Smith is according to Gettier’s text, he/she

21 The one exception is that in a footnote he states, “Plato seems to be considering some such definition at Theaetetus 20 I, and perhaps accepting one at Meno 98.” (1963, 123) This ‘seems’ is most reasonable interpreted as a hedging term rather than an indication that the following claim has a special evidential status. Likewise, one could quite easily argue that “it is equally clear” an obvious fact that is known by some source other than intuition. I return to this example in chapter two section 1.2.
would have a justified true belief that P, but not know that P.
(4) Necessarily: if every element in the Gettier story is true, then someone has a justified true belief that p, but does not know that p. (2011, 330)

Additionally:

(5) If the case had occurred, then the subject would have a justified true belief that p without knowing that p. (Alexander 2010, 382)

These are more than just possible ways of modifying Gettier’s original claim. Interpretations 2-5 have been defended by Ichikawa & Jarvis (2009), Williamson (2007), Malmgren (2011) and Alexander (2010), respectively, as the intuitive claim present in Gettier’s argument.22 Intuition theorists generally agree that some claim related to the Gettier cases is intuitive, but none of 2-4 is stated by Gettier himself, and it seems unlikely that any one of 2-4 is the intuition of most philosophers. Thus, even this seemingly straightforward case turns out to be contentious. One might suspect that 1 is the shared intuition, even by philosophers endorsing 2-4. On this view, philosophers defending 2-4 all have the same intuition but then distort the intuition to match their theoretical commitments. For example, philosophers who hold that all intuitions are modal intuitions might sincerely believe that, upon considering the Gettier case, it seems to them that necessarily P, but in fact the content of the relevant mental state is simply P.

To get at the shared intuition, it may be necessary to move upstream in the cognitive processing. The best candidate for the content of the shared intuition is, as Gettier states, that “Smith does not know that… the man who will get the job has ten coins in his pocket” (122).23 Most philosophers agree that this statement is intuitively plausible, but even if we come to a consensus on the content of the intuition, it remains an open question what sort of mental state or process has that content. Further, two philosophers may both report that P is intuitive while their

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22 These citations are taken from Cappelen (2012, 54). Ludwig (2010, 434) also endorses a version of (3), arguing that the content of the intuition must be general in form and not specifically refer to Smith.
23 Pust (2012) endorses this interpretation as the generally held intuition.
respective mental states are significantly different. One might report the non-doxastic F1 mental state of it seeming that Smith does not know while the other might report the doxastic F1* mental state of judging or believing that Smith does not know. Thus, even if we can resolve the problems related to determining the content of the intuition, there remains a significant interpretive challenge in determining which mental state with those contents should qualify as the mental state present – and epistemically relevant – in all philosophers considering the cases. Too often F1 or F1* is assumed to hold for Gettier and all philosophers without providing any evidence to indicate that these disparate philosophers have reached a consensus on the source of evidence in philosophy.

We might resolve this interpretive issue by considering the post-Gettier literature in more detail. Although Gettier himself offers us little evidence of a reliance on intuitions, we might see clear cases when we turn our attention to others reacting to his work.24 The earliest responses, like Gettier’s own work, make little or no reference to intuitions (Clark 1963; Lehrer 1965; Sosa 1964). Consider, for example, Lehrer’s (1965) influential attempt to solve the problem. Like Gettier, Lehrer makes no explicit reference to intuitions and his statements are almost entirely of the form of simply stating that P. Lehrer qualifies various statements with “it might seem that…” or “this suggests that…” (170-171) but we have no reason to assume that such qualifications are intended as appeals to a distinctive kind of evidence. As will be discussed in more detail in chapter two, such qualifications are most reasonably interpreted as hedging terms indicating that the statement to follow is one that the author either explicitly rejects or endorses with hesitation. Such language is intended to lower the evidential weight of the assertion rather than provide a distinctive sort of positive evidence for the claim. Thus, it appears that the most immediate

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24 Note to self: Here would be a great place to do a semantic network analysis of ‘intuition’ in the post-Gettier literature.
responses to Gettier shed no light on which mental states, if any, Gettier treated as evidence for his conclusion.

As with each of the paradigm cases, three general responses are available. The typical response, in line with RWM, is to hold that Gettier was relying on intuitions as evidence, defined in some particular way. There is little textual support for this route, so if it will be justified it must be justified in virtue of the proposed definition best matching other paradigm cases. The second route, endorsed by Cappelen, is to argue that Gettier was not relying on intuitions as evidence (2012, 194). Cappelen gives two reasons for this interpretation. First, as noted, Gettier does not use ‘intuition’ or its cognates. This is a lack of evidence for RWM, but we should be careful not to interpret the absence of evidence as evidence for absence. Gettier may have been treating intuitions as evidence without explicitly using ‘intuition,’ as evidenced by his use of “it is equally clear.” Cappelen’s second reason is that Gettier provides an argument for the claim that Smith does not know. If Gettier’s evidence was the intuitiveness of the claim, then he would have no reason to provide an argument. This does seem to provide some evidence that Gettier was not relying on intuitions, but we cannot rule out the possibility that Gettier believed that the intuitiveness of the claim provided some evidence, but that more evidence is better than less, and so he presented an argument for the claim that he took to already enjoy pro tanto epistemic justification. The third response is to remain neutral on Gettier’s original intentions and methodology. I take this to be the most reasonable response. The original article provided scant evidence for any interpretation, and the immediate follow-up literature is no better. More recent interpretations of Gettier’s work only highlight the conflicting conceptions of intuition amongst contemporary theorists. The general lessons to learn from the Gettier case are that (1) meta-philosophers should refrain from citing Gettier and other theorists writing in the infancy of the
intuition norm as paradigms of philosophers relying on intuitions as evidence, and (2) contemporary philosophers interpreting early analytic texts should be careful to avoid importing their definitions and theoretical biases into the interpretive project.

Before considering other cases in detail, I pause briefly to explain in greater detail why Cappelen judges that none of these cases include an appeal to intuitions as evidence. His judgments regarding each case are based on the premise that intuitions have certain features. He claims that these features are special phenomenology (F2), based solely on conceptual competence (F3), necessary truths (F4), a priori (F5), non-inferential (F6), and evidence recalcitrance. With the exception of evidence recalcitrance I have discussed each of these in more detail above.\(^{25}\) By ‘evidence recalcitrance’ he means that philosophers would be inclined to accept the intuitive claims even if they had no good argument in favor of the claim or if there were some evidence against it. What Cappelen takes to be the general consensus on the nature of intuitions is that they have the F qualities rather than the F* qualities, but as seen a substantial number of theorists endorse F* descriptions instead. This is significant because his conclusion that philosophers do not use intuitions as evidence is only true if (1) the paradigm cases involve no reliance on F-intuitions, and (2) ‘intuition’ unambiguously refers to a mental state with F qualities. If the paradigm cases involve an appeal to intuitions as Cappelen has defined ‘intuition,’ then he is incorrect in claiming that there is no such appeal. If ‘intuition’ sometimes refers to mental states with F* features, then he cannot rule out the possibility that philosophers rely on intuitions as evidence by only showing the absence of appeals to mental states with F features. If ‘intuition’ can be reasonably interpreted as having F* qualities under some

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\(^{25}\)I did not include evidence recalcitrance in the list of conflicting views because I have found little evidence from the meta-philosophical literature indicating that intuition theorists take this to be a central defining feature of intuitions. Unfortunately, Cappelen does not provide any specific references in support of this feature, but nothing will hang on whether we include this feature in our evaluation of intuitions. To my knowledge, only Bealer (1998, 208) and Weinberg (2007, 320) endorse recalcitrance, and Goldman and Pust (1998, 179) disagree.
disambiguation of the term, then his conclusion that philosophers do not rely on intuitions may be too strong. In considering the following cases I will highlight where Cappelen’s F interpretation may be leading him to the mistaken conclusion that philosophers do not rely on intuitions.

1.3.2 Goldman on Fake Barns

Goldman offers the following account of knowledge: “A person knows that p, I suggest, only if the actual state of affairs in which p is true is distinguishable or discriminable by him from a relevant possible state of affairs in which p is false.” (1976, 774). In defense of this account, he presents a hypothetical scenario in which an agent perceives an actual barn in a region filled with non-barn facsimiles, and believes that what they see is a barn (772). It seems to most of us that the agent has a justified true belief but lacks knowledge. Goldman’s analysis accommodates this judgment, and this provides evidence in favor of the analysis. For present purposes, the question is why Goldman takes this hypothetical scenario and the corresponding judgment to provide evidence for his analysis. I will argue that Goldman’s text is most charitably interpreted along the lines of Goldman’s explicit characterization of intuitions. The report that the agent lacks knowledge is evidenced by a spontaneous (F6), conceptual (F3) judgment (F1*), and that the warrant conferred by the intuition is largely a posteriori (F5*). After presenting the evidence for this interpretation, I consider Cappelen’s argument for the conclusion that Goldman did not rely on intuitions as evidence. In considering this case, I aim to show that the textual evidence undermines both RWM and Cappelen’s rejection of RWM. Instead, I take this and other paradigm cases to provide evidence for the ambiguity of ‘intuition.’
Goldman holds that intuitions are categorization judgments and that they play an evidential role because what we are inclined to say about the cases informs us of the contours of our personal concepts (Goldman 2007, 15). One’s own intuitions in conjunction with the intuitions of others then provide a posteriori evidence for the nature of our shared concept. The most charitable reading of Goldman’s original essay matches his characterization of intuitions and suggests that they do play an evidential role in the argument. First, in setting up the cases he uses phrases like “most of us would have little hesitation in saying” and “we would be strongly inclined” (Goldman 1976, 772-773). After presenting two hypothetical scenarios, he asks: “How is this change in our assessment to be explained?” (773). This indicates that he takes what we would be inclined to say as evidence for or against philosophical analyses. This suggests an F1* reading, that the evidential mental states are beliefs, inclinations to believe, or judgments. Because Goldman appeals to what people besides himself would say, this evidence is not purely a priori, and hence this supports an a posteriori (F5*) interpretation of the evidential weight of intuitions. He is specifically interested in “the semantic content of ‘knows’” to get at a correct “analysis of ‘knows’” (776). This supports interpreting his uses of ‘intuition’ as referring to mental states with a conceptual etiology (F3). The fact that he expects the reader to have an immediate judgment of the scenario without first applying theoretical principles supports an F6 (spontaneous) reading of his use of ‘intuition.’

Before considering Cappelen’s view in detail, I will consider two objections to this interpretation. First, for each of these features, one could consistently claim that Goldman was relying on a different sort of mental state as evidence (e.g. F1, F5, F3*, and F6*). In interpreting

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26 Proponents of an a priori conception of intuitions may also be interested in the intuitions of others. An important difference is that Goldman believes that one’s intuitions alone only provide a priori justification for beliefs concerning a personal concept, and a posteriori evidence is required to know that one’s personal concept matches our shared concept.
Goldman as I have, my claim is not that the texts only admit of this interpretation, but rather than this interpretation is the most natural one. Staunch defenders of opposing conceptions of intuition can certainly appeal to the fake barns thought experiment as a case of philosophers relying on intuitions (as they conceive of intuitions), but such claims are not warranted on the basis of textual evidence alone. I suspect that each paradigm case of philosophers relying on intuitions as evidence is minimally consistent with every set of defining features. My purpose in considering these cases is not to consider minimal consistency, but rather to look for the most natural and unbiased reading of the texts. Second, one might object that we cannot infer any use of intuitions because Goldman never used ‘intuition’ or ‘intuitively.’ Absent this language, any claim that Goldman relied on intuitions is speculative at best. In response to this objection, it is important to note that Goldman was writing in the relative infancy of the intuition norm. He does not use ‘intuition’ or ‘intuitively,’ but this does not entail that he was not relying on intuitions or that he lacked any conception of intuition. By analogy, philosophers writing before Rawls’ introduction of the notion of reflective equilibrium may have been aiming at reflective equilibrium despite the lack of explicitly mentioning this phrase. As see above, Goldman’s developed meta-philosophical views are reflected in his early writing even though he did not use the word ‘intuition,’ and this provides strong evidence that he was relying on intuitions as evidence, at least according to one disambiguation of the term.

I will argue that this evaluation provides evidence for the ambiguity of ‘intuition,’ but this will only be seen after further paradigm cases have been considered. I hope to show that the most natural interpretation of each paradigm case points to a distinctive set of defining features such that, when taken as a set, the paradigm cases provide evidence for ambiguity. For now, I simply observe that this reading of the case provides evidence against some proponents of RWM
who disagree with Goldman on the defining features of intuition while nonetheless appealing to his treatment of fake barns as a paradigm case of philosophers appealing to intuition. I also take this case to provide evidence against Cappelen’s thesis that philosophers do not rely on intuitions as evidence.

Cappelen argues that no intuitions were evidentially relevant in Goldman’s use of thought experiments to defend his proposed analysis. Cappelen holds that a “careful reading of the text reveals no evidence that the propositions in question have these features [Rock Status, special phenomenology, and justified by conceptual competence]” (2012, 173). I will consider each of these in turn. In claiming that Goldman’s statements lack Rock Status, Cappelen means that they are not taken to have foundational justification such that no evidence need be provided in support. This is correct but nonetheless misleading. Goldman provides evidence in support of the propositions in question (in the first scenario, Henry does know, and in the modified scenario, Henry doesn’t know), but the evidence he provides coheres with Goldman’s conception of intuitions. The evidence is that people are generally inclined to endorse these claims, which coheres with his view that the intuitions of others provide a posteriori evidence for oneself in regards to the concept in question. Second, I agree with Cappelen that Goldman’s text provides no evidence for a reliance on mental states with a special phenomenology, but as seen above many theorists, including Goldman, are silent on the question of special phenomenology, and some explicitly deny that intuitions have this feature. Thus, the absence of phenomenology-talk is only evidence for the absence of intuitions if we assume that intuitions have a special phenomenology and that theorists will explicitly note the phenomenology whenever they appeal to intuitions as evidence. Both assumptions are problematic.
Finally, I judge that Cappelen is mistaken in suggesting that Goldman’s claims are not justified by conceptual competence. As seen above, there is significant textual evidence indicating that this is precisely the sort of justification that Goldman is after (1976, 776). Cappelen is aware of these recalcitrant passages with heavy psychological and conceptual language. He argues, however, that the most charitable reading of Goldman would have him relying on extra-mental facts as evidence rather than treating our inclinations to believe as evidence (2012, 174). Cappelen presumably takes this to be the most charitable reading because this interpretation of Goldman fits Cappelen’s own resistance to psychologizing the evidence in philosophy, but this is not a charitable reading of Goldman in light of the fact that Goldman himself fully endorses the psychologizing of the evidence (2007). Goldman’s primary goal is not, as Cappelen suggests, to understand knowledge, but rather to understand our concept of knowledge. This is why, after presenting the cases, he asks how “this change in our assessment” should be explained, rather than how this change in knowledge possession should be explained (1976, 773). Thus, contrary to Cappelen’s assessment, each element of Goldman’s developed conception of intuition is seen in his work thirty years prior. I conclude that Goldman’s case provides evidence in favor of the hypothesis that philosophers rely on intuitions, but only as Goldman defines the term.

1.3.3 Chalmers on Philosophical Zombies

Another often cited paradigm case is David Chalmers’ argument from the conceivability of philosophical zombies to the rejection of physicalism. A philosophical zombie is an organism that is physically identical to a normal adult human being but lacking conscious experience (1996, 94). As a rough sketch, the argument is that if zombies are conceivable, they are logically
possible, and if they are logically possible then physicalism is false. For those sympathetic to the argument, the basic evidence for his conclusion is the conceiving or the conceivability of a philosophical zombie. Because this case is taken to be a paradigm of philosophers relying on intuitions as evidence, I consider this evidence in detail. I will argue that Chalmers’ basic evidence is most charitably interpreted along the lines of Chalmers’ explicit description of (some) intuitions as post-reflection (F6*) conceivings or imaginings of a possibility (F1**).

Chalmers holds that the basic justification for his argument is the conceivability of philosophical zombies. As he observes, “I have a clear picture of what I am conceiving when I conceive of a zombie” (1996, 99) and “almost everybody, it seems to me, is capable of conceiving of this possibility” (96). This matches his later explicit characterization of some intuitions as a type of conceiving (2002, 155). He describes this conceivability as “a brute intuition,” (1996, 96) which seems to suggest that the intuition is a spontaneous rather than reflective judgment, but further considerations suggest otherwise. Chalmers grants that not everyone will find the zombie scenario conceivable, and for this reason he grants that it is a brute intuition, but the brutality of this intuition in the dialectic does not entail that it is epistemically brute. This is seen in considering his elaboration on what he means in claiming that zombies are conceivable. Chalmers holds that the relevant sense of conceivability for his argument is “conceivability on ideal rational reflection” (2002, 147). Thus, although not all readers will share his intuition regarding philosophical zombies, he argues that one would have the intuition after careful reflective deliberation. This suggests that Chalmers takes at least some intuitions to be reflective (F6*) rather than spontaneous (F6), and earlier considerations point towards a conceiving (F1**) conception of these intuitions. I will consider two opposing interpretations, that Chalmers was not relying on intuitions and that he relied on intuitions otherwise defined.
Cappelen argues that proponents of the intuition norm, including Chalmers, are mistaken in characterizing their own first-order theorizing. His argument is based on the observation that the seemingly brute intuition turns out to depend on a great deal of rational reflection. Because Cappelen has defined intuitions as spontaneous judgments with Rock status, he reasonably concludes that Chalmers did not rely on an intuition. The problem with this inference is that he assumes that ‘intuition’ is univocal and refers only to spontaneous mental states (F6) rather than post-reflection mental states (F6*). As seen, several meta-philosophers (including Chalmers) assume F6*. Although Cappelen is justified in concluding that Chalmers did not rely on intuitions with F qualities, his conclusion that Chalmers did not rely on intuitions under any disambiguation of the term is false.

One might also object to my characterization by holding that Chalmers’ basic evidence was an intuition understood along the lines of the F features. The most natural place to challenge my characterization is to hold that the intuition was not the conceiving or conceivability of zombies, but rather the proposition that zombies are conceivable. This reading would be more sympathetic to F1 (seemings) or F1* (beliefs). We can rule out F1* because Chalmers goes to great lengths to emphasize the non-doxastic imagining or conceiving mental states, but one might hold that the conceiving of philosophical zombies is a type of intellectual seeming. On this view, where Chalmers claims that he can coherently imagine zombies (1996, 100), what he means is that it seems to him, propositionally, that zombies can be coherently imagined. While one could consistently interpret Chalmers in this way, I believe that it ignores a crucial non-doxastic mental state that lacks explicit propositional content. It does seem to Chalmers that zombies are imaginable, but this seeming is not his basic evidence. That it seems that they are imaginable is justified by the act of imagining, and this imagining of the scenario is not itself an
intellectual seeming. If Chalmers was incapable of imagining the zombie world, he would not be warranted in claiming that it seems that he can imagine such a world. Thus, we should take Chalmers’ basic source of evidence to be the imagining or conceiving of this possibility.

I conclude this discussion by reiterating the conclusions drawn from the evaluation of Goldman’s paradigm case. In both cases, one could interpret the author as not relying on intuitions if one employs a very specific notion of intuition, but textual evidence suggests that the notion of intuition employed by these authors is one according to which they were relying on intuitions as evidence. One could also interpret Chalmers as depending on a notion of intuition other than his own explicitly stated notion, but the most natural reading of the text is one according to which some intuitions are conceivings or imaginings and generated post-reflection. As a final observation, the sense of intuition relevant in Chalmers’ thought experiment is different than the sense relevant in Goldman’s thought experiment, and this provides some evidence for the ambiguity of ‘intuition.’ Each paradigm case involves an appeal to some mental state as evidence, and ‘intuition’ does refer to these mental states under some disambiguation or another, but no single disambiguation of ‘intuition’ correctly applies to both cases. I will argue that the same conclusions should be drawn in regards to the trolley problem.

1.3.4 The Trolley Problem

The trolley problem, first introduced by Foot (1967), was most famously explored by Thomson (1985). This case is especially valuable for investigating the nature of intuition because it has been subjected to countless permutations and extensive empirical investigation. In the standard version of the story, what Thomson labels the Bystander at the Switch case, one happens to be standing at a train track where it splits into two tracks. Currently the rails are set to
track A, but one could switch to track B with a lever. Five innocent people are tied to track A, and one innocent person on track B. A train is approaching, and one may choose to do nothing (letting the five die) or pull the lever to redirect the train (saving five, actively killing one). After presenting this case, Thomson asks, “Is it morally permissible for you to turn the trolley?” (1985, 1395). Curiously, her initial answer to this question takes the form of a sociological observation: “everyone to whom I have put this hypothetical case says, Yes, it is.” After presenting this observation she transitions to stating that pulling the switch is permissible, without indicating how she inferred this conclusion from the general consensus. This is a common move in analytic philosophy, but it nonetheless presents an interpretive challenge. Is Thomson’s basic evidence her own judgment that pulling the switch is permissible, a non-doxastic mental state with the content that pulling the switch is permissible, the general consensus, or the non-psychological fact that pulling the switch is permissible? The answer to this question is relevant to the meaning of ‘intuition’ because intuitions are often taken to be the basic source of evidence arising from the consideration of such hypothetical scenarios. I will offer some reasons to think that Thomson’s use of ‘intuition’ is most naturally read as describing mental states with F1 (intellectual seeming) and F2 (special phenomenology) features, but it must be stressed that the textual evidence for both of these interpretations is fairly weak. Thus, I will argue that this case provides some modest evidence for the ambiguity of ‘intuition,’ and, more importantly, cannot be used as clear evidence for RWM. Following the structure of the previous case studies, after presenting my argument I will consider two objections. These are Cappelen’s argument that Thomson did not rely on intuitions as evidence, and a pro-RWM argument against my interpretation of Thomson. I conclude this section by considering the possibility that we might use empirical evidence from psychology or neuroscience to determine the referent of ‘intuition.’
Thomson’s use of ‘intuition’ is limited to a single passage near the end of her essay. Here she writes:

We might speak here of a “distributive exemption,” which permits arranging that something that will do harm anyway shall be better distributed than it otherwise would be – shall (in *Bystander at the Switch*) do harm to fewer rather than more… I do not find it clear why there should be an exemption for, and only for, making a burden which is descending onto five descend, instead, onto one. … [but] the exemption seems to allow those acts which intuition tells us are clearly permissible, and to rule out those acts which intuition tells us are clearly impermissible. (1985, 1408)

To place this passage in context, throughout the essay Thomson considers a variety of thought experiments varying on the general theme of killing one in order to save five (e.g. a doctor killing one healthy, innocent patient in order to save five). In some cases (e.g. standard trolley problem) she concludes that it would be morally permissible to kill the one, but in other cases (e.g. doctor killing a patient) she deems this impermissible. She addresses this apparent inconsistency in judgments by proposing a general moral principle, a distributive exemption, which accommodates Thomson’s initial assessment of the cases. This does more than just match Thomson’s own judgments. As seen above, Thomson appears to be concerned with what most people say about these cases. The passage above suggests that Thomson does not take this general principle to have independent plausibility. She is unsure of why this principle is true, except that it entails the correct conclusions regarding the cases considered. The correct conclusion, for Thomson, is the one that matches what “intuition tells us” about the cases.

This passage is open to multiple interpretations, but I think the most natural one supports the conception of intuitions as being F1 (intellectual seemings) and having F2 (special phenomenology). The justification for this reading comes from Thomson’s talk of what “intuition tells us” (1985, 1408). This is best understood metaphorically, but the metaphors used in characterizing intuition are helpful in coming to understand the literal meaning of the term.
Metaphorically, intuition is akin to a voice or an agent compelling us to agree with the propositions characterized as intuitive. This rules out the possibility that Thomson’s is thinking of intuitions as conceivings or imaginings, because conceiving of some scenario does not on its own tell us what we ought to believe. Her language is consistent with some versions of F1* (inclination to believe), but it appears to better cohere with F1 (intellectual seemings). According to proponents of F1, when one intuits that P it seems to one that P. This is a pre-doxastic state that cannot be reduced to a belief or inclination to believe. Thomson’s language suggests that she has in mind something stronger than a mere inclination to believe, because the metaphorical voice or command of intuition is a distinctive mental state. The metaphorical voice conception of intuition also strongly coheres with an F2 (special phenomenology) understanding of intuition. For these reasons I take Thomson’s one explicit use of ‘intuition’ to suggest an F1 and F2 reading, but it must be emphasized that the evidence presented here is rather weak. With this qualification in mind, I now turn to consider two objections to this interpretation.

Cappelen argues that, as with the previous cases, Thomson does not rely on intuitions as evidence. He has two reasons for this conclusion. The first is that Thomson proceeds to give arguments in favor of the moral permissibility of pulling the switch (hereafter, P), which shows that P was not independently justified (Cappelen 2012, 162). However, this does not follow. Philosophers, scientists, and people in general often provide reasons and evidence for claims that they took to already have sufficient evidential support. Thomson may have argued for P because she thought her readers would find no independent reasons for accepting P, but she may have argued for P because more evidence is better than less. It is possible that Thomson took the intuitiveness of P to provide some evidence for P while nonetheless wishing to give the reader
additional reasons to accept the claim. Thus, Cappelen’s first argument fails due to a lack of evidence to support his claim. His second argument will be considered briefly.

Cappelen’s second argument depends on a specific interpretation of what Thomson takes to be the intuition. As seen above, there are at least three textually motivated accounts of the intuitiveness of P. The intuitiveness may be constituted by Thomson’s own belief (or seeming) that P, the popular belief (or seeming) that P, or the fact that P. Thomson’s appeal to general opinion suggests that the intuitiveness is not constituted by Thomson’s personal belief alone (1985, 1395). We should also rule out the possibility that Thomson takes the intuition to simply be the fact that P, given her talk of what intuition tells us (1408). If we took Thomson to have this notion in mind, she would be claiming that P compels us to believe that P, and this is clearly not what she intended. Thus, we should understand the intuition as somehow related to the popular belief (or seeming) that P, but this leaves open two further interpretations. The first is that the intuition that P (as a mental state) plays an evidential role, and the evidential weight depends on how many people would have the relevant mental state upon considering the case. On this interpretation, Thomson observes the widespread agreement in order to tell the reader that P is strongly justified by intuition. The second, which I discuss in more detail in chapter two, is that the P’s intuitiveness is just P being generally accepted or in the common ground.

Cappelen’s second argument that Thomson does not rely on intuitions as evidence is based upon this second interpretation. He states:

The whole point of the paper is to question this conclusion [P] by contrasting it with the judgment about the doctor. So within two pages, that initial, pre-theoretical judgment is called into question. The goal of the paper is to look for reasons and evidence beyond the pre-theoretical judgment. (2012, 161)

Because Cappelen reads the intuitiveness of P to just be P’s being widely accepted, he assumes that the intuitiveness of P, in and of itself, provides no special evidence in favor of P. Thus, he
argues that Thomson does not take P to have any special evidential status and her purpose in this article is to provide reasons and evidence for the pre-theoretical, formerly unjustified beliefs. Rather, he holds that Thomson finds these pre-theoretical judgments to be puzzling and in need of critical evaluation. If Cappelen’s assessment is correct, no intuitions played an evidential role in Thomson’s article.

To address this argument, it will be helpful to reconsider the one place where Thomson makes use of intuition-vocabulary. As noted above, Thomson expresses hesitation and a bit of uncertainty in endorsing the proposed general moral principle. Her only reason for endorsing it is that it matches what intuition tells us is correct. This hesitation and uncertainty is never seen in regards to the case-based judgments, and at the end of her article she continues to endorse each of the intuitive claims while discovering a principle that she takes to be justified in virtue of its implications cohering with our intuitions. This suggests that Cappelen is misreading Thomson in claiming that her aims are to doubt the case-based judgments and then offer some independent evidence for their truth. The only evidence Thomson has to support the non-case-based judgments (the general moral principle) is that it matches the case-based judgments. This suggests that the intuitions are taken to have some special evidential status, and this in turn provides some reason to reject the interpretation of ‘intuition’ as merely that which enjoys general acceptance. This general acceptance is taken as a form of evidence, and the source of this evidential status is most plausibly the shared mental state (intuition) that P. Thus, I conclude that Cappelen is mistaken in concluding that Thomson was not intending to rely on intuitions as evidence.

One might grant that Thomson was relying on intuitions as evidence but object to my characterization of Thomson as relying on mental states with F1 (intellectual seeming) and F2
(special phenomenology) qualities. My case for this interpretation was based on a single passage, and the inference that she relied on F1 and F2 mental states was admittedly weak. Thus, it seems that a proponent of RWM endorsing an alternative conception of intuitions (F1* and F2*) could consistently interpret Thomson as appealing to intuitions in this sense. Thus, a careful investigation of this paradigm case does not undermine RWM and provides no evidence for the ambiguity of ‘intuition.’

As with the Gettier case, I wish to grant that any specific interpretation of Thomson’s intuition-talk or evidential basis will be highly speculative, but this does not support RWM. Recall that in considering the Gettier case we saw four distinct propositions that have been claimed to be the content of the Gettier intuition. Some interpretations presuppose F4 (modal content) while others presupposed F4* (modal or non-modal). Because Gettier himself offers so little evidence in favor of any particular interpretation, theorists interpret Gettier in line of their own theoretical commitments, and nothing in Gettier’s original work will settle this dispute. If Thomson’s discussion of the trolley problem were similarly absent of any indications of what she meant by ‘intuition,’ we would be in the same dialectical situation. This would provide evidence for the ambiguity of ‘intuition’ because theorists would have conflicting interpretations based on which defining features they presupposed. I suggested that we are better positioned to interpret Thomson because we have one passage in which she explicitly uses ‘intuition,’ and I argued that this passage is most naturally read as supporting F1 and F2. A proponent of F1 and F2 could take this as evidence in support of RWM with ‘intuition’ defined along these lines, but the proponent of F1 and F2 would still be obliged to explain away the more explicit intuition-talk in Goldman and Chalmers that opposes this version of RWM. A proponent of Goldman’s conception of intuition (F1*, F3, F6) could consistently interpret Thomson as relying on these defining
features, but I have found no evidence in the text to support this interpretation. To the extent that Thomson’s writing admits of any particular interpretation, it admits of an interpretation of ‘intuition’ that conflicts with the most natural interpretation of ‘intuition’ seen in Goldman and Chalmers. I conclude that a careful investigation of Thomson’s work provides weak evidence against RWM and in favor of the thesis that ‘intuition’ is ambiguous.

In section two I considered – and postponed – discussion of the possibility of discovering the nature of intuitions by appealing to evidence from cognitive psychology and neuroscience. One advantage of considering the trolley problem is that psychologists and experimental philosophers have extensively investigated the psychological mechanisms and processes implicated in the judgments we form when considering such moral dilemmas. These dilemmas include variants of the trolley problem (e.g. pushing someone off a bridge, being the train conductor, a loop in the track), seemingly analogous cases (e.g. a doctor sacrificing one patient to save five) and countless hypothetical cases in which various moral values are pitted against one another. Space does not permit a thorough evaluation of this literature, but it is worth pausing to consider how these experiments may provide evidence for or against the proposed defining features of intuition. In particular, some of this research is relevant to the dispute between proponents of F6 (spontaneous) and F6* (reflective).

Greene (2007) has defended a dual-process model of moral judgment according to which judgments are formed through neurologically dissociable cognitive processes. As a rough generalization, the first tends to involve more emotion and the application of heuristics. This process is thought to be fast, automatic, and implicated in deontological judgments. The second process involved rational deliberation and rule application. This process is thought to be slow, consciously controlled, and implicated in utilitarian judgments. This dual process model has
some independent support in cognitive science (Evans 2003, Kahneman 2003) and coheres with a great detail of evidence from studies on moral cognition and decision making (Cushman et al. 2006; Heekeren et al. 2003; Moll et al. 2001; Petrinovich and O’Neill 1993; Schnall et al. 2008; Suter and Hertwig 2011; Wheatley and Haidt 2005). Greene’s conclusion regarding deontology and utilitarianism has been challenged, rightfully I believe, by Kahane et al. (2011). The results of their fMRI investigation indicate that the differences found in many of these studies may relate to a distinction between intuitive and counter-intuitive judgments rather than between deontological and utilitarian judgments. Whether they are right to criticize Greene or not, all theorists in this debate would accept that (counter-) intuitiveness is part of the explanation of the different results. The intuitive judgments are those that are fast, automatic and do not depend on rational deliberation. This aligns with F6 (intuitions are spontaneous), but these studies are unlikely to settle the debate.

Kauppinen criticizes experimental philosophy for only capturing the “surface intuitions” (F6) rather than “robust intuitions” (F6*) (2007, 98). Were Kauppinen to use ‘intuition’ as psychologists use the term, he might instead argue that these studies tell us a great deal about intuitions, but nothing about the mental states relevant to philosophical discourse. Thus, although such empirical studies are highly informative and valuable in their own right, they are unlikely to settle the definitional dispute.

One might respond to this pessimistic conclusion by appealing to empirical evidence in conjunction with the Ramsey sentence considered above. Suppose that intuitions are those mental states, whatever they are, that play the rationalizing role when considering paradigm cases such as the trolley problem. To determine which mental states fit this description, we might point to research in cognitive psychology to support some definitional features over others.
problem with this proposal is that the current data is too incomplete and contentious to settle the
debate to the satisfaction of most intuition-theorists. Little work has been done on philosophers
in particular, and thus the skeptic may object that none of these studies tell us which mental
states are implicated in philosophers’ engagements with the thought experiments. Moreover, in
each of these studies one may arguably point to each of the Fs and F*s. None of these studies
distinguish between seemings and beliefs, or the a priori and a posteriori (F1/F1*/F5/F5*).
Participants are not asked to report their subjective experiences (F2/F2*). Conceptual
competence and modality may play an essential role, but this is far from obvious
(F3/F3*/F4/F4*). The one issue that these studies may weigh in on, spontaneity vs. reflectiveness
(F6/F6*), would require further investigation because subjects’ responses vary in their degree of
spontaneity, and we may only conclude that the spontaneous responses are the intuitions by first
assuming this defining feature.

Nado has recently argued, on the basis of evidence from psychology and related
disciplined, that ‘intuition’ refers to a “highly heterogeneous group” of mental states, indicating
that the meta-philosophical debate over the reliability of intuitions is significantly misguided
(forthcoming, 1). If her arguments succeed, the route to securing a univocal meaning of
‘intuition’ by reference empirical results is likely to fail. In this section we have seen the
difficulties facing such attempts with regard to interpreting the mental events related to trolley
problem intuitions, and the seriousness of these difficulties increases as we ask about the mental
states underlying our judgments in ethics, logic, epistemology, philosophy of language, and so
on. For example, Nado considers case studies of individuals with impairments to specific types
of mathematical cognition without any apparent deficits in other domains (McCloskey et al.
1985; Dehaene & Cohen 1997). Similarly, Nado cites evidence indicating that even with regards
to what may seem like a single mental process, such as deductive logical reasoning, several importantly distinct mental processes are related to different sorts of reasoning (Reverberi et al. 2009; Waltz et al. 1999). As Nado observes, similar remarks can be made regarding most sub-domains in philosophy. What may appear to be a single, unique type of cognitive process turns out to be several distinct processes that should be understood as at least partially independent. Psychological and neurological evidence pointing to several sub-systems underlying what we ordinarily call intuitive judgments does not show that ‘intuition’ or its cognates are ambiguous, but this does suggest that those seeking to show that ‘intuition’ is univocal will not receive any evidential support from such research.

1.4 General Remarks

I believe that similar remarks could be made about each of the purported paradigm cases of relying on intuitions as evidence, but my purpose here is not to analyze these cases. Rather, my purpose in presenting these cases was to demonstrate the difficulties facing anyone defending a unified account of intuition as a technical term. To summarize, the lessons to be learned from these paradigm cases are as follows: (1) intuition theorists are mistaken in assuming that all or most philosophers rely on a single type of mental state as evidence when they employ ‘intuition’ and its cognates, but (2) Cappelen is mistaken in arguing that intuitions play no evidential role in philosophy, and (3) empirical research on intuition (rather than ‘intuition’) cannot be used, currently, to determine the meaning of ‘intuition,’ even in conjunction with ramsification. The intuition theorists’ mistake rests on the assumption that philosophy’s intuition norm is unified,
and Cappelen’s mistake rests on the assumption that ‘intuition’ unambiguously refers to mental states with the F features.27

The most charitable interpretation of these cases suggests that ‘intuition’ is ambiguous between, at minimum, (1) an F reading, (2) an F* reading, (3) multiple hybrid readings, (4) the non-evidential hedging qualification, and (5) indications of general acceptance. It was objected that the disagreement seen in regards to definitions of intuition would disappear when we instead focused on particular cases, but as seen with Gettier the meta-philosophical disagreement regarding the nature of intuitions transfers over to how these theorists read the particular cases. As seen with Goldman and Chalmers, a careful reading of the particular cases indicates that philosophers import their meta-philosophical views on intuition into their first-order philosophical theorizing. Although these authors may be mistaken about their own methodology, all evidence from their respective works indicates that their first-order philosophizing matches their meta-philosophical descriptions. Analyzing Thomson’s text regarding the trolley problem revealed no additional evidence for any particular definition of ‘intuition,’ and appeals to existing research in cognitive psychology cannot determine the meaning of ‘intuition’ as a technical term in philosophy without begging the question. Thus, the method of fixing the meaning of ‘intuition’ as a technical term via definitions or paradigm cases fails.

In the following chapter I will consider three further sets of evidence for the conclusion that ‘intuition’ is ambiguous: the meaning and use of ‘intuition’ in ordinary language, communication network data on philosophy, and several tests for ambiguity from linguistics. I hope to show that the ambiguity of ‘intuition’ in ordinary discourse partially transfers over to philosophical discourse and that ‘intuition’ in philosophy can be disambiguated further by

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27 Additionally, Cappelen might be criticized for resisting the most natural F-features-friendly interpretation of specific cases.
considering the unique role that the term plays in philosophy’s sub-disciplines. From the evidence considered here and in the following chapter, I conclude that ‘intuition’ is ambiguous and consider some of the normative implications of this conclusion for meta-philosophers and philosophers more generally. I will argue that we ought to refrain from using ‘intuition’ in philosophical discourse, even if intuition is a legitimate source of evidence in philosophy.
CHAPTER 2

‘INTUITION’ IS AMBIGUOUS: FURTHER EVIDENCE

2.1 Ordinary Language

In the previous chapter I considered evidence from philosophers’ descriptions of the defining features of intuitions along with a handful of paradigm cases of philosophers relying on intuitions as evidence. I argued that these considerations suggest that ‘intuition’ is ambiguous in philosophy, because philosophers’ definitions point to two distinct conceptions and because the disagreements regarding definitional features were reflected in the paradigm cases (insofar as these cases gave any clear indication of the notion of intuition at work). In this chapter I will supplement this with further evidence for the ambiguity of ‘intuition.’ The previous chapter focused on evaluating the plausibility of establishing that ‘intuition’ is univocal as a technical term in philosophy. As seen, this route failed. Here I consider two alternatives. First, one might resist the conclusion that ‘intuition’ is ambiguous by holding that philosophers use ‘intuition’ as it is used in ordinary English. If ‘intuition’ is univocal in ordinary English, and philosophers use the term indiscriminately, then it would follow that ‘intuition’ in philosophical discourse is not ambiguous. I will argue that ‘intuition’ in ordinary English is ambiguous and that we have good reason to think that philosophers’ uses of ‘intuition’ do not match those of non-philosophers. Alternatively, one might resist the conclusion that ‘intuition’ is ambiguous by arguing that philosophers discriminately use the ordinary term. If this were true, then it would be possible for ‘intuition’ to have multiple meanings in ordinary language while philosophers use the term in a specific, univocal sense. Drawing from the evidence presented in chapter one, I will argue that philosophers’ use of ‘intuition’ and its cognates, while discriminate, is not univocal.
In addition to considering the use of ‘intuition’ in ordinary discourse, I consider two further sources of evidence: communication network data and linguistic tests for ambiguity. From a network analysis on philosophers’ interactions, I show that differing opinions on the nature of intuitions correspond to the opining philosophers’ position in philosophy’s communication network, indicating that one cause of the differing conceptions of intuition is philosophers’ exposure to different linguistic and methodological norms in the relatively linguistically isolated sub-fields of philosophy. This does not show that ‘intuition’ is ambiguous, but it goes some way in explaining why ‘intuition’ is ambiguous in philosophical discourse. I then consider several tests for ambiguity from linguistics. I will argue that intuition passes each of these tests, providing further evidence for ambiguity. After presenting this additional evidence, I consider some of the possible normative implications of this conclusion and respond to some possible objections to the conclusion that ‘intuition’ is ambiguous. In light of the observation that the ambiguity may be explained by meta-philosophers’ positions in professional philosophy’s communication network, the following chapter explores the uses of ‘intuition’ in a specific sub-field, material object metaphysics. I will argue that ‘intuition’ is generally used by metaphysicians to refer to pre-theoretical beliefs.

The case for thinking that ‘intuition’ in philosophy means what it does in ordinary discourse might run as follows. Plausibly, when philosophers use ‘intuition’ and its cognates they mean what is meant by historians, mathematicians, and the general public. In teaching introductory classes, professional philosophers are inclined to use ‘intuition’ and its cognates (‘seems,’ ‘intuitively,’ ‘we are inclined to believe,’ etc.), and I suspect that this is most often done without providing any definitions. This provides some prima facie evidence that philosophers’ uses of ‘intuition’ are near enough to the ordinary uses that no such definitions are
necessary. In contrast, nearby phenomena such as ‘a priori knowledge’ or ‘conceptual truth’ often require careful explanation. If this is right, we can dismiss the conflicting technical meanings of ‘intuition’ seen in chapter one and instead focus on ordinary use. Unfortunately, most intuition theorists do not specifically address the ordinary meaning, and those that do often mention the ordinary use only to clarify that they mean to be describing a distinct technical term. The one major exception is Herman Cappelen’s discussion (2012). Cappelen uses evidence regarding the ordinary use of ‘intuition’ to argue that the ordinary sense is non-evidential; hence, if philosophers are using ‘intuition’ in its ordinary sense, then intuitions are not evidence in philosophy. I will consider Cappelen’s arguments and argue that several of his claims are empirically false. After clarifying my disagreement with Cappelen, I will argue that ‘intuition’ in ordinary English is ambiguous and this ambiguity is found in philosophers’ uses of ‘intuition’ as well. I conclude by considering the possibility that ‘intuition’ in philosophy is neither a technical term nor merely an indiscriminate use of the English term.

Cappelen offers four general disambiguations of the ordinary uses of ‘intuition,’ ‘intuitive,’ ‘seems’ and other cognates. These are (1) ease, effortlessness, and spontaneity, (2) hedging qualification, (3) sixth sense, and (4) weak evidential indicator. I consider the first and second in the sub-sections to follow and evaluate them in light of evidence from case studies, lexicographical data, and semantic data mining. The sixth sense notion takes intuition to be a special, quasi-mystical extra-sensory method of knowledge acquisition. This is seen in some spiritual discussions and in reference to various special groups, e.g. a mother’s special capacity to know her children. I will assume without argument that this is not what philosophers have in mind with their use of ‘intuition.’ Cappelen’s fourth disambiguation, ‘intuition’ as a weak evidential indicator, is importantly similar to the hedging qualification disambiguation and will
be discussed in conjunction. After considering disambiguations one, two, and four, I proceed to consider the use of ‘intuitive’ in philosophy that uses such terms to designate that the proposition described as intuitive is in the common ground, generally accepted, or generally endorsed pre-theoretically. I conclude, first, that Cappelen’s characterizations approximate the ordinary meaning of ‘intuition’ and its cognates but are mistaken in some important respects, and, second, that the common ground interpretation is one on which intuitive judgments play a special dialectical role.

2.1.1 ‘Intuition’ as Easy, Effortless, and Spontaneous

Cappelen claims that the most typical uses of intuition suggest the following characterization:

… there is one feature that stands out when these cases are considered: there is some kind of ease, effortlessness, or spontaneity involved. Another way of putting this is that the acts involved don’t require a lot of reflection or effort. (2012, 33)

To justify this account, he offers several examples. He takes the paradigm examples of the intuitive to be operating systems, gadgets, melodies, singing, chess playing, basketball videogame passing, connections with people, and dance partnerships (31). Cappelen does not specify how or why he chose these particular examples, but he emphasizes that these are the sorts of things that ordinary speakers describe as intuitive. To make salient the contrast between ordinary speakers and philosophers, Cappelen claims that “it is almost impossible to find non-philosophers describing claims or points as intuitive,” but in philosophy this is the typical use (32). In ordinary English, he suggests, we most typically describe objects (gadgets) and physical activities (dance) as intuitive, but not intellectual activities (claiming or believing).
Fortunately, such claims about ordinary usage are easily tested empirically. The most straightforward method is to look in a dictionary. Although dictionary definitions are often unhelpful or misleading for the normative project of philosophical explication or analysis, the lexigraphical investigations justifying authoritative definitions are far more reliable than hand-picked examples or anecdotal evidence for the purpose of describing the ordinary use of terms.

The OED offers the following non-obsolete definitions:

1. Scholastic Philosophical: The spiritual perception or immediate knowledge, ascribed to angelic and spiritual beings, with whom vision and knowledge are identical.
2. Modern Philosophical: The immediate apprehension of an object by the mind without the intervention of any reasoning process; a particular act of such apprehension.
3. Immediate apprehension by the intellect alone; a particular act of such apprehension.
4. Immediate apprehension by sense; a particular act of such apprehension. (Esp. in Kant)
5. In a more general sense: Direct or immediate insight; an instance of this.

For the sake of understanding the ordinary sense of ‘intuition,’ definition (5) comes closest to the target. Contrary to Cappelen, this definition indicates that intellectual activities are the most typical sort of intuitive activity, rather than dancing or engaging with operating systems. One might suspect, however, that the OED is reflecting the more academic use of ‘intuition’ found in philosophy rather than the ordinary uses of the term, but other dictionaries offer similar definitions. Merriam-Webster presents the following disambiguations:

1. Quick and ready insight
2. (2a) Immediate apprehension or cognition
   (2b) Knowledge or conviction gained by intuition
   (2c) The power or faculty of attaining direct knowledge or cognition without evident rational thought and inference.

And, for ‘intuitive,’ the following definitions are presented:

1. (1a) Known or perceived by intuition: directly apprehended
   (1b) Knowable by intuition (intuitive truths)
   (1c) Based on or agreeing with intuition (intuitive responses, making intuitive sense)
2. Knowing or perceiving by intuition

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28 I am indebted to Jonathan Livengood for pointing out the obvious relevance of dictionary definitions on this point, and for the less obvious method, to be discussed shortly, of comparing search results.
(3) Possessing or given to intuition or insight

Both the OED and Webster point to a conception of intuition that favors cognition over physical activity or descriptions of external objects. This suggests that Cappelen is mistaken in claiming that philosophers are unique in using ‘intuition’ and its cognates to describe cognitive activities, but one might suspect that dictionary definitions of ‘intuition’ are systematically biased towards academic understandings rather than the ordinary use. To test for this possibility, we may compare the frequency of various cognitive and non-cognitive uses of ‘intuition’ and its cognates. This might be done by documenting conversations in public or in a controlled lab environment, but a more efficient method is to contrast the frequency of cognitive and non-cognitive uses of ‘intuitive’ in Google searches. The most common searches with ‘intuitive’ are ‘intuitive surgical,’ ‘intuitive eating,’ and ‘intuitive thinking.’ This suggests that the philosopher’s use of ‘intuition’ is similar to at least one disambiguation of ‘intuitive’ in ordinary English. To test the specific examples Cappelen offered, I paired ‘intuitive’ with each of his examples and received results below. Each result is labeled as P (philosophy) or O (ordinary speaker) to make salient which examples Cappelen takes to be typical (O) and which are purportedly unique to philosophers (P). Ranked in order of the number of hits, they are as follows:

O: “Intuitive operating system”: 3,320,000
P: “Intuitive point”: 94,400
P: “Intuitive belief”: 75,900
O: “Intuitive connection”: 71,200
P: “Intuitive concept”: 67,600
O: “Intuitive chess”: 42,500
P: “Intuitive claim”: 29,300
O: “Intuitive dance”: 6,080
O: “Intuitive gadget”: 4,330
O: “Intuitive singing”: 3,000
O: “Intuitive melody”: 2,250

29 Searches were conducted on 12/1/12.
The most common use from this sample is “intuitive operating system,” and thus Cappelen rightly offers this as an example of an ordinary use of the term, but these results suggest that he is mistaken in claiming that the philosophers’ use of ‘intuition’ and its cognates deviates radically from ordinary usage. Intellectual uses such as “intuitive belief” and “intuitive point” appear more often than any of the other examples he offers. Although philosophers may have a distinct conception of intuition, data from ordinary use of the term does not provide any evidence for this possibility. This data does, however, provide some support for Cappelen’s first disambiguation, that the intuitive is that which is easy, effortless and spontaneous. This is a natural reading of “intuitive operating system” and “intuitive connection,” and this same reading fits the more cognitive ‘intuitive’ phrases. This also matches definition (5) offered by the OED (direct or immediate insight) and definition (1) from Merriam-Webster (quick and ready insight).

Thus, I conclude that Cappelen rightly identifies easy/effortless/spontaneous as one disambiguation of ‘intuition,’ but is mistaken in suggesting that this use diverges from the philosophers’ use.

At least one disambiguation of ‘intuition’ in ordinary language refers to cognitive activities, as reflected by philosophers’ uses and definitions, and evidence from philosophical texts indicates that at least some uses of ‘intuition’ in philosophy also match the direct, immediate, quick and ready qualifications on this intellectual activity. Given that analytic philosophers often rely on technical, formal accounts, they often find it useful to offer the reader an intuitive (easy to understand) redescription of the formal account. For example, after
proposing a technical definition for what counts as a living organism, van Inwagen supplements the formal account with easy to grasp applications of the account in order to “give the reader an intuitive feel” for the technical notion (1990, 94). Another example, taken from Cappelen, is the following passage from Ted Sider:

The presentist describes the past and future using these and other tense operators. For example, he would describe the ordinary fact that there once existed a dinosaur by saying in his fundamental language:

\[(D) \ P \ (\text{there exists a dinosaur})\]

**Intuitively**, this means that the embedded sentence, ‘there exists a dinosaur’, is true with respect to some time in the past. However, the presentist denies that this intuitive gloss is any kind of metaphysical reduction. (2012, 160) (bold added)

The intuitive claim here is the quick, easy way to understand the more technical formulation of the claim. Although presentists would claim that the intuitive redescription is false, strictly speaking, the redescription is nonetheless a helpful, intuitive presentation of the idea because it is easy to understand. Similarly, consider the following observation:

**One of the most important arguments against physicalism is the so-called conceivability argument. Intuitively**, this argument claims that since certain statements concerning the separation of the physical from the phenomenal are conceivable, they are possible. (Diaz-Leon 2010, 933) (bold added)

Here Diaz-Leon presents the argument in an overly simplistic, easy to understand way that fails to include all of the important and nuanced steps in Chalmers’ argument, but nonetheless effectively presents the argument in a way that the reader can easily understand. As observed in considering Chalmers’ argument in detail above, the judgments relevant to evaluating his argument are not quick or easily to understand, but the technical notions can be explained intuitively. An analogous move in seen in Smith and Varzi’s discussion of geographic topology. After stipulating a technical definition of a logical operator that would likely confuse readers without a background in formal logic, they proceed to note that “this is to be understood intuitively as” two entities occupying the same location (2000, 416).
As one final example, consider Kripke’s use of ‘intuition’ throughout Naming and Necessity (1972). He describes intuitions as “direct” and “natural” (14, 15). This direct, natural form of cognition is the cognition that has meaning to “the ordinary man” (41). He speaks of “our intuitive idea” (4) and “what we would say” (119) (emphasis added). This is not to say that Kripke has this specific notion of intuition in mind throughout his writings, but at least some of his remarks lend themselves to an understanding of intuition as importantly related to cognitive processes which are easy, spontaneous, effortless, and accessible to everyone.30

This disambiguation of the ordinary sense of ‘intuition’ has important implications for the meta-philosophical disputes regarding intuition. As indicated by the anecdotal evidence above, many instances of ‘intuition’ and its cognates in philosophical writing are plausibly interpreted as referring to spontaneous, easy, and quick judgments. This provides some evidence that philosophers at least sometimes use ‘intuition’ as a non-technical term with the meaning of ‘intuition’ in ordinary English. This evidence coheres with the related facts that F6 interpretations (intuitions are spontaneous) are more common among intuition theorists, and that endorsement of F6 is a point of agreement between theorists who otherwise substantially disagree.31 This does not necessarily support the general F interpretation. Psychologists studying intuition generally assume that intuitions are spontaneous judgments, but they do not assume F1-F5 (e.g. Gopnik and Schwitzgebel 1998, 77; Kahneman 2003, 697). The disambiguation proposed here is fairly generic in that it only specifies that the judgment is formed easily and not based on any inferential process. As some theorists have noted, such a generic notion would not offer a satisfactory account of intuition in general (Nagel 2007, 793; Sosa 1998, 257).

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30 As with most authors, Kripke’s use is not univocal. For example, he notes that “Frege and Russell certainly seem to have” a descriptivist theory, and this is most reasonably interpreted as a hedging qualification similar to Gettier’s hedged claims about Plato’s view (Kripke 1972, 58).

31 Here I have in mind rationalists such as Bealer and Sosa and more empirically minded philosophers such as Goldman, Gopnik, Kahneman, Schwitzgebel, and Weinberg.
Nonetheless, I conclude with the modest claim that this evidence from ordinary use supports the view that something like F6 ought to be included in at least one of the disambiguations of ‘intuition’ as used in philosophy.

Before proceeding to the next disambiguation, it is worth pausing to consider what implications this has for meta-philosophers’ general assumption that intuitions play an evidential role in philosophy. Recall that Cappelen argues that philosophers in general do not treat intuitions as evidence. Although he concludes that philosophers’ usage deviates from the ordinary usage that he characterized as related to ease, effortlessness, and spontaneity, he does offer a brief argument for the conclusion that philosophers do not treat this sort of cognition as evidence. He writes,

If I tell you that $p$ is a claim that’s *easy to process* or *the answer you’d come to without thinking very carefully*, those are not features that in any relevant sense constitute a *source of evidence*… We philosophers, in particular, pride ourselves of being able to argue for views, to think carefully and systematically about everything. It is bizarre to attribute to us, as a group, the view that beliefs arrived at without careful reasoning should be of particular theoretical (as opposed to practical) value. (2012, 81-82)

I am sympathetic to Cappelen’s sentiment here, especially if this were interpreted as a normative claim about how philosophy ought to be conducted, but his conclusion is descriptive rather than normative. One difficulty present in Cappelen’s argument is that he appears to be combining descriptive and normative premises to reach a purely descriptive conclusion. He may be right that the easiness of a cognitive process is not relevant to whether that cognitive process should count as evidence, but this says nothing about whether philosophers in fact treat such easy cognitions as evidential. The descriptive evidence offered is that philosophers pride themselves on providing arguments for views. Notice, however, that this is consistent with the popular meta-philosophical view that our arguments take intuitive claims as premises and that these intuitions are not themselves inferentially justified.
As a descriptive claim, the conclusion is in conflict with most meta-philosophers descriptions of intuitions and much of first-order philosophical practice. F6 (spontaneous) is advocated by the majority of intuition theorists, and these same theorists take intuition to be a source of evidence. Their accounts are supported by the examples cited from Sider and Kripke. Kripke’s writing, in particular, points to a populist, anti-elitist conception of intuitions that might give priority to unreflective judgments over the considered judgments of philosophers. In praising the intuitive judgments of the “ordinary man,” in the same breath Kripke contrasts these with “a doctrine made up by some bad philosopher” (1972, 41). A plausible interpretation here is that Kripke takes our unreflective, pre-theoretical judgments to be more reliable than those judgments formed through a long chain of inferences that conflicts with what we would be naturally inclined to endorse. This is further supported by the observation that Kripke is concerned primarily with our linguistic intuitions, which are possessed by every competent speaker of the language and do not require substantial effort to uncover (10). For Kripke, these intuitions are the most “conclusive evidence one could have about anything, ultimately speaking.” (42). Thus, it is far from obvious that Cappelen is correctly describing philosophical methodology in suggesting that we do not treat easy to understand or non-inferential beliefs as evidence. At minimum, philosophers working in philosophy of language, like Kripke, take non-inferential beliefs very seriously.

A similar move can be seen in the Moorean argument (2004/1925). If a philosophical argument leads to a conclusion which strongly conflicts with what we are naturally,

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32 See Bealer (1998, 207), Goldman and Pust (1998, 179), Gopnik and Schwitzgebel (1998, 77), Kahneman (2003, 697), Sosa (1998, 257), and Weinberg (2007, 320). Each of these theorists take intuitions to be evidential in some sense, but it is worth noting that at least some of these authors (e.g. Gopnik, Kahneman, Schwitzgebel, and Weinberg) would grant that reflective judgments might be a better source of evidence.

33 Later in this passage Kripke is somewhat more explicit in contrasting intuitive judgments with the judgments of philosophers. He asks, “Now which one is being the philosopher, here, the unintuitive man?” (1972, 41). This suggests an identification of philosophers with being unintuitive.
unreflectively inclined to believe (e.g. that I have hands) we should give epistemic priority to the unreflective judgments over those reached by way of inference and argument. This move is only intelligible if we assume that the unreflective judgments have at least some evidential status. Thus, if we assume that these examples from Moore, Kripke, and Sider represent at least a sizable minority of the uses of ‘intuition’ in philosophy, we should conclude that (1) the easy/spontaneous/unreflective interpretation is one legitimate disambiguation, and (2) in at least some cases philosophers intend for these unreflective judgments to play an evidential role.

2.1.2 ‘Intuition’ as Hedging Qualification

The second disambiguation to consider is ‘intuition’ as a hedging qualification. In this sense, one reports “I have the intuition that P” rather than simply asserting P to qualify that one’s endorsement of P is weak, or at least somewhat weaker than if one had simply asserted that P. This is especially clear when we consider synonyms of ‘intuition’ such as ‘seems,’ ‘appears,’ and ‘suggests.’ Hedging qualifications are pervasive in philosophy, used far more often by philosophers than other academics (Hyland 1999). If ‘intuition’ and its cognates are used as hedging qualifications, this abnormally high use of hedging language by philosophers might partially explain why meta-philosophers insist that the centrality of intuition to philosophical discourse is obvious, and why this is what makes philosophy unique. But, if philosophers do use ‘intuitive’ and related terms to hedge various claims, we have additional reason for thinking that ‘intuition’ is ambiguous. As noted above, meta-philosophers generally only mention hedging language in discussing intuitions to make clear that they do not mean ‘intuition’ and its cognates in the hedging sense. For example, Bealer writes,
For you to have an intuition that A is just for it to seem to you that A. Here ‘seems’ is understood, not as a cautionary or “hedging” term, but in its use as a term for a genuine kind of conscious episode. (1996, 5)

If it should turn out that philosophers frequently use ‘intuition’ and its cognates as hedging qualifications, and if at least a sizable minority of philosophers follow Bealer in denying this meaning, then we should conclude that ‘intuition’ is ambiguous between at least two conflicting meanings. And there is good evidence that philosophers frequently mean to be hedging their claims with ‘intuition.’

The hedging sense of ‘intuition’ was seen in some of the paradigm cases considered in chapter one. Gettier’s article makes no use of ‘intuition,’ but he employs ‘seems’ in a footnote. He states, “Plato seems to be considering some such definition at Theaetetus 201, and perhaps accepting one at Meno 98.” (1963, 123) Here ‘seems’ is clearly used as a hedging qualification. Although Plato does not explicitly endorse the justified true belief account of knowledge, the passages suggest that he has this in mind. Here ‘seems’ is not used to provide any special evidential status to the claim, but rather to lower the evidential status of the claim. Similarly, Lehrer qualified various statements with “it might seem that…” and “this suggests that…” (1965, 170-171). As one final example, Korsgaard notes that, “Intuitively, knowing something because you remember it does seem more “direct” than knowing something because you are told.” (1989, 107). Lehrer and Korsgaard proceed to reject the claims that they qualified with ‘seem,’ ‘suggests’ and ‘intuitively,’ which suggests that they did intended to use intuition-talk to downplay the evidential significance of the claims. While these authors may still take the intuitive claims to have some evidential weight, in virtue of their intuitive content, they use ‘intuition’ and its cognates to suggest that this evidence is weak or defeasible. In general, such
comments are most plausibly interpreted as hedging qualifications rather than as an appeal to a
distinctive type of evidence.

It is an open question as to what extent philosophers’ usage of ‘intuition’ and its cognates
is best interpreted as hedging qualifications, but many uses are clearly not so intended while
some others are. When the hedging qualification is the most reasonable interpretation, we should
understand the intuitiveness of the claim as lowering the authors’ confidence in its truth, but this
is compatible with the intuitive judgment being treated as having some evidential weight. We
should not interpret such claims as implicitly referring to a particular type of mental state or
process as delivering the judgment. We describe a wide variety of claims with hedging
qualifications, in philosophy, mathematics, and the physical sciences, and there is no good
reason to assume that all of these utterances are caused by any particular type of mental state (cf.
Williamson 2007). “It seems to me that P,” understood as a hedging qualification, does not entail
that my belief that P is motivated by any particular mental state, but it does entail that I take
myself to have at least some evidence in support of P. One may use ‘seems’ to report an F1
(seeming) mental state, but as indicated above the term has several other potentially overlapping
uses, including the hedging-qualification use that is neutral in regards to the source of the
statement in question.

I conclude that ‘intuition’ and its cognates (most notable ‘seems’) are sometimes used as
hedging qualifications, but not always, and that this provides further evidence for the ambiguity
of ‘intuition.’ As a final caveat, the hedging use of ‘intuition’ is consistent with ‘intuition’ being
used to refer to a particular type of mental state. Suppose, for example, that one was generally
suspicious of one’s own a priori, modal, conceptual intuitions. One might then state, “I have the
intuition that P” and mean this both as a reference to intuitions (according to the F interpretation)
and as a hedged, qualified endorsement of P. Although this is an atypical use of ‘intuition,’ at least some hedging qualifications may still unambiguously refer to a distinctive mental state.

2.1.3 Discriminate Use of Ordinary Language

The above discussion has assumed that ‘intuition’ in philosophy is either a technical term with a meaning specific to philosophical discourse or that its meaning is simply that of ‘intuition’ in ordinary English. John Bengson (forthcoming) has proposed a middle ground between these two alternatives. On his view, philosophers use ‘intuition’ *discriminately* but non-technically. Prima facie, this suggestion is highly attractive. Philosophers are somewhat unique amongst academics in a number of ways. Thus, it would be unsurprising if it turned out that philosophers used ‘intuition’ and its cognates in a way deviated from ordinary usage, even if it turned out that none of the meta-philosophers technical definitions were accurate. On this view, although ‘intuition’ is not special jargon with a meaning unique to philosophers, it nonetheless has a particular meaning in philosophy. This is because philosophers have picked up on one particular disambiguation of ‘intuition’ in ordinary English and mean this specific sense when employing ‘intuition’ and its cognates.

Bengson’s proposed discriminate use of ‘intuition’ draws from Chisholm’s analysis of appearance-talk (1957; 1982). Chisholm distinguishes between three uses of ‘seems’: epistemic, comparative, and non-comparative use. His epistemic use is similar to the hedging qualification use discussed in section 1.2 (1982, 139). The comparative sense of ‘seems’ is used to indicate a similarity between two entities (A seems like B). The non-comparative use denotes how things appear to one (F1, seemings). Bengson argues that ‘intuition,’ ‘seems,’ and their cognates, when used by philosophers, are used to denote non-comparative intellectual seemings. If this is right,
philosophers’ uses of ‘intuition’ track a disambiguation of ‘intuition’ in ordinary English, and hence ‘intuition’ is not a technical term but nonetheless used discriminately.

Unfortunately, Bengson does not offer extensive socio-linguistic evidence in support of this claim. His evidence is limited to citing three authors: Bealer, Huemer, and Sosa. Although these authors “disagree about the nature” of intuitions, they nonetheless have converged on F1. I agree with Bengson that F1 is representative of some uses of ‘intuition’ in philosophy, but the evidence he offers does not sufficiently demonstrate that philosophers in general endorse F1 or that their uses all point to an F1 interpretation. Although Bengson, Bealer, Huemer, and Sosa endorse F1, we have seen that a larger number of meta-philosophers endorse F1* (belief or inclination to believe). Moreover, in Kunst and Kunst’s survey discussed above, the F1* definition was slightly more popular than the F1 definition. Bengson might object by claiming that these philosophers are mistaken about their own conceptions and use, but many of the texts considered above were more naturally interpreted as non-F1 uses. While I am sympathetic to the idea that philosophers use ‘intuition’ discriminately, rather than technically, this does not show that ‘intuition’ unambiguously refers to any one discriminate use. Rather, it appears that philosophers use ‘intuition’ and ‘seems’ in several discriminate, non-technical ways.

Consider the following observations. Philosophers are twice as likely as non-philosopher academics to reference shared knowledge in printed articles and five times as likely to explicitly reference the reader (Hyland 2005). One possible explanation for this is that the pervasiveness of intuition-talk is related to a relatively unique need for philosophers to establish some common ground with their readers. Unlike linguistics, psychology or physics, there is little that

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34 Shared knowledge references include phrases such as “we know that P,” “as we learned from Philosopher X, P,” and “we agree that P.” Explicit references to the reader overlap with these, but also include “you would say P,” “imagine that you are…,” and “If you accept P, you must also accept Q.” This data was taken from interviews with professional philosophers and a text set of 1.4 million words from academic articles.
philosophers can take for granted. Thus, it might be that ‘intuition’ is used to flag those claims which may reasonably be taken for granted and do not require further justification. If this is right, ‘intuition’ in philosophy is not a technical term, but it is also misleading to describe philosophers’ uses as completely matching ordinary use. I first consider three interrelated disambiguations of ‘intuition’ that fit this model. After considering these three I consider one further interpretation proposed by Bengson (forthcoming). For a generic intuition claim of the form “Intuitively, P,” we may interpret it in one of the following ways, amongst others.35

**Common Ground:** P is, I assume, common ground between me and my opponents, and so I will assume P in this context for the sake of argument.

**General Acceptance:** Although some philosophers may deny that P, I will assume P without further argument because P is accepted by most of my readers.

**Believed Pre-Theoretically:** While I acknowledge that many philosophers endorse theories that entail not-P, I am at liberty to assume P without argument because we were all inclined to endorse P prior to philosophical investigations.

These three are importantly related but worth distinguishing because they can come apart. For example, what counts as common ground in the context of a dispute between utilitarian ethicists need not be generally accepted. Similarly, what philosophers generally accept may be some theories or facts that are not believed pre-theoretically. As a simple example, one might assume the truth of evolutionary theory, though this is clearly not a pre-theoretical belief. Nonetheless, each of these marks an importantly similar rhetorical function. As Williamson observes, “When contemporary analytic philosophers run out of arguments, they appeal to intuitions.” (2007, 214) Or, when we run out of arguments, we appeal to the common ground, what is generally accepted, or what we are inclined to believe prior to philosophical indoctrination. This is not necessarily

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35 I have chosen to discuss these three interpretations separate from the earlier discussion of F1-F6* because these three are not obviously related to any particular type of mental state. Many of our pre-theoretical beliefs are modal, but others are not. Some a priori claims enjoy general acceptance, but so do many a posteriori claims. Similarly, the commitments that constitute the common ground between a philosopher and her interlocutor need not have arisen from any particular type of cognitive process.
problematic. We can only offer so many arguments, and at some point one must take something for granted to make any progress. I will later argue that philosophers ought not use ‘intuition’ in these circumstances, but the general practice of presenting premises that are not themselves supported by further premises is methodologically innocent and practically necessary. I now turn to briefly consider examples of each of these three in philosophical writing and consider what implications this has for how we ought to interpret ‘intuition.’ Because these three are relevantly similar my remarks on each will be brief.

As noted, philosophers are more likely than other academics to use ‘we’ in print. One common use of ‘we’ is in writing that “we have the intuition that P.”36 One example of this, from the epistemology literature, is Schmitt’s defense of reliabilism. In response to the relevance problem, he observes,

In judging whether a subject is justified in an inferential belief, we check to see which inferential process the subject exercises… We have the intuition that these are relevant processes to consider… Reliabilism may explain why perceptual or inferential beliefs are justified or unjustified by relying on these intuitions. (1992, 141-142)

In defending reliabilism, Schmitt appeals to a belief that he shares with his opponents, and this is evidenced by the fact that at least some philosophers critically responding to his argument acknowledge the claims Schmitt flags as intuitive (Conee and Feldman 1998, 19). This is a dialectically significant and frequent use of ‘intuition’ and its cognates. By flagging the claim as intuitive, in this particular sense, one reminds the reader that this claim is intended to be in the common ground. If this were not the case, one’s interlocutor could reasonably respond by denying that she has the intuition in question. Intuitions, so understood, play an important evidential role in philosophical discourse, but their counting as evidence does not essentially depend on them being in the common ground. If one’s interlocutor did not accept the claim

36 In a Google Scholar search for “we have the intuition,” 26 out of the first 30 articles were articles in philosophy.
presented as intuitive, it might still count as evidence in favor of one’s view. The special role of Common Ground evidence is simply that it may be presented as evidence without further clarification or justification.

The General Acceptance use plays a similar dialectical role. An important difference is that one’s interlocutor may not agree with the generally accepted claim. Nonetheless, when an author judges that the assumption in question is accepted by most philosophers, the commonly accepted methodological norm is that the burden of proof lies with the deviant philosopher. As one of many examples of the general acceptance use, Keith DeRose writes:

> Of course, when a speaker makes a claim that is, and is from her own point of view, false, her claim will be improper as well as false. But this impropriety cannot be used to buttress the intuition that the claim is false with the same security that one can use the appropriateness of a claim to reinforce the intuition that the claim is true, because there is not nearly as strong a presumption that inappropriate claims are false as there is that appropriate claims are true. (2009, 52) (bold added)

Just prior to this passage, DeRose uses “intuition” and “a general presumption” interchangeably, and towards the end of the quoted passage he flags the relative weakness of one of these intuitions by noting that there is a weaker presumption in favor of it. The General Acceptance sense of ‘intuition’ is typically used to signal which claims are relatively safe. Because professional philosophy is primarily a social engagement, and because the claims made by philosophers are so often contentious, it is important to have some device for telling one’s readers which claims are more or less contentious, and one of ‘intuition’s several roles is to fulfill this function. Such claims may by motivated by F or F* mental states, but nothing in DeRose’s text or the other texts considered indicates that either of these types of mental states necessarily underlie the claims in question.

Returning briefly to Cappelen’s work, it is worth pausing to consider whether general acceptance may itself be a source of evidence, given that Cappelen argues that intuitions in
general play no evidential role. I suspect that general acceptance does function as an independent source of evidence, but that this is unlikely to be salient to philosophers using ‘intuition’ in this sense. If we assume that human cognition is generally reliable, which may reasonably be assumed as a prerequisite for avoiding universal skepticism, then we have some prima facie evidence for the truth of any proposition that enjoys widespread belief. If the majority of people believe X, then, absent defeaters, I ought to also believe X. Regarding philosophical issues, we may wish to restrict the relevant domain to just philosophers. If we wished to limit the scope further, we may limit the set of relevant cognizers to just those that we take to be generally reliable. Even with this extremely limited scope the beliefs of others will give us some evidence in their favor.

As an example of this, consider the network representation in Figure 3 below. Bourget and Chalmers (forthcoming) conducted a survey of 3,226 professional philosophers regarding various questions in philosophy. Their survey included thirty main questions regarding philosophical issues. Participants were asked for their opinion on, for example, switching the trolley, belief in God, and the analytic/synthetic distinction. The results of this survey were then analyzed to identify correlations between participants’ answers. A high correlation between two answer choices means that participants who endorsed one of those views was more likely to endorse the other than survey participants in general. For all correlations of .1 or higher, an edge was created between those survey answers. The strength of the correlation is represented by edge width. Node color was determined by the relative popularity of the view, as designated below.

37 For detailed results, see http://philpapers.org/surveys/.
38 Correlation coefficients ranged from .1 to .56. Edge width was determined by multiplying each correlation coefficient by 10.
Figure 3. A network representation of philosophical theories (labeled items) with edges representing positive correlations of .1 or higher between those views as survey answers and edge width representing the strength of the correlation. Color indicates the popularity of these views, with red indicating the lowest popularity, black the moderately popular, and blue the most popular views.

See Appendix A for a key for the meaning of the shorthand denoting each view here. The specifics of the views are not significant for present purposes. The thought behind this representation is, first, that correlations are more meaningfully seen in clusters. As it turns out, not only are the correlations themselves non-accidental, but the correlations between the correlations themselves are non-accidental. If one believes in a priori knowledge, for example, one is more likely to endorse Platonism about abstract objects, the analytic/synthetic distinction, and epistemological rationalism. In regards to the evidential role of General Acceptance intuitions, we have seen two ways that general acceptance might provide one some evidence for
belief. The first depended simply of the general popularity of a claim. According to this standard, we have some reason to believe the philosophical views represented in blue above. The second way that others’ opinions might give one evidence restricts the set of relevant people to those that are relevantly similar to oneself. If we accept this standard, the above representation suggests that one who endorses naturalism, physicalism, consequentialism, and experience representationism has some reason to believe the B-theory of time simply in virtue of the endorsement of this view by likeminded philosophers. Thus, even if one restricts the set of relevant beliefs to those held by people who has similar beliefs, it will still follow that others’ beliefs give one evidence for or against various beliefs. Of course, this requires the assumption that philosophers like oneself are generally rational and form mostly coherent beliefs, just as one must accept some sort of general rationality on the part of humanity to accept that human cognition is generally reliable. Thus, contrary to Cappelen, I take this to indicate that the general acceptance of proposition P, by people in general, philosophers, or at minimum philosophers who think like oneself, gives one some evidence in favor of P independent of any other considerations. This does not, however, show that philosophers employing ‘intuition’ in the General Acceptance sense intend to be presenting the generally accepted claim as having a special evidential role. More plausibly, most philosophers do not have in mind such epistemological considerations and instead flag the proposition as generally accepted for the dialectical or rhetorical role of avoiding the need to justify the proposition.

The final disambiguation I will consider is ‘intuition’ as an indicator of pre-theoretical belief. In this sense, ‘intuition’ is used to indicate that some proposition would have been believed by one’s opponents, counterfactually, if they did not endorse the particular philosophical theories they do. Alternatively, the pre-theoretical claims are those that are
generally endorsed by everyone, regardless of their theoretical commitments. Something like this conception is endorsed by Goldman and Pust where they suggest that philosophers’ theoretical commitments may contaminate or warp one’s intuitions (1998, 183). As one example, consider the following passage from Burge in discussion his arthritis case.

I shall have little further to say in defense of the second and third steps of the thought experiment. Both rest on their intuitive plausibility, not on some particular theory. The third step, for example, certainly does not depend on a view that contents are merely sentences the subject is disposed to utter, interpreted as his community interprets them. It is compatible with several philosophical accounts of mental contents… (1979, 88)

Here, the intuitive claim is that which may be endorsed regardless of theoretical commitments.

As with Common Ground and General Acceptance, the pre-theoretical serves an essential role in making progress in philosophy. That a claim can be accepted by philosophers who disagree, which is to say, all philosophers, is a strong point in favor of that claim, dialectically. It does not, however, indicate that the claim in question has any special evidential status above the evidence provided by General Acceptance, and it certainly does not provide any distinctive support for an F or F* interpretation. The pre-theoretical beliefs include modal, non-modal, a priori and a posteriori claims. In addition, we have no special reason to think that the pre-theoretical must arise from a non-doxastic seeming or be justified conceptually, or that they could not have these features.

2.1.4 General Remarks on Non-Technical Interpretations

The ordinary use interpretations of ‘intuition’ provided further disambiguations of ‘intuition.’ At least some uses of ‘intuition’ by philosophers match the easy/unreflective sense, and others are plausibly interpreted as hedging qualifications. Although easy/unreflective is importantly similar to the F6 feature (spontaneous), many meta-philosophers endorsing F6 would
not accept that the examples noted in that discussion are examples of intuition (e.g. the inaccurate, easy to understand explanation of a technical notion). The hedging qualification is consistent with any of the proposed definitions, but it is unlikely that all uses of ‘intuition’ as a hedge will meet any one of those definitions, and this interpretation does not square well with the general consensus that intuitions are a primary source of evidence in philosophy. This suggests that ‘intuition’ is ambiguous in philosophy between the evidential uses noted in section 1.3 and at least two non-evidential uses. I considered three related uses of ‘intuition’ and its cognates by philosophers. Although these turned out to not be competing psychological descriptions of intuition, they indicate that many uses of ‘intuition’ by philosophers do not necessarily point to any sort of psychological state which is being referenced as a source of evidence. Rather, the evidential status of the intuitive claims under these three readings turned out to rely on other factors – the independent evidential status of the claim and the endorsement of that claim by others. I take the observations made thus far to provide very strong evidence that ‘intuition’ is ambiguous, but I will consider three further sets of data: communication network analysis, survey responses on the meaning of ‘intuition,’ and litmus tests in linguistics for identifying ambiguity.

2.2 Network-based Evidence and Linguistic Tests for Ambiguity

The considered definitions and paradigm cases indicate that philosophers have competing conceptions of intuition. In response to this evidence, one might argue that this disagreement is entirely benign and in fact a sign of a fruitful, flourishing meta-philosophical discourse. Although meta-philosophers strongly disagree, their disagreement is conducive to philosophical progress. However, if my evaluation is correct, it may seem to imply that meta-philosophers are
not actually disagreeing because they each use ‘intuition’ in a difference sense. The most charitable interpretation of their discourse is that they are disagreeing, and this spells trouble for my thesis. The discussion is fruitful precisely because they exhibit genuine disagreement, and it seems that this would only be possible if ‘intuition’ is not ambiguous. To address this concern, I will consider two additional sources of evidence: communication network analysis and tests for ambiguity in linguistics. This data provides additional evidence for ambiguity while also helping to diffuse the worry that ambiguity entails a lack of disagreement.

2.2.1 Communication Networks in Philosophy

While there is something to the optimistic response to meta-philosophers conflicting views, we can retain some optimism about the meta-philosophical discourse while holding that ‘intuition’ is ambiguous. By analogy, consider a case in which people strongly disagree about the meaning of a term that we all accept to be ambiguous. Some theorists insist that all banks are financial institutions while others insist that all banks are next to rivers. They are having a genuine disagreement, yet both claims are false. In contrast, when speakers in the wider linguistic community utter “all banks are financial institutions” and “all banks are next to rivers” they are not necessarily disagreeing because ‘bank’ is ambiguous. Similarly, intuition theorists are genuinely disagreeing in virtue of their shared mistaken assumption that ‘intuition’ refers to a single type of entity, but this is consistent with the ambiguity of ‘intuition’ in the wider linguistic community.

This analogy is odd because the bank theorists’ judgments are so obviously mistaken. A more natural analogy is to biologists’ uses of ‘gene.’ As noted in the previous chapter Stotz and Griffiths (2004; 2008) discovered that different communities of scientists use ‘gene’ in
significantly different ways, and they inferred that these communities have distinct gene concepts. In the century that has passed since the introduction of ‘gene,’ scientists have made considerable progress in understanding the function and structure of genes, but the extension of ‘gene’ depends on whether it is defined structurally or functionally. It is beyond the scope of this chapter to defend their conclusions regarding biologists, but I will assume their approach in philosophy of biology is appropriate. Following this same line of reasoning, if different groups of philosophers use ‘intuition’ in significantly different ways, the most reasonable conclusion is that they are employing distinct concepts.

One may object to this analogy as follows. Even if the distinct-concepts approach is appropriate in describing the use of ‘gene’ by distinct scientific communities, the use of ‘intuition’ by meta-philosophers is importantly different. The conclusions reached regarding medical geneticists and molecular biologists’ concepts is reasonable because these linguistic communities are sufficiently linguistically isolated and because scientists working in each field do not claim to be using the same concept as those working in other fields. This is seen in Börner’s (2010) analysis of scientific research communities, as represented in Figure 4 below.
Molecular biologists working within the BioChem community are significantly socio-linguistically isolated from medical geneticists within the Disease and Treatment community. In contrast, according to this objection, meta-philosophers, and philosophers in general, form a tightly connected linguistic community such that the ambiguity hypothesis is implausible. Participants in the meta-philosophical debate speak to each other frequently and cite the same paradigm cases of appeals to intuition. Thus, it would be uncharitable in the extreme to suppose that these speakers are not intending to refer to the same phenomenon. Their disagreement is genuine, and this could only be the case if they were attempting to describe the same phenomenon.

In response to this objection, I will provide evidence that the use of ‘intuition’ in first-order philosophical discourse is relevantly analogous to the use of ‘gene’ by distinctive linguistic communities in the sciences. First, as a general observation, the meaning of ‘intuition’ in philosophy is partially determined by the use of ‘intuition’ and its cognates by philosophers. A
complete analysis of philosophy’s linguistic sub-communities would require a careful investigation into patterns of citation, co-authorship, conference attendance, institutional membership, and semantic network analysis on the totality of the philosophical literature from the sixties to the present. This is an important project, but one that has yet to be done in totality. In the absence of complete evidence, I will offer some preliminary evidence based on citations in support of relative linguistic isolation amongst sub-communities in philosophy. Brittany Smith and I collected and analyzed 142,493 citations from 4,727 texts categorized by Philpapers.org under Objects, Ontology, Persons, and Realism and Anti-Realism. The value of this data in relation to the present question is to determine if philosophers’ stipulated definitions of ‘intuition’ correspond to their position within the communication network. If meta-philosophers’ favored positions correspond with their position in philosophy’s communication network, this would provide some evidence that (1) different sub-communities in philosophy employ ‘intuition’ in distinct ways, and (2) meta-philosophers’ sociological claims about how all philosophers use ‘intuition’ are at best a reflection of the use of ‘intuition’ by the minority of philosophers within their sub-community. This citation data only reflects a small minority of citations in philosophy, but it may nonetheless provide some explanation for meta-philosophers’ diverging conceptions of intuitions.

The network graph in Figure 5 below was created by filtering the citations to only include links between philosophers A and B where A cites B and B cites A. The reason for this is to focus our attention on communication ties. If A and B each cite the other, it is reasonable to assume a communication bridge between A and B, whereas a directed one-way connection is a

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39 Philpapers.org was chosen for the breadth of articles listed and their high precision in categorizing articles by topic. Citation data was taken from Google Scholar searches for each article categorized by Philpapers.org as objects. The dataset only includes those papers tagged as belonging to the objects category as of 9/5/12 and the ontology, persons, and realism and anti-realism categories as of 3/19/13. See Higgins & Smith (2013) for a more detailed analysis of the citations from articles categorized under objects.
less reliable indicator of communication. Citation patterns within this network (represented below) point to two large clusters of citations roughly corresponding to the ontology of mathematics (top) and material object metaphysics (center), along with three smaller clusters related to personal identity (left), applied ontology (bottom), and realism and anti-realism (right).

Figure 5. A representation of communication in material object metaphysics and related fields. Nodes represent authors, with the most significant authors labeled in black, green, blue and red in ascending order of significance. Edges represent a two-way citation relation between authors, with edge thickness representing the number of co-citations.

By analogy, A and B each following each other on Twitter is a far greater indicator of a significant social tie than A following B without B following A.
In this graph, edge width is based on edge weight, such that thicker lines represent greater co-citation, and label colors reflect authors’ relative significance in the network as determined by PageRank (> .2 red; .1-.19 blue; .07-.09 green; .04-.06 black). The following graph (Figure 6) is based on the same citation data and layout algorithm but highlights those philosophers cited in chapter one as endorsing some F/F* defining features for intuitions. Blue labeling represents endorsement of F features (e.g., intellectual seemings, conceptual etiology, modal content, special phenomenology) while red labeling represents endorsement of the opposing F* features.

PageRank is a recursive ranking algorithm that assigns values to nodes based on their centrality to and significance within the network.

One author, Yablo, has been excluded from this graph despite being cited as endorsing a defining feature of intuitions (F**, conceiving or imagining). I have chosen to exclude Yablo from this analysis because very few authors endorse F** and Yablo was not cited as endorsing any other definitional features.
Figure 6. A representation of communication in material object metaphysics and related fields. Nodes represent authors. Authors cited as defending certain defining features of intuition are labeled in red if defending F* features and in blue if defending F features.

As seen above, six authors within this citation network endorse F* features while only one endorses an F definition of ‘intuition.’ We should refrain from drawing any strong conclusions from this observation, because a sample size of seven authors is too small to know with any confidence that the authors in question form a representative sample. With that said, it is noteworthy that only one out of seven cited authors endorse the F definition, given that roughly half of meta-philosophers (and philosophers in general) are sympathetic to an F-like conception of intuitions. If these seven authors are representative of this linguistic community (ontology and related sub-disciplines), this would suggest that ontologists are significantly more likely than philosophers in general to endorse the deflationary F* conception of intuitions, and the relative socio-linguistic isolation of philosophy’s sub-communities may help to explain why we see
persistent disagreement regarding the defining features of ‘intuition.’ Due to the small size of the sample, we cannot draw any strong conclusions here, but this data suggests a method that could be applied to the wider philosophical community when further citation data is collected.

This evidence may be supplemented by network analysis of the entirety of philosophy. Using Philpapers.org’s categorization of papers into categories, we assigned author-category pairings for approximately 220,000 articles in 2,200 sub-categories. These were filtered down to just those article/category pairings for articles written by the meta-philosophers cited above as defending the F/F* definitions above. Intuition-categories (e.g. nature of intuitions, epistemology of intuitions) were removed because most or all of the target authors have written on these topics. This reduced the network to 2178 edges between 764 nodes (35 authors, 729 categories). The network was then folded to remove categories – that is, wherever authors A and B wrote articles in category C, C was removed from the analysis and an edge was created between A and B. The edge weight between A and B was set to the total number of categories in which both had published. The resulting network’s graph density (total possible connections divided by total actual connections) was .521, meaning that over half of all possible connections were realized. This is far too high to produce meaningful results, so the network was filtered down to only include edges with edge weight ≥3. This reduced graph density to .29, an acceptable level, but left some minor authors out of the analysis. None of these authors were major figures in the meta-philosophical debate, and thus this was judged acceptable. Author nodes were labeled as blue (F), red (F*) or purple (hybrid view or otherwise not a clear case of F or F*). Finally, authors with only one connection were removed, as one edge is an unreliable measure. The graphic representation of the network seen below in Figure 7 was created with the Fruchterman-
Reingold algorithm, with node distance sensitive to edge weight (5.0 repulsive force, 10 iterations).  

Blue = F Theorist  Purple = Hybrid Theorist  Red = F* Theorist

Figure 7. A network diagram of philosophers defending at least one defining feature of intuitions. Authors are colored to represent their views on intuition, with red indicating endorsement of F* features, blue indicating endorsement of F features, and purple indicating mixed endorsements. Edges represent authors having written on the same topic(s), with edge width representing the number of topics both authors have written on.

This significance of this graph is somewhat unclear. On the one hand, F and F* theorists do generally cluster, but, on the other hand, the groupings are not perfectly delineated along F/F* lines. Most F* theorists are found in a single group, but Kornblith is a clear outlier here. The hybrid views also clustered, but in two distinct clusters, and the same may be said in regards to F theorists. A priori, we should expect the nodes’ spatial proximity to track the authors areas of specialization, but not the authors’ definitions of ‘intuition.’ The network results suggest that

43 This algorithm was chosen because of its sensitivity to edge weight.
meta-philosophical views partially result from or are in some way related to one’s placement in the philosophical community. F, F*, and hybrid theorists form fairly distinct clusters, and this suggests that areas of specialization are in some way related to one’s preferred conception of intuitions.

A worry in regards to both this data and the citation data regarding ontology is that the relative closeness or co-grouping of authors is merely a function of their non-intuition related philosophical interests. For example, in the first graph Sider, van Inwagen and Lewis are found in the same cluster, and in the same can be said for van Inwagen and Lewis in the second, but this is most obviously explained by their mutual engagement with material object metaphysics and not their endorsement of an F* conception of intuitions. No doubt, their first-order philosophical interests are the most natural explanation for their close proximity within network representations, but, it is not an accident that the above graph depicts F and F* theorists clustered amongst themselves rather than randomly distributed throughout the network. For example, Alvin Goldman’s position matches his strong connections to traditional conceptual analysis (like F-theorist Sosa) but also reflects his empiricist leanings (like F*-theorist Kornblith). Bealer, BonJour, Huemer and Bengson are only minimally directly connected, but because of the overall structure of the network these four defenders of F1 (seemings) are clustered together. As a final observation, those authors with strong connections to psychology (Cummins, Gopnik, and Schwitzgebel) are spatially close while also endorsing similar conceptions of intuition.

A more complete network analysis may provide conflicting evidence, but the data collected thus far provides some support for the hypothesis that ‘intuition’ is ambiguous. This opens the possibility of applying the genes analogy to first-order philosophical discourse. The question of whether ‘intuition’ refers to a single mental state by all philosophers employing the
term will depend in part on the relative levels of communication links (or lack thereof) within philosophy as a whole. Given the moderate levels of isolation found in the ontology literature, it is reasonable to infer that philosophy as a whole may be sub-divided along the lines of communication networks, and this in turn opens the possibility that ‘intuition’ is used in importantly distinct ways within the various sub-communities. Non-citation based network analysis of philosophy as a whole suggested that a more detailed analysis of philosophy’s social network would vindicate this speculative hypothesis, but this support requires independent evidence to make the connection between network position and meta-philosophical commitments count as a genuine explanation. This was seen in regards to Goldman as a link between communication networks in psychology and traditional philosophy, and further evidence is found when we consider each of these groups on their own.

Recall that Cummins (1998, 119), Gopnik and Schwitzgebel (1998, 78), and Kahneman, Slovic, and Tversky (1982, 124) all endorse an F1* interpretation of ‘intuition’ according to which it is a doxastic state such as a belief, inclination to believe, or judgment. These five authors are also highly connected to discussions on intuitions in cognitive psychology. In this linguistic community, intuitions are generally conceived of in the deflationary F* sense, as spontaneous cognitive judgment without any specified phenomenology or modal content. This is not a coincidence. Because these intuition theorists work with psychologists, they take on the common practices of that field. In contrast, Bealer (1998, 208) and Pust (2000, 330) conceive of intuitions as non-doxastic intellectual seemings that cannot be analyzed or reduced to doxastic mental states. Both Bealer and Pust are explicit in rejecting psychologists’ use of ‘intuition.’

I do not aim here to discover what is meant by more colloquial use of the term ‘intuition’ or what disciples other than analytic philosophy mean by the term (Pust 2000, 30)
Many philosophers believe that the empirical findings of cognitive psychologists… cast doubt on their epistemic worth. But, in fact, although these studies bear on “intuition” in an indiscriminate use of the term, they evidently tell us little about the notion of intuition we have been discussing… As far as I have been able to determine, empirical investigators have not attempted to study intuitions in the relevant sense” (Bealer 1998, 211)

In these passages Pust and Bealer are not merely distancing themselves from competing accounts of intuition. In response to challenges from empirically minded intuition theorists, Bealer claims that either he or his opponents are changing the subject. There are, Bealer suggests, at least two senses of ‘intuition,’ at least one of which refers to mental states which are not the target of the psychological investigations cited by his opponents. Similar remarks are made by other proponents of an F conception of intuitions (Ludwig 2010, 430; Kauppinen 2007, 95). If some philosophers’ intuition concept is directly and robustly informed by psychological research on what psychologists take to be intuitions, and if other philosophers explicitly deny that their concept is that of psychologists, then the most charitable and reasonable interpretations of their uses of ‘intuition’ would be to treat these as distinct concepts.

2.2.2 Linguistic Tests for Ambiguity

To summarize the above evidence, it was found that meta-philosophers offer conflicting definitions of intuition. This observation would be of little significance, except that their competing definitions influence how they interpret concrete cases, and purported paradigms of first-order philosophical uses of ‘intuition’ are most charitably interpreted as relying on distinct conceptions of intuition. This evidence for the ambiguity of ‘intuition’ was supported by network analysis of philosophy’s communication structure and survey results on non-intuition theorist philosophers. Based on these findings, I will evaluate whether ‘intuition’ is ambiguous by
applying Adam Sennet’s (2011) four tests for ambiguity: conjunction reduction, ellipsis, contradiction, and definitional tests.44

The conjunction reduction test takes two sentences which each use a term appropriately and conjoins them. If the resulting conjunction shows the term in question to be zeugmatic (relating to other terms in different ways) then we may reasonably infer that the term in question is ambiguous. For example, Sennet notes that “The colours are light” and The feathers are light” are both appropriate, but the sentence “The colours and feathers are light” is zeugmatic.

‘Intuition’ would clearly fail this test for certain sentences that are irrelevant to the meta-philosophical debate. For example, we might contrast the following.

(1) **Mystical**: My intuition “picks up energy as thoughts… a soft streaming audio from the spiritual world.”45

(2) **Kantian**: My intuition represents that desk in front of me.

The resulting conjunction is that my intuition represents that desk in front of me and picks up energy from the spiritual world. This conjunction fails the test. Even if we accept that some mental state is a representation of a desk and some other mental state picks up energy from the spiritual world, there is an important difference between the mental states picked out by these two uses of ‘intuition.’ But neither Mystical nor Kantian are the sense of ‘intuition’ concerning meta-philosophers.

Moving closer to our target, consider the following comparison of what I have labeled rational and common sense intuition. To clarify, by ‘rational intuition’ I mean ‘intuition’ in the F-sense, as used by a rationalist philosopher, and by ‘common sense intuition’ I mean a use of

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44 These tests did not originate with Sennet. Rather, the article cited summarizes what Sennet takes to be the most canonical tests for ambiguity in linguistics. The most significant original article on this topic is Zwicky and Sadock’s ‘Ambiguity Tests and How to Fail Them’ (1975).

‘intuition’ that better approximates the F*-sense and is used to denote the common sense nature of the judgment described as intuitive.

(3) **Rational**: I have the intuition that “1729 is the smallest number expressible as the sum of two positive cubes in two different ways.” (Bengson, forthcoming, 4)

(4) **Common Sense**: I have the intuition that I weigh more than three pounds (Williamson 2007, 214)

The resulting conjunction is that I have the intuition that 1729 is the smallest number expressible as the sum of two positive cubes in two different ways, and that I weigh more than three pounds. I judge this sentence to be zeugmatic, but this is less obvious than the conjunction of (1) and (2). Whatever mental state is reported in (3), this is a distinct type of mental state from that reported in (4) in a way that makes the conjunction sound odd. The intuition that I weigh more than three pounds is an intuition in the sense that the claim is seemly obvious and known without any special expertise on the topic. In contrast, the mathematical proposition is an intuition in the sense that it is an immediate, intellectual grasp of the truth of the content of the proposition. In conversation with proponents of a rationalist or common sense interpretation of ‘intuition,’ I have been told that (4) is clearly not an intuition from the former, and that (3) is clearly not an intuition from the latter. Both parties found the conjunction of (3) and (4) to be importantly dissimilar from the paradigm case of ‘light,’ but their respective insistence that the other is misapplying the term suggests that this conjunction is zeugmatic. However, this is merely anecdotal evidence. If the reader judges that the conjunction of (3) and (4) sounds perfectly natural then this test will not provide evidence (for this reader) of ambiguity.

The ellipsis test is similar to the conjunction reduction test in that we evaluate the plausibility of various interpretations of a proposed sentence. Sennet (2011) offers the following example from Zwicky and Sadock (1975): I saw his duck and swallow under the table and I saw
hers too. “Duck” and “swallow” may be interpreted as birds seen under the table or as actions performed by the referents of ‘his’ and ‘hers.’ We may reasonably interpret the sentence either way, but it would not be reasonable to interpret the speaker as referring to his birds and her actions. This is some evidence that “ducks” and “swallow” are ambiguous. Similarly, consider:

(5) It seems to John that the moon is larger than the stars, and this is true of Martha as well. We can interpret ‘seems’ as a perceptual state, such that the moon perceptually appears larger to both John and Martha, or we can interpret it as an intellectual seeming (F1), but we cannot reasonably interpret the speaker as referring to John’s perceptual seeming and Martha’s intellectual seeming. This presents some evidence that ‘seems’ is ambiguous between a perceptual and cognitive interpretation. Now, consider the following.

(6) Frege relied on intuition in solving math problems, and so does my five year old sister. This sentence may be read in two ways, made salient by the contrast between an expert mathematician and a novice. The speaker may be claiming that both Frege and a small child solve math problems by relying on rational insight, or she may be claiming that both relied on a quick, unreflective and heuristics based cognitive process. We cannot interpret the ellipsis (i.e. the omission of ‘relied on intuition’) as indicating two distinct mental states, unless, as may be the case with the above sentence, an author is purposely drawing on the ambiguity of ‘intuition’ to make salient the contrast between two conflicting disambiguations. The same measure could be used without an ellipsis (e.g. I rely on intuition to solve math problems), but the ellipsis is helpful because it highlights the inappropriateness of using two distinct disambiguations when interpreting a sentence with an ellipsis.

The contradiction test takes a sentence of the form of X & not-X and determines whether the sentence can be reasonably interpreted so as to remove the contradiction. For example, the
The square is not square” appears contradictory but may be interpreted as consistent if we interpret it as saying that the town square does not have four sides. Applying this test to intuition, consider the following.

(7) Your intuition is not at all intuitive.

This can be reasonably interpreted as consistent. Paraphrasing, the speaker is stating that the reported judgment of her interlocutor conflicts with the more commonly held belief. ‘Intuition’ here should be understood as a doxastic F state, and its cognate, ‘intuitive,’ instead refers to common sense. As will be discussed in further detail in the following chapter, ‘intuition’ and its cognates are often used to denote those attitudes that are commonly held or accepted prior to philosophical theorizing.  

Personal beliefs or inclinations to believe can diverge from the generally held opinion, especially if our intuitions can change due to reflection and philosophical theorizing. However, one might instead interpret (7) as stating: You have the intuition that x, but I don’t. This would be a consistent interpretation that would not provide evidence for ambiguity. While this is a consistent interpretation of (7), this strategy would not succeed with similar remarks. For instance, Kripke states that “people who think the notion of accidental property unintuitive have intuition reversed” (1972, 42). It is not plausible to interpret Kripke as merely stating that his opponents’ intuitions differ from his own. Rather, he is making a claim about what is intuitive or unintuitive in general.

The final measure for ambiguity, the definition test, differs significantly from the previous tests. According to this test, we attempt to find a single definition that encompasses all uses of the term in question. If no plausible definition can be found, we have some prima facie evidence that the term is ambiguous. As a word of caution, this test is less helpful than the others

46 In particular, I will argue that this is the standard usage of ‘intuition’ and its cognates by philosophers specializing in material object metaphysics.
because, strictly speaking, a definition can be formed to encompass any disparate phenomena. ‘Bank’ could be defined as either the edge of a river or a financial institution, but this would not show that ‘bank’ is not ambiguous. To pass this test, a term must at minimum have a definition that strikes us as natural and not gerrymandered, but tighter restrictions are needed. One could define ‘bank’ to mean a physical entity with spatial dimensions. So defined, each use of ‘bank’ would fit the definition, but this violates the spirit of the test. Thus, in addition to excluding gerrymandered definitions the test must also exclude general definitions that include too much.

In regards to ‘intuition,’ the proposed F and F* defining features presented in chapter one suggest that ‘intuition’ will fail this test. No single definition can include all and only doxastic inclinations to believe and non-doxastic intellectual seemings. Similarly, we cannot define ‘intuition’ as referring to mental states that (a) have a special phenomenology and modal content and (b) lack any special phenomenology and may lack modal content. One might attempt to define ‘intuition’ by criteria other than those noted in F1-F6*, but this would be highly unlikely to pick out all and only intuitions. F1-F6* are defended as essential defining features of intuition. A definition could be proposed that included all of these conflicting notions by identifying intuitions as non-perceptual mental states typically related to or identical with the formation of philosophical judgments, but this would be inappropriate because it includes far too much. Any sufficiently narrow definition must include many of the mental states that a significant minority of philosophers takes to be their defining features. Hence, ‘intuition’ also fails the definition test.

One might suspect that the examples used above were too easy and not getting at the most significant uses of ‘intuition’ in philosophy. I considered a variety of uses, some of which are entirely irrelevant to the current discussion (e.g. Kantian and Mystical interpretations). The real test for ambiguity would be to look at sentences from philosophical articles, ideally the
paradigm cases, and determine if these pass or fail the test. In response to this challenge, it should be noted that this has already been done at great length. Four cases were considered in detail. Of those four, only Goldman and Chalmers’ articles used intuition-vocabulary unambiguously, but when looking at their works together it became clear that there must be at least two disambiguations of ‘intuition’ in philosophy. The excerpt from Kripke did not include any intuition-language, and Thomson’s use of ‘intuition’ is open to several interpretations. The sentences used above are better for these tests than any of the cited paradigms because these somewhat artificial sentences highlight the ambiguity that is implicitly present throughout philosophical writing.

The potential ambiguity of ‘intuition’ appears to be supported by these four tests from linguistics, but it should be emphasized that, on their own, this is fairly weak evidence for the ambiguity of ‘intuition.’ For each of the first three tests, one could reasonably interpret the considered sentences such that they do or do not pass the given tests for ambiguity, but I have argued that these tests provide some modest additional evidence for the ambiguity of ‘intuition.’ Going forward I will assume that I have demonstrated that ‘intuition’ is ambiguous, and hence that RWM is false, but the primary evidence for this was seen in chapter one and the earlier sections of this chapter rather than the specific evidence drawn from these tests for ambiguity. In the following section I proceed to consider the normative implications of this conclusion.

2.3 Normative Implications

I have considered evidence from meta-philosophers’ definitions, purported paradigm cases of philosophers relying on intuitions, ordinary usage, communication network data, and linguistic tests for ambiguity. From this evidence I conclude that ‘intuition’ is ambiguous and
thus does not refer to a single type of mental state. This conclusion does not on its own show that the common practice of using ‘intuition’ and its cognates is problematic. Nonetheless, I will argue that the evidence presented here should lead philosophers to avoid intuition-talk altogether, despite the fact that each disambiguation of ‘intuition’ refers to a legitimate source of evidence in philosophy. What I hope to have shown is that ‘intuition’ is ambiguous between several distinct meanings that diverge substantially: the Fs, the F*s, hybrid views, quick and easy judgments, hedging qualifications, and common ground. If this is right, then using ‘intuition’ in philosophical argumentation leads to significant dialectical confusion.

Whenever a philosopher intends to indicate to the reader that some proposition has the special evidential role of intuition, as that philosopher conceives of intuition, using the term ‘intuition’ is exactly what that philosopher should not do. Suppose, for example, that I follow Bealer and Chudnoff in conceiving of intuition as a rational, intellectual seeming that P, where this seeming has a particular phenomenology which is an indicator of the seemings’ special evidential status. I take this cognitive state to have modal content and provide foundational justification for believing that P. The majority of my readers will either (a) agree with my conception without knowing this, (b) unknowingly have a diverging conception of intuition, or (c) have no opinion about this meta-philosophical question. If my reader agrees, it would be advantageous for me to flag that I mean to indicate that the proposition in question has a special evidential status in virtue of being a rational, intellectual seeming. Without such qualification, readers who endorse the rationalist conception of intuitions cannot assume that I intend to refer to a mental state with F-qualities. The only safe interpretation is to remove the term altogether, given that the conflicting meanings differ so radically.
If the reader has an opposing conception, perhaps thinking of intuitions as empirical, theory laden, reflective judgments with no modal content, she may agree with me that P has some special justification in virtue of being of some related cognitive state, but the inclusion of ‘intuition’ into my argument has introduced a point of substantial disagreement where there was otherwise complete agreement. Unless the argument under consideration specifically regarded empiricism/rationalism or foundationalism/coherentism, using heavily theory-laden vocabulary such as ‘intuition’ unnecessarily complicates the argument by including additional theoretical stipulations that one need not accept prior to accepting that P. If it turns out that both my interlocutor and I agree that P is justified, independent of whether it is known a priori or a posteriori, then I gain nothing from including ‘intuition’ or its cognates. The third possibility is that my reader has no specific interpretation in mind. In this case, I could just as well remove all instances of ‘intuition’ and its cognates without changing the interpreted meaning of the text for my reader. Thus, regardless of one’s audience, we would be better off avoiding such uses of ‘intuition’ until the meaning is sufficiently uniform so as to avoid such complications.

2.4 Objections and Replies

I conclude by considering and responding to six objections in order of the seriousness of the challenge presented. The first two objections accept the first thesis of this chapter, that ‘intuition’ is ambiguous, but challenge the inference to the conclusion that philosophers ought to refrain from using ‘intuition’ and its cognates. The third challenges the meta-philosophical significance of the thesis. On this line of reasoning, discussion of ‘intuition’ is of relatively little significance, and we ought to instead consider the epistemology of intuition. The fourth aims to show that the reasoning presented here must be defective because this same reasoning could be
applied to a variety of philosophical notions that are clearly not ambiguous (e.g. perception or justice). The final two objections will challenge the thesis that ‘intuition’ is ambiguous.

The first objection is as follows. As a general sociological observation philosophical discourse is not complicated by such implicit theoretical baggage. Even if philosophers with different background commitments read ‘intuition’ in different ways, this rarely manifests itself as a real, practical problem for philosophers disputing whether P. The various uses of ‘intuition’ and its cognates fulfill a similar generic evidential role such that intuition-talk is entirely benign because no real harm is done. Throughout philosophical texts, at conferences and in ordinary discourse, philosophers use ‘intuitively’ in such an undifferentiated, generic way that the term has very little meaning. When we hear “intuitively blah,” we understand the speaker to be presenting a claim that is, as a rough approximation, pre-theoretical, generally accepted, not explicitly defended, and hedged as not entirely thought through. Any particular instance of intuition-talk may be lacking some of these features, but the various generic features are such that, practically speaking, there is very little risk of dialectical confusion in continuing this norm.

This objection rightly observes that, in practice, the substantial disagreement over the meaning of ‘intuition’ is rarely relevant to first-order philosophical discourse, but this makes salient an addition problem with our practice of using ‘intuition.’ If, for all practical purposes, ‘intuition’ is used as a generic evidential, then when philosophers state “I have the intuition that P,” they mean to be saying something like, “I endorse P, and, although I have not explicitly presented you with any evidence in favor of P, I have some reason for believing that P.” If this were correct, we would have all the more reason to refrain from intuition-talk. In philosophical discourse, as in ordinary discourse, there is a general presumption that people have some evidence in support of their stated claims. This is captured by Grice’s maxim of quality, which
requires that you “do not say that for which you lack adequate evidence” (1975, 46). If ‘intuition’ is used as a purely generic evidential, then its use would be superfluous because we expect, as a basic requirement of discourse, that people have some reason for believing what they assert. If intuition-talk is superfluous, then it violates Grice’s maxim of quantity, which requires that speakers provide no more (or less) information than is required (45). Grice’s reason for restricting extra information is that this extra information may lead to confusion or introduce irrelevant side issues (46). I suspect that both problems arise with the use of ‘intuition.’

The heated meta-philosophical debate over the meaning of ‘intuition’ is fueled by the common assumption that intuitions are the primary source of evidence in philosophy. Given this assumption, understanding the nature of intuitions is a necessary starting point for the epistemology of philosophy, but if ‘intuition’ only plays a minor, generic epistemic role, nothing could be further from the truth. Thus, if ‘intuition’ lacks specific epistemological relevance, the continued use of ‘intuition’ in first-order philosophy would engender further confusion and wasted effort by meta-philosophers. This alone should give us reason to avoid intuition-talk, but it is more likely that ‘intuition’ is intended to have specific epistemic significance.

The second way of developing this objection is that although ‘intuition’ is ambiguous and epistemically relevant, philosophy can and should proceed without carefully distinguishing between these distinct uses. For example, philosopher A may use intuition-talk to indicate that the view in question is justified by a priori rational insight, and philosopher B may interpret this intuition-talk as indicating that the view is justified by empirically informed hypotheses, but, the objection suggests, nothing of any philosophical significance hangs on which of these two justify the view in question. Epistemologists may have reason to make note of the distinction, but non-epistemologists engaging in first-order philosophy can and should continue debating the
questions in their respective fields without prefacing every discussion with their epistemological views.

I agree with the sentiment expressed in this formulation of the objection, but it does not vindicate intuition-talk. What this shows is that ‘intuition,’ interpreted in any one particular way, plays no legitimate evidential role in convincing one’s interlocutors. It may, and I suspect often does, play a subtle role in persuading one’s readers or audience, but this is a deceptive sort of persuasion that should be avoided in philosophy. The rhetorical role of a term that is ambiguous between several incompatible purported sources of evidence is to make every philosopher suppose that P is evidenced by the sort of evidence that he or she takes to be relevant, but nothing about ‘intuition’ and its cognates designates one sort of evidence or another. This problem might be overcome by specifying one’s meaning in noting “intuitively, P.” One might clarify that one means that P is known through rational insight, but in this case it would be better and more efficient to simply state that P is known by rational insight. As the objection observed, it would not benefit philosophy to include this tangent in every philosophical discussion, but we should not conclude from this that we should continue to use ‘intuition’ without clarifying the meaning. The best option for satisfying the practical constraints while avoiding confusion or deception is to simply assert that P without intuition-talk. When philosophers simply intend to provide a generic evidential qualification, this can be left unstated because of Grice’s maxim of quality. When philosophers find it relevant to consider the specific epistemic justification for their claims, they can point to rational insight or empirical evidence rather than using ambiguous terminology.

The second objection begins with the observation that ‘intuition’ is primarily a non-technical term in ordinary English. The conflicting technical definitions have only arisen over the
last thirty years and, to the extent that they disagree with ordinary usage, they also disagree with the common use of ‘intuition’ and its cognates in philosophy. ‘Intuition’ as a technical term or as used discriminately only has a derivative meaning, drawing from the far more common use of ‘intuitive.’ The intuitive is that which ordinary speakers and most philosophers describe as intuitive, and the definitions offered by the OED and Merriam-Webster are our best guide to understanding their meaning. According to these definitions, there is an unambiguous notion of cognitive intuitiveness with respect to claims, beliefs and judgments. Given that most philosophers use ‘intuition’ and its cognates unreflectively, the most reasonable interpretation of standard practice is that they use such terms in their ordinary sense. Based on these observations, we should not infer that ‘intuitive’ is ambiguous, and thus philosophers need not change their practice of employing ‘intuition’ and its cognates.

In response to this objection, I wish to first grant for the sake of argument that most uses of ‘intuition’ in philosophy roughly correspond to the ordinary sense of the term. This may vindicate most of the common practice in philosophy, but it does not vindicate all uses of ‘intuition.’ Philosophers such as Bealer, Goldman and Sosa continue to use ‘intuition’ in their technical sense, both in meta-philosophical discourse and in their first-order philosophizing. Thus, even if most philosophers’ uses were methodologically unproblematic on their own, at least some philosophers ought to refrain from employing these terms in the manner that they currently employ them. I suspect that the problem runs deeper than this objection supposes, as was indicated by the survey on philosophers, but even if the problem is restricted to meta-philosophers at least some philosophers should adjust their typical method of presenting arguments and cases. As noted in response to the first objection, the continued unreflective use by non-meta-philosophers motivates a misguided and fruitless meta-philosophical discourse.
Thus, even if ordinary philosophical use is benign on its own, first-order philosophers ought to restrict their use of ‘intuition’ for the sake of avoiding meta-philosophical confusion.

The third objection also grants the conclusion that ‘intuition’ is ambiguous while denying the meta-philosophical significance of this observation. Even if the above argument demonstrates that the use of ‘intuition’ is worrisome, this says nothing about the use of intuitions in philosophy. Our primary methodological concern should be whether intuition is a source of evidence in philosophy, not the word ‘intuition’ or how it might be misleading in certain contexts. If ‘intuition’ turns out to be ambiguous between several possible sources of evidence, then our concern ought to be on the epistemic significance of intuition₁, intuition₂, intuition₃, and so on, but the semantics of ‘intuition’ in ordinary English or even as used by philosophers is not meta-philosophically significant.

This objection is right to observe that epistemologists and meta-philosophers ought to consider the evidential role of a variety of mental states and processes for philosophical discourse. Debates regarding a priori insight, reflective equilibrium, categorization judgments, judgments based in linguistic competence, innate cognitive mechanisms, and a wide variety of other potential sources of justification are worthy of extensive discussion. But, this is not true of intuition because ‘intuition’ is a source of confusion and does not refer to any one source of evidence. For each possible disambiguation of ‘intuition,’ a good case can be made for its evidential value, but nothing of any real substance can be said about the evidential value of intuition. Much progress can be made in addressing the epistemology of philosophical methodology, but none of this progress requires that we discover the evidential status of intuitions. Quite the contrary, I suspect that we have done ourselves a great disservice by concurrently (1) holding that intuition is the primary source of evidence in philosophy, and (2)
investigating the epistemic credentials of intuition. As a field, philosophy almost certainly relies on a wide variety of types of evidence and mental states, and we do ourselves a great disservice by restricting our inquiry to the coarse-grain analysis of just one type of evidence or mental state.

An additional reason for not focusing on the evidential weight of intuitions, seen with the various non-technical uses, is that the most charitable interpretation of many instances of ‘intuition’ and its cognates in philosophy is to treat ‘intuition’ as playing an entirely non-evidential role. Although the proposition described as intuitive may count as evidence, and one may have much evidence in support of that proposition, often times the addition of ‘intuitively P’ adds no evidence that was not present in asserting ‘P.’ Thus, in general I believe philosophers have done themselves great harm in continuing to use ‘intuition.’ Although each of the particular semantic or dialectical roles of ‘intuition’ are valuable, we do ourselves a great disservice by continuing to use a single linguistic expression to fulfill all of these functions.

The present work is concerned with the semantics of ‘intuition’ rather than the epistemology of each disambiguation, but this too has meta-philosophical significance. Intuition receives a great deal of attention amongst meta-philosophers. If the arguments presented here are sound, this attention is unfortunate. Meta-philosophers ought to be addressing the epistemic significance of unreflective judgments, rational insight, non-inferential hypotheses, and the like, and any attention given to intuition is attention not given to more tractable, fruitful questions. To the extent that philosophers continue engaging in intuition-talk, they fuel this unfortunate rerouting of meta-philosophers’ attention towards less fruitful discussions. Thus, although I agree with the hypothetical objector that the epistemology of various specific mental states is of greater meta-philosophical significance than the semantics of ‘intuition,’ I also see good reason to carefully examine the semantics of ‘intuition’ in light of the current state of meta-philosophy.
The final three objections are more serious and require careful examination. Each of these challenges is aimed at the basic thesis that ‘intuition’ is ambiguous in philosophy, and if any of them succeed then the proposed normative implications do not follow. The first of these challenges is an argument by analogy. As evidenced above, meta-philosophers have opposing views on the central defining features of intuition, but similar observations could be made on any number of philosophically significant concepts. Philosophers strongly disagree on the central defining features of knowledge, morality and justice, yet we need not conclude from this observation that each of these terms is ambiguous. As a generalization, these philosophers take themselves to be engaged in a serious debate where there is a single target that they are all meaning to describe. An exceptionally clear analogy is the debate regarding perception. The F1 (seemings), F1* (doxastic states), and F1** (imagining) disagreement parallels the debate in the philosophy of perception regarding whether perceptual states are seemings, doxastic states, or imaginings. If the disagreement regarding intuition were sufficient evidence for ambiguity, then we should similarly conclude that ‘perception’ is ambiguous, but clearly this is mistaken. Thus, the reasoning that led us to conclude that ‘intuition’ is ambiguous must be mistaken.

This is a serious challenge. In response, I first observe that the case for or against the ambiguity of terms such as ‘intuition’ and ‘perception’ will depend on a wide variety of factors. Due to the complexity of language use, at least sometimes it will be an open question whether some term is ambiguous. In at least some cases, there will be substantial evidence pointing for and against ambiguity. In response to this objection, I will argue that there is some evidence for the ambiguity of ‘perception,’ but the evidence is significantly weaker than the evidence in support of the ambiguity of ‘intuition.’ If this is right, the objection rightly observes an
important similarity between ‘intuition’ and ‘perception,’ but the similarly is not sufficient to conclude that ‘perception’ is ambiguous or that ‘intuition’ is not.

It will be useful to briefly review the wider set of observations considered above. I began by citing six ways in which intuition theorists substantially disagree (F1-F6*). The objection rightly observes that the F1-F1** disagreement is also seen in the case of perception, but the presence of F2-F6* is an important disanalogy. To my knowledge, no philosopher of perception argues that perceptual states have any of the following features: F2* (not experienced), F3 (only produced through conceptual competence), F4 (necessarily have modal content), F5 (a priori), or F6* (based on reflection). The evidence for the ambiguity of ‘intuition’ was not merely that philosophers disagree on these six points, but that there is a meaningful pattern to their disagreement. As seen in the network representation of the views in chapter one based on philosophers’ endorsements of each feature, the F and F* features form two fairly distinct clusters, providing some additional evidence for ambiguity.

The case for the ambiguity of ‘intuition’ is stronger than the case for the ambiguity of ‘perception,’’ but I grant that the F1-F1** disagreement is some evidence to the contrary. In addition to considering meta-philosophers explicit views, I also cited a survey of 282 philosophers from the wider philosophical community. This survey provided corroborating evidence by showing that the F1/F1* disagreement was seen in the wider philosophical community, with approximately equal support for each definition. David Bourget and David Chalmers conducted a survey on 931 professional philosophers regarding their philosophical views, including their views on perceptual experience (forthcoming). The result was large support for representationalism (31.5%), and more limited support for qualia theory (12.2%), disjunctivism (11.0%), and sense-datum theory (3.1%). Unlike with ‘intuition,’ the survey results
for ‘perception’ indicate that one view, representationalism, is more popular than all of the alternatives combined. This mitigates the evidence for the ambiguity of ‘perception’ based on survey results. As with ‘intuition,’ however, I take this to provide some weak evidence for the ambiguity of ‘perception,’ but in both cases the survey responses are not definitive.

Definitions and popular opinion alone cannot settle the issue, and thus I turned to considering paradigm cases and the range of cases that intuition theorists classify of intuitions. As seen with physical and mathematical intuitions, intuition theorists do not agree on which real life cases involve intuitive cognition. For example, Bengson’s (forthcoming, 11) paradigm case of intuiting that 1729 is “the smallest number expressible as the sum of two positive cubes in two different ways” would not be classified as an intuition by many non-rationalist theorists. Prima facie, it seems that there is no parallel disagreement in regards to perception. Competing theories of perception seemingly aim to describe the same concrete phenomenon. An important exception to this is seen in regards to hallucinations. Disjunctivists, relationalists, and some naïve realists hold that hallucinations are not cases of perception, while qualia theorists, sense-datum theorists, and representationalists hold that hallucinations and veridical experiences equally count as perception. This supports the purported analogy between perception and intuition, but I believe that this provides additional evidence for the ambiguity of ‘perception’ in philosophy rather than showing that ‘intuition’ is unambiguous. For at least a substantial minority of perception theorists, “I see x” is ambiguous between a veridical and non-veridical reading of ‘see.’ ‘See’ can mean simply that one has a visual experience as of there being some x, but it might also be understood as entailing that the x in question actually exists.

I then turned to consider ‘intuition’ in ordinary language, investigating dictionary definitions, frequency of usage and further disambiguations that differed from those proposed by
A similar investigation of perception provides at least three indications that ‘perception’ and its cognates are ambiguous in ordinary English. ‘Intuition’ and its cognates (most notably ‘seems’) are used in ordinary English to express (1) easy, effortless, spontaneous activity, and (2) a hedging qualification of one’s endorsement. A similar ambiguity is found with ‘perception’ and its cognates. As with intuition-talk, one might state “I see a blue frog” to report a mental state, but one might also include ‘see’ as a hedging qualification to inform the listener that one does not actually believe that there is a blue frog. Perception-talk is ambiguous between experiential and cognitive readings. I can see a visual image, but I can also “see your point.” A third type of ambiguity in ordinary English is seen in this introductory philosophy question: if a tree falls in the woods, and no one is around, does it make a sound? The question is amusing and a useful introduction to philosophical thinking specifically because it plays on the ambiguity of perception language. On one disambiguation, there is no sound because there is no one to experience the crashing noise. On the other disambiguation, there is a sound because sounds are sound-waves, and the tree falling produces those.

The argument by analogy was presented to show that ‘intuition’ cannot be ambiguous because ‘perception’ is not ambiguous, but a careful look at the analogy suggests that this is far from obvious. There are some important disanalogies between ‘intuition’ and ‘perception’ such that the case for the ambiguity of ‘intuition’ is stronger, and there is some moderately compelling evidence suggesting that ‘perception’ is also ambiguous. I remain neutral on the ambiguity of ‘perception,’ but I take these considerations to show that the purported analogy between ‘intuition’ and ‘perception’ should not lead us to conclude that ‘intuition’ is unambiguous.

The fourth objection is spelled out by John Bengson in the following passage in which he defends the epistemic significance of intuitions in philosophy.
But there need not be only one such use, and there need not be only one such state or event. For example, it is open to proponents [of the centrality of intuitions to philosophy] to hold that there is a family of distinct but related states or events (e.g., *sui generis* seemings, presentations, attractions to assent, temptations to affirm, ...), and that all of the members of this family are legitimately regarded as intuitions, which are denoted by the relevant discriminative use(s) of ‘intuition’ and cognate terms. (forthcoming, 9)

According to Bengson, meta-philosophers are genuinely disagreeing, but the disagreement is not as drastic as I have suggested. F1 states like intellectual seemings and F1* states like attractions to assent are nearby phenomenon. When it seems to one that P, one is typically attracted to assent to P, and when we have an attraction to assent it seems that the proposition in question is true. Bengson himself denies that ‘intuition’ refers to F1* phenomena, but his point is that even if both F1 and F1* phenomenon were within the extension of ‘intuition,’ this would not show that ‘intuition’ is ambiguous. Philosophers’ moderately discriminate use of the term may still refer unambiguously due to a family resemblance between the relevant mental states. Many terms refer to a set of entities only related by family resemblance, and mental state terms often refer to several importantly distinct, related mental states. Thus, we should conclude that our concept of intuition is a family resemblance, prototype, or exemplar concept.

In response to this objection, I grant that ‘intuition’ would be unambiguous if the disagreements were limited to the examples he gives (*sui generis* seemings, presentations, attractions to assent, and temptations to affirm). These four descriptions have a family resemblance, but these examples only address the F1/F1* disagreement, and the evidence considered above points to more substantial disagreement. As seen in chapter one, in addition to F1 and F1*, at least some philosophers defend F1** (conceiving or imagining) and F1*** (affective states), and we also saw disagreement regarding phenomenology, etiology, modal content, a priority, and spontaneity. Additional worries were considered in regards to case studies, ordinary usage, survey data, and linguistic tests for ambiguity. Thus, the modest
disagreement that Bengson considers (and denies) is only one small part of the disagreement in practice. The family resemblance between a priori rational insight with a special phenomenology and empirically generated, non-inferential beliefs and hypotheses is not sufficiently strong to make ‘intuition’ unambiguous.

The final objection is motivated by the observations above regarding philosophy’s communication network. If the evidence for the ambiguity of ‘intuition’ comes in part from the socio-linguistic isolation of the sub-fields of philosophy, this suggests that ‘intuition’ is only ambiguous when we consider the philosophical community as a whole. Within each particular sub-discipline, ‘intuition’ has taken on a distinctive meaning that is well understood by philosophers within that field. Thus, philosophers are under no obligation to avoid the use of ‘intuition’ and its cognates. ‘Intuition’ has a clear meaning in any particular philosophical context such that the audience understands that the speaker means epistemology-intuition, ethics-intuition, material-object-mereology-intuition, mathematical-object-mereology-intuition, and so on.

Even so, however, one might worry that these distinct meanings still engender confusion. Using the mereology communication network as an example, although material object and mathematical object theorists cite within-group twenty times more than between-group, there is nonetheless some communication between these communities. Thus, if ‘intuition’ has a distinctive meaning within each sub-community, the weak communication bridge invites confusion. Rather than attempt to sever this communication bridge, we should instead develop specific, unambiguous terminology for each of the respective disambiguations of ‘intuition.’ The specificity requires will depend on the domain in question and the degree to which philosophers’ meanings diverge. The weak family resemblance between proposed definitions suggests that it
would be difficult to draw a clear line of demarcation between various uses, and it is highly unlikely that the common usage in one field do not influence the use in other fields.

Nonetheless, the suggestion of focusing our attention on the use of ‘intuition’ within a specific sub-field of philosophy is highly promising. Although we are likely to encounter many of the same problems and ambiguities present with philosophy in general, focusing on a specific sub-field makes is more likely to yield a more or less coherent notion of intuition. This is the project of the following chapter. In what follows I will consider the use of ‘intuition’ and its cognates in the material object metaphysics literature. Although the use of ‘intuition’ is far from monolithic even within this sub-community, I will argue that the most accurate general interpretation of uses by material object metaphysicians is that ‘intuition’ refers to our pre-theoretical beliefs. Making this notion more precise, I will argue that we should conceive of material object intuitions as those cognitive judgments that we have an innate tendency to endorse or act upon.
CHAPTER 3
INTUITIONS IN MATERIAL OBJECT METAPHYSICS

3.1 Distinctive Features of Ontology

The previous two chapters considered the use of ‘intuition’ and intuitions throughout philosophy. Intuition-theorists were shown to offer conflicting conceptions of intuition along six dimensions: type of mental state, phenomenology, etiology, content, a prioricity, and spontaneity. It was argued that these distinctions may be reasonably collapsed into a single dimension of disagreement between inflationary and deflationary conceptions. The present chapter narrows the focus to only consider intuition-talk in material object metaphysics. The central thesis of this chapter is that intuition-talk by ontologists concerned with material objects and persons comes closest to matching a deflationary conception of intuitions such that intuitions are best understood as pre-theoretical beliefs. These beliefs need not have any special phenomenology, and the only constraint on their content is that they regard material objects.\(^{47}\) They can be either a priori or a posteriori. In regards to etiology, ontologists do not require that intuitions derive from conceptual competence, but their use of ‘intuition’ indicates another etiological constraint.

I will argue for a nativist conception of ontological intuitions such that these intuitions are ontology-related judgments that result from an *innate or early developing physical reasoning cognitive system* (hereafter, simply *innate system*).\(^{48}\) According to this view, philosopher X’s

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\(^{47}\) Some of the relevant intuitions apply to topics in addition to material object metaphysics (e.g., the intuition that parthood is transitive may apply to abstract objects as well). In characterizing these intuitions as regarding material objects, I do not mean to suggest that they only regard material objects.

\(^{48}\) The disjunction between innate and early developing is not intended to make my thesis more generic or open ended. I will argue that our physical reasoning system develops during a very specific time frame (two to twelve months). I use the disjunct between innate and early developing in order to not take a position on whether a cognitive mechanism developed during this time frame counts as innate. My own view is that such early developing
ontological judgments based on reflection, deliberation, or theory application will count as intuitions only if these judgments could have been formed on the basis of X’s innate system. To clarify, the thesis is not that ontologists explicitly apply this innateness constraint when engaging in intuition-talk. Rather, the claim is that this feature of arising from an innate system is true of the vast majority of judgments that ontologists treat as ontological intuitions, whether they acknowledge this etiology or not. In addition to this primary argument, I will also show that the majority of ontologists treat general intuitions as having significant evidential weight but do not place significant evidential weight on case-based intuitions.

I begin by noting the methodological advantages of narrowing the investigation to only include a very specific sub-field. After considering the advantages of this approach, I consider what I take to be the most distinctive features of material object metaphysics that are relevant to the meaning of ‘intuition.’ This will involve a more in depth look at the functional and methodological role of intuitions in ontology. Throughout this initial discussion I assume that ‘intuition’ and its cognates refer to our pre-theoretical beliefs in ontology. I then defend this interpretation by considering definitions and paradigm cases. The definitions of ‘intuition’ put forward by ontologists are helpful but provide very little evidence because too few ontologists have explicitly written on this topic. In light of this, I turn to analyze the contemporary ontology literature. Based on this textual evidence, I will argue that ontologists’ evidential uses of ‘intuition’ are most charitably interpreted as referring to pre-theoretical beliefs generated by innate or early developing physical reasoning mechanisms.\textsuperscript{49} From this conclusion, I will argue

\textsuperscript{49} This is intended only to characterize evidential uses of ‘intuition’ and its cognates. Ontologists follow the trend in philosophy of occasionally using ‘intuition’ in a non-evidential sense (e.g. giving an inaccurate but easy to understand redescription of an accurate but complex statement).
in chapter four that the study of infant cognition is the best guide to understanding the nature of our intuitions regarding material objects and persons, and this will lead to normative implications about the role of intuition in ontology.

The primary goal of this dissertation is to investigate what role, if any, intuitions ought to play in philosophical discourse and theorizing. As argued in chapters one and two, ‘intuition’ is ambiguous in a way that is problematic for meta-philosophers studying intuition. These theorists seek to understand the proper role of intuitions in philosophy, but we cannot achieve this goal without first agreeing on the meaning of ‘intuition.’ One possible solution to this problem was suggested at the end of chapter two. The ambiguity of the term may be the result of partial linguistic isolation and epistemologically significant differences between the sub-fields within philosophy. If this is right, the ambiguity found in the wider philosophical community can be put aside if we focus our attention on one sub-field of philosophy. This is the first general motivation for focusing on material object metaphysics.

The second reason regards the current state of the meta-philosophical debate regarding intuitions. Twenty years ago Bealer (1987) and Stich (1985) disagreed on the relevance of psychological studies on intuition to the proper epistemic role of intuition in philosophy. As I argued in chapter two, this disagreement stemmed from their conflicting conceptions of intuition. Today, the same debate is seen in the experimental philosophy debates between experimental philosophers (e.g. Swain, Alexander, & Weinberg 2008) and their critics (e.g. Bengson 2013; Cullen 2010). Experimental philosophers have certainly investigated intuitions based on some disambiguations of ‘intuition,’ but the diversity of opinions and definitions makes it impossible for any empirical study to report on intuitions to the satisfaction of all parties in the debate. By
limiting our inquiry to one sub-discipline, we may avoid some of these disagreements and thereby benefit from existing empirical research.

More generally, debates between rationalist and empiricist conceptions of intuition appear to be at a stalemate. On Bealer’s view, intuitions are necessarily accompanied by a special phenomenology, but Williamson insists that he detects no special phenomenology upon introspecting (Bealer 1998, 207; Williamson 2007, 217). This impasse is reminiscent of the fierce debates between Titchener and Holt regarding color perception.\(^{50}\) Holt reported that he could have thoughts without experience while Titchener insisted, based on introspection, that some sort of sensation, feeling, or image must be associated with thought. Their disagreement could not be resolved with the methods at their disposal, and I suspect that the same roadblock is present in determining the phenomenal experience associated with intuiting. I will argue that in ontology there is very little evidence indicating that the phenomenology associated with cognizing that P is relevant to whether the cognizer is intuiting that P. This will be advantageous for moving past at least one stalemate in the meta-philosophical debate.

By narrowing our focus, we may put aside the distinctive interpretations of ‘intuition’ dominant in psychology, epistemology, or Kantian exegesis. Along with narrowing the set of relevant definitions, this will also help by narrowing the set of potentially relevant mental states. We need not consider mathematical, moral, and logical intuitions. Plausibly, the cognitive processes related to mathematical, moral and logical judgments are distinct from those related to judgments regarding the nature of the physical world.\(^{51}\) When I later turn to consider what role intuitions ought to play, this specialization will also be useful because different sorts of cognitive processes may be (un)reliable in each of the special sub-disciplines of philosophy. Along with

\(^{50}\) See Block, Flanagan, & Güzeldere (1997, 15) for a discussion of this debate.
\(^{51}\) Goldman argues for this point in greater detail (2007, 11).
narrowing the set of proposed definitions and concrete cases, this special focus avoids the possibility of conflating the distinctive rhetorical and epistemic purposes of intuitions and intuition-talk in the various sub-domains of philosophy. It may be that intuitions play a distinctive role in normative and descriptive sub-fields, and by limiting our inquiry we may avoid any issues that may arise in relation to the normativity of epistemology or political theory. The standard practices in ontology might be similar to the standard practices in other sub-fields of philosophy, so much of this discussion might apply to these other domains, but we should not assume that the linguistic and methodological norms in ontology are identical to those in other sub-fields prior to systematic investigation.

The role of intuition-talk and intuitions in philosophical sub-disciplines depends on the standard methodological norms in each sub-discipline. Thus, before investigating the unique role of intuition-talk in ontology I begin by considering the distinctive norms in this field. I will focus on six generalizations about ontologists that are particularly relevant to the role of intuitions: (1) commitment to realism, (2) rejection of conceptual analysis as the research paradigm, (3) endorsement of rationalism, a priori knowledge, and Platonism, (4) descriptive rather than normative projects, (5) little agreement on paradigm cases, and (6) majority support for views that seem to conflict with our case-based pre-theoretical beliefs. These relate to what ought to count as evidence in ontology and what is in fact counted as evidence by ontologists.

3.1.1 Targets of Ontology

The role that intuition plays, or ought to play, in ontology depends in part on the target of ontological inquiry. Generally speaking, we may distinguish between three categories of targets:
mind and/or language dependent facts, facts regarding a mind-independent physical world, facts regarding a mind-independent non-physical world. The first target, mind and/or language dependent facts, is the target of traditional conceptual analysis where the goal of philosophical inquiry is to clarify and better understand philosophical concepts. If this is the aim of most ontologists, then the goal is to better understand concepts such as OBJECT, COMPOSE, and PART. Similarly, philosophers pursuing this first path may be interested in knowing the truth of sentences such as ‘Objects are composed of parts’ rather than whether objects are composed of parts. If instead the goal is to know about non-conceptual, mind-independent natural entities, ontologists are primarily interested in knowing when some objects compose some other objects as proper parts, under what conditions objects persist through time, and so on. Under the third interpretation, the aim of ontology is to understand abstract entities such as the universals OBJECT, COMPOSE, and PART, again with an eye to their existence as mind and language independent entities. At least some ontologists pursue each of these goals, but I will argue that the majority of ontologists reject the conceptual analysis paradigm and the conception of ontology according to which “ontology recapitulates philology” (Quine 1960, vii). In presenting the argument that ontologists are not primarily engaged in conceptual or linguistic analysis, it will be helpful to clarify what these projects would look like. I begin by considering the conception of ontology as conceptual analysis and proceed to consider the view that ontology is in some important sense constrained by the ontology of ordinary English. The purpose of this section is to highlight that the targets of ontology are extra-mental, non-linguistic, and non-conceptual facts.

52 This list is inspired by Goldman’s distinction between natural kinds, Platonic forms, Fregean concepts, psychological concepts, and shared concepts (2007, 6). I have altered this classification to place less emphasis on concepts, because I argue that metaphysicists are not primarily concerned with concepts, and less emphasis on natural kinds (to include all natural entities without the theoretical complications related to natural kinds).
In chapter one I presented Alvin Goldman’s account of intuitions as an ideal fit for the conceptual analysis paradigm. On his view, mentalism, our intuitions should be treated as a basic source of evidence because they are reliable indicators of the nature of our concepts (Goldman & Pust 1998, 189). When we have the intuition that all physical objects must have a spatial location, our intuition is of the form ‘Every instance of P is an instance of S.’ The evidential value of these judgments, Goldman holds, is that they inform us as to the nature of our concepts of P and S. But, if this is right, it may be possible for one ontologist to correctly say, “all physical objects must have a spatial location,” and for another ontologist to correctly say, “some physical objects do not have a spatial location,” so long as these two philosophers were working with distinct concepts (physical object\textsubscript{1} and physical object\textsubscript{2}). Within analytic metaphysics, at least some philosophical puzzles have been addressed by first clarifying what we mean by various terms, but ontologists rarely take conceptual analysis to be the primary method for ontological inquiry, with a few notable exceptions. Amie Thomasson, for instance, holds that metaphysical truths are “object-language reflections of the rules of use for our terms (or their consequences)” (2013, 61). On this view, metaphysics differs from physics in that physics aims to “discover new facts in the world that will explain superficial observations,” whereas the aim of metaphysics, as Thomasson conceives of it, is instead to identify “certain linguistic/conceptual rules and reasoning through their relations and consequences” (61).\textsuperscript{53} As Thomasson observes, her approach is controversial and unpopular in metaphysics, because the general sentiment in metaphysics is that conceptual and linguistic analysis are too shallow to answer significant ontological questions.

\textsuperscript{53} Similar attitudes towards ontology are seen in Carnap (1950), but, as I argue below, these attitudes are not typical of contemporary ontologists. As a further contemporary defender of ontological anti-realism, see Yablo (2009).
A related but distinct approach would be to take ontology as aimed at discovering the meaning of the words ‘object,’ ‘compose,’ ‘part,’ and so on rather than analyzing their corresponding concepts. Putnam offers the following evaluation of mereological disputes: “… situations have many different correct descriptions, and… the notions of objects and existence, have a multitude of different uses rather than one absolute ‘meaning.’” (1987, 71). On this view, when one ontologist asserts that composites have their parts essentially and another ontologist denies this, they may be employing two distinct OBJECT concepts or using ‘object’ in two distinct ways and not, strictly speaking, disagreeing about the nature of the mind-independent world. They may, instead, simply be relying on two distinct definitions or speaking two distinct languages. More recently, Eli Hirsch has championed this sort of view by holding that ontological disputes regarding such issues as when composition occurs are merely verbal disputes (2005, 67). On his view, revisionary ontologists (e.g. nihilists and universalists) endorse theories that conflict with folk ontology “because they misinterpret the language” (2011, 101). Although ontologists generally believe themselves to be engaged in deep, important discourse regarding the nature of the world, Hirsch believes that “the issues being debated by revisionists are not deep; they are completely trivial.” (103) These issues are trivial, on his view, because they are settled by a priori knowledge concerning the English language.

My purpose here is not to evaluate Hirsch or any of the theorists expressing sympathies for an approach to ontology that gives primary weight to conceptual or linguistic considerations. Instead, the point is to emphasize that these views are only endorsed by a minority of contemporary ontologists. While Hirsch rejects the correspondence theory of truth (2011, 76), the strong majority of ontologists hold to this more robust conception of truth.54 The largely

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54 Based on data from Bourget and Chalmers’ survey, 64% of ontologists endorse the correspondence theory of truth, compared to just 51% of philosophers in general.
critical response to Hirsch’s account suggests that metaphysicians reject the methodology of grounding ontology in the truths of ordinary language (e.g. Kriegel 2011; Marsh 2010; McGrath 2008; Sider 2006). As Ted Sider observes, it would be a serious mistake to characterize most metaphysicians as engaging in conceptual analysis (2009, 385). Similarly, David Chalmers describes the majority of metaphysicians as “heavy-weight realists” who do not take themselves to be primarily aiming at conceptual or linguistic analysis (2009, 78). Metaphysicians are primarily in the business of describing the way the world is independent of our conceptual schemes and linguistic practices, although they are quick to note the advantages of making our pre-theoretic vocabulary more precise and appropriate for characterizing the mind-independent world. Similarly, van Inwagen holds that he should not be beholden to whatever reckless remarks are made by ordinary speakers. In his words: “I am not offering an analysis of common language. I am offering a metaphysical theory” (1990, 106). It may turn out that ontologists are unwittingly engaged in something like conceptual analysis, but their stated views show that this is not their intention.

We can therefore safely put aside conceptual and linguistic analysis as a general characterization of the methodological norms of ontology, but this leaves open two possible targets of inquiry: physical and abstract objects. The topic of inquiry, material object ontology, seems to point in favor of interpreting practitioners as interested in the nature of physical objects, but ontologists also show an interest in necessary or metaphysical truths that speak to more than just the nature of actual physical objects (e.g. Lowe 2011). Moreover, ontologists are more likely to endorse Platonism regarding abstract objects than other philosophers, meaning that we should not rule out the possibility that their concern is with the nature of both physical and abstract

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entities (more on this below). A minority of ontologists (e.g. Goodman, Lesniewski) explicitly reject abstracta, but in general ontologists are concerned with both physical objects and abstracta.

3.1.2 Beliefs of Ontologists

In addition to considering the targets of metaphysical inquiry, it would be useful to know the general theoretical perspectives of ontologists. As with any sub-discipline in philosophy, the views of theorists working in ontology are likely to span the entire breadth of logical space, but there may be some useful generalizations. The only formal, general study of philosophers’ views to date is Bourget and Chalmers’ survey cited in previous chapters. In this sub-section, I consider the reported views of ontologists in this survey to consider the distinctive theoretical commitments of material object metaphysicians.

Recall from chapter two that we were able to construct a map of philosophical views based on philosophers’ tendencies to endorse or reject views together. The views tended to cluster into two groups, what I labeled skeptical and optimistic views. The graph in Figure 8 below is identical to that presented in chapter two, except that this graph highlights the typical views of ontologists. This was determined by first considering the survey answers of all philosophers who made their views public (N=1322). This set was filtered to only include ontologists (N=69). Authors were identified as ontologists just in case they had published at least one book or article under the Objects category at Philpapers.org. Ontologists’ scores were averaged and then compared to the mean response of philosophers in general. In the graph below, those views which ontologists were more likely to endorse than other philosophers have been color coded (blue = +5-10%; purple = +10-15%; red = +15-20%). See Appendix A for graph keys for node label meaning and Appendix B for exact percentage comparisons.
Figure 8. A network representation of philosophical theories (labeled items) with edges representing positive correlations of .1 or higher between those views as survey answers and edge width representing the strength of the correlation. Color indicates the popularity of these views within the sub-group of survey participants who have published at least one book or article categorized by Philpapers under the category Objects. Views labeled in black were either less popular or not significantly different in popularity when compared with the views of philosophers in general; in ascending order, blue, purple, and red represent views that are more popular in this sub-discipline than in philosophy generally.

Under the assumption that the 69 authors represented here are indicative of the field in general, ontologists are significantly more likely to endorse views on the non-skeptical end of the spectrum, and in particular rationalism, dualism, and realism in a variety of domains (e.g. aesthetics, morality, God, laws of nature, science, logic, and personal identity). This commitment
to realism coheres with ontologists’ rejection of conceptual analysis for ontology. Their interest lies in the objective facts about the world independent of our conceptual schemes.

It is worth briefly pausing to consider the three exceptions to the general trend to endorse non-skeptical views: consequentialism, the B-theory of time, and denying free will. Speculatively, I suspect that the tendency to endorse all three stems from a more general tendency to answer philosophical questions from an agent-neutral, reductionist perspective. Consequentialism downplays the separateness and moral significance of individuals while reducing moral facts to natural facts concerning the consequences of our actions; the B-theory of time downplays the privileged nature of the time experienced by the subject and reduces all times to a single type; hard determinism denies or downplays the significance of personal choice while reducing agent causation to ordinary physical causation. The tendency towards agent-neutrality and reductionist approaches appears to be the one respect in which ontologists deviate from the general non-skeptical perspective. This is significant in relation to the present inquiry because, as we will see, ontologists also tend to downplay the significance of their case-based intuitions. Like consequentialists, they prefer general principles over our judgments regarding hypothetical scenarios. They give preference to something like what Nagel called the “view from nowhere” (1986). From this perspective, one gives strong preference to theories that mirror the best theories in science and mathematics. These have the theoretical virtues of simplicity, widespread application, strong internal coherence, and a strong commitment to the scientific worldview. Plausibly, these virtues are seen in consequentialism, the B-theory of time, and the denial of free will.
3.1.3 Evidence in Ontology

In this section I consider what sorts of facts or mental states ontologists typically treat as evidence. I will be especially concerned with the evidential role of intuitions. For present purposes, I assume that ‘intuition’ refers to judgments people are inclined to make (upon prompting) prior to philosophical reflection and theorizing. Regarding the role of intuitions, ontology stands out on two counts. Unlike most other sub-disciplines in philosophy, the majority of ontologists endorse highly counter-intuitive views, and, in connection to this observation, ontologists rarely agree on the paradigm hypothetical scenarios. In contrast, in many other sub-disciplines the adequacy of a theory is strongly related to how well it matches our case-based intuitive judgments (Maudlin 2007, 146). I will first lay out some of the most popular views in ontology under the headings of conservativism, eliminativism, and permissivism, and then show why the popularity of the revisionary views has led ontologists to disagree with each other and with intuition when it comes to the paradigm cases and thought experiments. This will have implications for the role of intuitions in ontology because most ontologists willingly grant that many common sense claims regarding hypothetical scenarios are intuitive, but they nonetheless hold that intuitive claims are false because of their more general theoretical convictions.

Before considering ontologists views in more detail, it will be useful to more carefully define the distinction, made throughout this chapter, between general and concrete-case intuitions. This will be important because I will argue that ontologists give significant evidential weight to general intuitions but very little weight to our concrete-case intuitions. As a first pass, general intuitions are those pre-theoretical judgments that are abstract and have broad ranging application. Examples include Leibniz’ law and the anti-co-location principle. These contrast with concrete-case intuitions, such as the judgment that there exists a chair in this room. This
distinction will turn out to be epistemologically significant, but there is no clear line of
demarcation between the two categories. As an example, consider this intuitive judgment: if
there are atoms-arranged-chair-wise, then there are chairs. This is more general than the intuition
that there exists a chair in this room, but more concrete than the paradigm of a general intuition. I
will focus on the paradigm cases on the extreme ends of the spectrum and remain neutral on
exactly where to draw the line between the two categories. This distinction will be further
clarified in section two in considering how it functions in relation to methodological differences
between generalists and particularists, and in chapter four when considering how it relates to the
findings of developmental psychology.

We may distinguish between three general views regarding material composition:
conservativism, eliminativism, and permissivism. Each of these views is closely related to a set
of answers to the Special Composition Question (SCQ) (van Inwagen 1990, 30). SCQ asks:
under what conditions do some objects compose some further object? In line with
conservativism, one might answer the SCQ by holding that composition occurs whenever we
think it occurs. That is, the set of existing material objects roughly corresponds to what we take
to exist prior to metaphysical theorizing. This includes the posits of common sense and science
(e.g. corporations, people, chairs, and quarks), but no strange kinds. Strange kinds will be
discussed in more detail soon, but as a first pass they are objects purported to exist by
permissivists that we would not ordinarily countenance. Conservativism is anti-revisionary and
its proponents typically hold that we should trust our intuitions regarding what objects exist and
when composition occurs. \[^56\] This is a particularist view insofar as our case based judgments in

\[^56\] It has been objected that Lynne Rudder Baker and Crawford Elder are proponents of conservativism while
rejecting the evidential value of intuitions. Although I assume that there will be some exceptions to my
generalization regarding conservativism, these two authors are not exceptions to the norm. Baker expresses some
skepticism regarding a priori, rationalist, intuition-driven philosophy (2001, 386). However, she does give weight to
ontology are given priority over our judgments regarding abstract ontological principles.

Although conservativism has its defenders, it is a minority view in ontology (Markosian 1998).

In contrast, eliminativists hold that most of the objects posited by common sense and science do not exist. These authors grant that, intuitively, tables and chairs exist, but they are united in denying that such things actually exist. Many eliminativists also endorse nihilism.

Nihilism answers the SCQ by holding that composition never occurs. According to nihilism, for all x and all y, x does not compose y. Nihilists only countenance mereological simples, entities that do not have proper parts, where a proper part is a part of an object that is not identical to the object as a whole. Thus, they deny that, for example, an automobile has a wheel as a proper part. Some hold this view because they endorse the view that only impartite, microphysical entities (e.g. leptons, perhaps) exist (Dorr 2005; Hossack 2000). Others hold that there is only one object in existence, the universe, and thus it has no proper parts (Horgan and Potrč 2000). But one might endorse eliminativism without endorsing nihilism. Some hold that most posits of common sense do not exist, but nonetheless composition sometimes occurs. On one version of non-nihilistic eliminativism, there are composite objects that are very similar to ordinary objects (e.g. a mass of wood that is table-shaped), but these objects do not have the persistence or identity conditions required of ordinary objects (Heller 1990; Hoffman and Rosenkrantz 1997; Unger 1979; Van Cleve 2008). As I will argue below, one thing that all of these authors have in common is that they seem to place very little evidential weight on our case-based intuitive judgments. They may give special evidential weight to some intuitions, such as our intuitions

the “prosaic intuition[s]” arising from ordinary experience and common sense (392). If I am right that ontologists use intuition-talk in the deflationary way, then we should say of Baker that she does treat intuitions as evidence. Similarly, Elder gives evidential weight to “our pre-theoretical intuitions” but also qualifies that “our intuitions are simply too plastic” to be the final word in metaphysical inquiry (2007, 150-151).
regarding abstract ontological principles, but the case-based judgments seem to have very little significance.

Before proceeding to consider permissivism, I briefly pause to consider two hybrids between conservativism and eliminativism: emergentism and organicism. According to emergentism, only persons and mereological atoms exist. The motivation for this view is that, as Merricks argues, every physical object has non-redundant causal powers, and this excludes the vast majority of ordinary objects (2001, 114). Organicism’s ontology is similar to that of emergentism. According to organicism, composition occurs just in case a collection of simples are caught up in the activity of a life, entailing that the only material objects are mereological simples and living organisms (van Inwagen 1990, 91). Similarly, Olson endorses a sparse ontology according to which there exist human animals and mereological simples but not objects such as hands or brains (2007, 221). According to each of these views, there exist microphysical entities, perhaps entities such as leptons or quarks, but no medium sized, non-living entities such as tables or clouds. Living organisms, such as trees, pigs and people, exist and have microphysical entities as their proper parts. Although these accounts avoid some of the counter-intuitiveness of the more extreme nihilistic and eliminativist views, they nonetheless conflict with our intuitive judgments regarding inorganic macrophysical objects. As with conservatism and eliminativism, organicism is a minority position in ontology.

The majority of ontologists endorse a version of permissivism.57 According to permissivism, all of the objects that we ordinarily take to exist do, as do many, many more

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57 This claim has not been quantitatively verified, but it appears to be the general opinion of philosophers working in ontology even by those, such as myself, who wish this were not the case. The following is a list of proponents of universalism, all of whom hold that there are far more objects than we would ordinarily countenance, and most of whom hold that ordinary objects exist (Braddon-Mitchell and Miller 2006; Cartwright 1975; Goodman and Quine 1947; Heller 1990; Hudson 2000; Lewis 1986; McDaniel 2001; McGrath 1998; Rea 1998; Sider 2001; Thomson 1983; Unger 1979; van Cleve 1986; Zimmerman 1995).
objects that we would not ordinarily countenance. Apple trees, people, and tables exist. Moreover, there exists an object that is composed of the bottom half of an apple tree, a person’s left toe, and the left half of a table. The most common version of permissivism is universalism. Universalism, also known as the principle of unrestricted composition, answers the SCQ by holding that composition always occurs. For all x and all y, where x and y are physical objects that do not overlap, x and y compose a further object z. Universalism allows for all the posits of common sense (however, note that some proponents of universalism deny the existence of ordinary objects like tables while still holding that there exist countlessly many table-like arrangements of matter). Universalists and nihilists are united in their disagreement with conservatives, and this disagreement runs deeper than their starkly contrasting ontologies. Both groups are motivated by the goal of consistency. For reasons that will be seen below, some arguments and hypothetical scenarios seem to push one towards either nihilism or universalism, and universalism is often taken to be more palatable because it allows for the posits of common sense. Still, proponents of universalism and permissivism endorse views that have many counter-intuitive implications. Intuitively, we would not judge there to be an object composed of a human hand and a speck of dust three thousand miles away, but universalists are committed to the existence of this and any other imaginable combination of actual entities.

This disagreement regarding general theoretical views has clear implications for how theorists approach concrete cases and hypothetical scenarios. In many sub-disciplines of philosophy, our intuitions regarding hypothetical cases serve as a strong determinant of what views may be acceptable. Although one can hold a view that entails that switching the trolley is impermissible, this is seen as a major strike against one’s view. Similarly, the justified true belief account of knowledge has very few defenders because of the damning implications of Gettier’s
thought experiments. Put another way, most sub-disciplines in philosophy are marked by a strong particularist methodology. When case-based judgments and general theoretical principles conflict, non-ontologist philosophers tend to give higher weight to our case-based judgments. There is no parallel to the trolley or Gettier cases in ontology. Ontologists display a strong generalist methodology, by which I mean that their case-based judgments are constrained by their theoretical judgments rather than the inverse. As evidence for this general observation, I consider some of the most common cases presented in the literature: the statue and the clay, the ship of Theseus, and various strange kinds. This discussion will be relatively brief because I return to consider paradigm cases in greater detail in section 2.2.58

First, consider the case of a statue and the clay of which it is composed.59 At time T1 there is a lump of clay. At T2 this lump is sculpted to form a statue, and at T3 this statue is squashed into a lump of clay. Intuitively, one might be inclined to say that the clay existed throughout this process and that the statue came into existence at T2 and went out of existence at T3. One might also be inclined to say that from T2 to T3 the concurrently existing statue and clay are identical, such that only one macro-physical object is present. However, these two assumptions taken together conflict with Leibniz’ law because the statue and the lump of clay have distinct properties (e.g. the property of being able to survive squashing). Hence the puzzle. When confronted with this puzzle, as with most puzzles in ontology, ontologists tend to apply their already accepted view or modify their already accepted view such that it gives some answer to the puzzle. For those accepting constitutionalism, the statue is neither identical to nor

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58 Brian Weatherson (2003) makes similar observations about the methodological differences between sub-disciplines in philosophy. Putting his argument in the language of particularism vs. generalism, Weatherson argues that epistemologists are mistaken in their particularist leaning and should adopt a generalist methodology. I agree with his sentiments, but my interest here is only to address ontologists. In the following chapter I will argue, like Weatherson, that ontologists are right in their endorsement of generalism.
59 See Wasserman (2013) for detailed examination of the puzzle of the statue and the clay and for the ship of Theseus.
entirely distinct from the lump of clay, but rather the clay constitutes the statue so long as the statue exists (Wiggins 1968). Some universalists instead endorse temporal identity as a solution to this puzzle. On this view, the statue and the lump of clay are numerically distinct, not identical simpliciter, but nonetheless identical – in the tensed sense of identity – during their period of exact co-location (Lewis 1976, 27). Nihilists and eliminativists offer a straightforward application of their theory. Because there is no statue and no lump of clay, there is no puzzle of constitution (van Inwagen 1990). Others endorse relative identity (Geach 1967) or a dominant kinds view (Burke 1992). Importantly, the typical response is not to reject one’s prior ontological principles in order to defer to one’s intuitive judgments regarding the particular cases. Whatever our intuitions regarding this case, they appear to play a secondary evidential role in determining what we ought to say about the case. The primary constraint on proposed answers is logical consistency. No matter how counter-intuitive one’s view, it counts as solving the puzzle if it can give a consistent explanation, but, all the better for one’s account if it is consistent and preserves a greater number of these intuitive data points.

Ontologists offer similar responses to the case of the ship of Theseus. In this case, we are asked to imagine that over a long period of time the planks of a ship are replaced, one at a time, with qualitatively similar planks. The original planks are stored until the time when all of the original planks have been replaced, at which time the original planks are reassembled into the shape of the original ship. Intuitively, one might say that both the new and old planks now constitute the ship of Theseus, but there can only be one ship that is numerically identical to the original. As with the puzzle of the statue and the clay, this is because of Leibniz’ law and the observation that the two ships have inconsistent properties. As before, theorists resolve this puzzle by applying their previously held general ontological principles. Universalists hold that
both ships exist at the end of the story, as do countlessy many ship-like arrangements of matter in the vicinity of those ships; which object we call the ship of Theseus is a matter of convention or semantic decision making rather than a matter to be settled by metaphysical investigation (Sider 2001, 6). Similarly, nihilists respond by denying that there exists any ship at all; we are free to label either bundle of atoms the ship of Theseus, but strictly speaking there is no ship of Theseus. Importantly, the nihilist does not respond to this puzzle by abandoning nihilism. Our intuition is that there exists at least one ship throughout this story, but the nihilist apparently gives this intuition very little evidential weight in concluding that no ship exists.

One might suspect that these puzzle cases are relatively unique in that they are specifically chosen because they highlight apparent inconsistencies in our intuitive judgments. It may, therefore, be more useful to consider unproblematic cases where we have a very clear intuitive judgment. Focusing for the moment on just those intuitions regarding whether some object exists, these clear cases fall into two categories: those where we intuitively judge that x exists and those where we intuitively judge that x does not exist. Where we intuitively judge that x exists, most ontologists agree with our intuitions, but eliminativists and most nihilists deny the existence of ordinary objects. For those material objects that intuition tells us do not exist, the majority of ontologists knowingly challenge our intuitive judgments. David Lewis, and universalists generally, believe in the existence of trout-turkeys, where a trout-turkey is a single object composed of the front half of a trout and the back half of a turkey, where said trout and turkey are spatially separated by hundreds or thousands of miles (Lewis 1991, 7).\(^6\) In addition to trout-turkeys we may add every imaginable combination of existing matter; for most of these

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\(^6\) A trout-turkey could also be composed of the parts of a trout and turkey in close proximity; the qualification regarding great distance is meant only to highlight the clearly counter-intuitive cases of trout-turkeys as opposed to the case of half of each animal being glued together.
combinations, we have the intuition that there is no such object, yet universalists are unmoved by such appeals.

This is not to say that our case-based judgments have no role to play in ontology. As will be explored in greater detail in section 2.3, permissivists begin with the intuition that ordinary objects exist, and eliminativists with the intuition that strange kinds do not exist, and these intuitions are used as premises in structurally similar arguments P (permissivism) and E (eliminativism).61

P1: Objects of ordinary kind O exist if and only if objects of strange kind S exist.
P2: Objects of ordinary kind O exist. [intuitive premise]
P3: Therefore, permissivism.

E1: Objects of ordinary kind O exist if and only if objects of strange kind S exist.
E2: Objects of strange kind S do not exist. [intuitive premise]
E3: Therefore, eliminativism.

Conservatives deny premise one while endorsing both intuitive premises, and permissivists and eliminativists each employ at least some concrete-case intuitive judgments in motivating their views. The motivation for premise one of both arguments is that we cannot rationally believe in the existence of ordinary kinds (e.g. a dog) while denying the existence of strange kinds (e.g. an object composed of a dog’s front paws and tail), lest we endorse an account that is intolerably arbitrary. As Ted Sider emphasizes, “it would be nothing short of a miracle if reality just so happened” to include ordinary kinds but not strange kinds (2001, 157). Similarly, Hawthorne observes that “it is something of a biological and/or cultural accident that we draw the lines that we do” (2006, 109). Concrete-case intuitions’ relative lack of evidential weight is most clearly seen once theorists have adopted permissivism or eliminativism. The theoretical advantage of non-arbitrariness (premise one) is, by their lights, of greater epistemic worth than all of the case-

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61 This exact argument is not given by any author, but I take this to reflect a general pattern of arguments for the extreme views.
based counter-intuitive implications of their views combined. In this respect material object
metaphysics is a clear methodological outlier in philosophy when it comes to the evidential
significance of concrete-case intuitions, but it should be noted that ontologists nonetheless take
themselves to be obliged to address the tension between their views and our intuitions.\(^{62}\)

This sense of obligation is seen in the strategy of explaining away the intuitions. These
strategies may be divided into two categories: compatibilist and incompatibilist (Korman 2011).
Compatibilists aim to show that their revisionary view is compatible with our intuitions, despite
the seemingly obvious tension, and incompatibilists grant that their views conflict with intuition
while aiming to show that their theory is preferable to our pre-theoretical judgments. Permissivist
compatibilists hope to show that our ordinary way of speaking and related intuitive judgments
are the result of implicit quantifier restriction (Lewis 1991, 80; Sider 2001, 218; Sosa 1999, 142;
Varzi 2003, 213). On one way of spelling this out, we are natural universalists but restrict our
ordinary talk of existence for the sake of convenience. We would not ordinarily say that there
exists a trout-turkey, but, were a non-philosopher given the relevant information (e.g., the
motivations for P1) she would grant that such things exist. Alternatively, one might hold that
ordinary speakers have no view one way or the other on the existence of trout-turkeys, but, if we
explained what we mean by ‘trout-turkey,’ they “would certainly accept” the existence of trout-
turkeys (Thomasson 2007, 184). Some eliminativist compatibilists hope to reconcile their views
with intuition by holding that our ordinary way of speaking and related intuitive judgments are
the result of loose talk (van Inwagen 1990). On this view, non-philosophers actually only believe
in atoms-arranged-table-wise, not tables, and we speak of tables for convenience.\(^{63}\) Some

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\(^{62}\) See Korman (2010) for further discussion of this issue.

\(^{63}\) The strategies reviewed here involve contentious empirical claims. Unfortunately, these ontologists do not offer
any empirical support for their claims, so they must be regarded as merely speculative. However, my purpose here is
not to evaluate the plausibility of these strategies.
eliminativists suggest that when people say “there’s a table,” they implicitly mean to include the tacit qualification of “according to the fiction that mereological composition occurs” (Rosen & Dorr 2002). Alternatively, an eliminativist might explain away the intuition by appealing to the context sensitivity of language (Horgan and Potrč 2008; Siderits 2007). One way of spelling this out is that we have two distinct languages related to ultimate truth (eliminativism) and conventional truth (conservativism) (Siderits 2007). In contrast, the incompatibilist grants that their view conflicts with our intuitions, but seeks to downplay the significance of this tension (Merricks 2001; Olson 2007; Unger 1979). Some incompatibilists emphasize that their views only conflict with particular aspects of common sense and not common sense more generally (Unger 1979, 150). Such arguments seek to demonstrate that our normal way of thinking is reasonable and justified prior to considering the arguments, even if they are strictly speaking false.

My purpose here is not to evaluate the plausibility of these strategies but rather to highlight the evidential role of intuitions in ontology. Although ontologists seem to be generally unmoved by case-based intuitions, they nonetheless appear to feel obliged to address the tension between their account and intuition. These observations seem to be inconsistent. On the one hand, their views indicate that they do not place much evidential weight on intuitions. On the other hand, the common practice of explaining away the intuitions suggests that they treat intuitions as recalcitrant data that present a strong prima facie case against their theories. I consider three explanations of this apparent tension in their methodology.

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64 Horgan & Potrč (2008) may also qualify as incompatibilists. They present a linguistic account according to which ordinary judgments (e.g. There’s a table in the corner) are true despite the fact that tables do not exist. Whether their strategy counts as compatibilist or incompatibilist will depend on whether the relevant intuitions are judgments made in the ontology room or in ordinary discourse, a matter they do not resolve.
First, one might hold that revisionary ontologists endorse views that, by their own lights, are at odds with all of the relevant evidence. According to this explanation, revisionary ontologists take intuitive judgments to be the highest form of evidence but nonetheless endorse views at odds with the evidence. This interpretation of the standard practice would imply that most ontologists suffer from a significant cognitive and epistemic defect, but this seems unlikely. On the other extreme, one could argue that revisionary ontologists believe that our intuitions have no evidential weight whatsoever. According to this explanation, the necessity for explaining away the intuitions is due to the fact that revisionary ontological accounts are in tension with a non-intuitive, highly plausible view, namely that non-philosophers are generally reasonable and that their beliefs are largely true. Any theory that entails that the vast majority of people are wrong about almost everything is judged by many to be prima facie implausible, independent of any consideration of intuitions. The obligation to explain away the intuition stems from the obligation to not endorse theories with implausible conclusions. This interpretation is more plausible than the first, but I suspect that the best explanation of the tension is to interpret revisionary ontologists as judging our intuitions to have some evidential weight while judging that this evidence is outweighed by other epistemic considerations. Above I presented arguments P and E as abstract versions of arguments typically given for permissivism and eliminativism. Each argument relied on concrete case intuition (P2 or E2), indicating that revisionary ontologists treat intuitions as having some evidential significance. But, when faced with the inconsistent triad (ordinary kinds exist, strange kinds do not, and ordinary kinds exist if and only if strange kinds exist), revisionary ontologists reject one of the two intuitive claims in order to maintain the generalist principle (P1 or E1). This supports the moderate explanation of the apparent tension in revisionary ontologists’ views by showing that intuitions are treated as
(recalcitrant) evidence, but the epistemic significance of intuitions is less than the epistemic significance of consistency, simplicity, and systematicity.65

3.2 Intuitions in Ontology

Thus far I have assumed that ‘intuition’ and its cognates are unambiguous, referring to our pre-theoretical beliefs, for the sake of offering a general characterization of the field of ontology. In this section I will argue for this assumption by considering proposed defining features and paradigm cases. Because few ontologists have explicitly offered definitions of ‘intuition,’ most of the discussion will focus on the case studies, which will be chosen based on authors’ significance in the field as determined by objective rankings in a citations-based network.

3.2.1 Definitions

Chapters one and two relied heavily on meta-philosophers’ stated definitions of ‘intuition.’ This strategy was successful because a substantial number of meta-philosophers have defended each of F1-F6*. Unfortunately, the majority of meta-philosophers work in epistemology rather than metaphysics, and few metaphysicians explicitly endorse specific defining features of intuition.66 Of the defining features considered, only the following have been

65 I remain neutral on whether any of these strategies may be applied to instances of explaining away the intuition outside of ontology. Cases of explaining away intuitions regarding more specific claims or theoretical principles may require a different interpretation, especially in those disciplines where particularism is more popular. See Ichikawa (2009) and Cappelen (2012, 90) for further discussion of explaining away the intuition.

66 I suspect that this is problematic in a more general way. The popular definitions of ‘intuition’ in meta-philosophy appear to quite naturally apply to philosophical work in epistemology, but the definitions (in conjunction with the assumption that philosophers rely primarily on intuitions as evidence) offer a highly misleading characterization of many sub-fields of philosophy. Philosophers working in bio-medical ethics, legal theory, and philosophy of cognitive science are not obviously relying primarily on modal or a priori intuitions, and it would be misleading to characterize such fields as primarily or exclusively engaged in conceptual analysis.
endorsed, implicitly or explicitly, by theorists working in ontology, with the field of ontology operationally defined as including all and only those theorists who have published under the Philpapert's categories Objects or Ontology.

F1*: **Beliefs**: Lewis 1983, x; Parfit 1984, 278-280; Sider 2001, 196-207; van Inwagen 1997, 309
F1**: **Conceivings or Imaginings**: Yablo 1993, 35-37
F2: **Special Phenomenology**: Plantinga & O’Brien 1993, 105
F3*: **Conceptual or non-Conceptual Etiology**: Lewis 1983, x; van Inwagen 1997, 309
F4*: **Modal or Non-Modal**: Lewis 1983, x; van Inwagen 1997, 309

This list offers very little evidence for or against any proposed defining features. None of these authors have written extensively on the nature of intuitions and each citation refers to a brief remark supporting the given defining features. F1**, F2, F3*, and F4* are each endorsed by only one or two authors. Although these endorsements are relevant to the meaning of ‘intuition’ in ontology, we should not take the views of a couple authors as clear indicators of a general consensus in the field. The one reasonable upshot of these endorsements is that we have some prima facie evidence for thinking that ontologists treat intuitions as beliefs or inclinations to believe, given that this defining feature is supported by four ontologists. As will be shown in the following section, this prima facie evidence strongly coheres with the most charitable interpretation of the majority of case studies in ontology. Based on textual analysis, I will argue that ontologists do not require intuitions to have a special phenomenology, be grounded in conceptual competence, or have modal content. Rather, intuitions are beliefs that we typically endorse (or would endorse upon prompting) prior to any reflection upon or education in ontology.
3.2.2 Paradigm Cases

In light of the relatively weak evidence afforded by ontologists’ explicit definitions of ‘intuition,’ I turn to consider a variety of case studies of the use of ‘intuition’ and its cognates in ontology. I begin by noting the motivations and methods used for choosing the cases presented here, and then turn to consider each of these cases in detail. Based on the evidence considered, I will argue that the most natural, charitable interpretation of ontologists’ uses of ‘intuition’ is that ‘intuition’ refers to our pre-theoretical beliefs.

Intuition theorists rarely rely on sociological or linguistic evidence to support their interpretations of standard philosophical practice, and when they do the sociological evidence considered is largely anecdotal. To date, every publication addressing the paradigm cases in philosophy has been based on authors’ personal judgments of which cases should be treated as paradigms. This was clearly seen in chapter one in the discussion of Cappelen (2012). Cappelen’s paradigm cases were almost entirely taken from the sixties and seventies, and every case involved possible instances of intuitions in relation to hypothetical scenarios. To his credit, this is a general trend in the meta-philosophical discussion, but the general trend is problematic because it has the potential to skew our perception of typical philosophical practice. The exclusive, almost pathological focus on thought experiments by intuition-theorists paints a picture of philosophy that ignores or downplays the non-case-based practices of analytic philosophers. The method of eliciting intuitions in response to hypothetical scenarios is certainly prevalent in analytic philosophy, but it would be a mistake to take this as the paradigm for how all analytic philosophy proceeds, at least prior to systematic investigation of the field.

Ideally, an investigation of the common practice of philosophy would be systematic, interpreting each and every publication. This is currently untenable, so a second-best option is
needed. With the current investigation I aim to be as systematic and impartial as possible while only considering a handful of cases. To achieve this, I propose to analyze articles from the top twenty authors in ontology, based on an objective ranking of the significance of those authors and articles in the field of ontology. Significance could be measured in a number of ways. For present purposes I will define significance in relation to citations. Using citations as the raw data, I employ an algorithm similar to Google’s PageRank algorithm for determining the relative significance of each author considered. The aim is to target the twenty most influential authors and focus our attention on the most significant publications of those authors.

The graph in Figure 9 below is a representation of the field of ontology from approximately 1960 to the present, with more recent publications being more frequent. The list of articles included was taken from Philpapers.org. This website has categorized over 500,000 papers according to topic. To focus our attention on material object ontology, I specifically targeted publications in six sub-categories of the Objects category: identity, material objects, mereology, minor entities, objects and properties, and persistence. A script was written to automatically collect citation data from Google Scholar for each article. Where a paper was co-authored by A and B, and that paper was cited by C, this was treated as C citing A and B. With co-authorship so distinguished, 52,862 citations were recorded between 9,982 authors. Where A cited B multiple times, duplicates were removed and edge weight was adjusted to reflect the quantity of citations, resulting in 26,218 unique edges.

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67 Four sub-categories (abstract objects, ontology of mathematics, non-existence objects, and miscellaneous) were excluded. Two major authors (John Law and Emmanuel Levinas) were specifically excluded, despite their having works within the target categories. This was done for two reasons: less than 1% of those citing them come from the target literature, and they were judged to be non-analytic metaphysicians. This second observation is not intended to carry normative significance regarding the quality of their work or its significance to material object metaphysics. The point is simply that they are not representative authors for this descriptive project.
Figure 9. A citations-based network of philosophers writing on the nature of material objects. Nodes were colored by group membership, as determined by the Wakita-Tsurumi algorithm. See descriptions above for the most significant figures in each group.

The colors of nodes represent group membership, where group membership was determined by the Wakita-Tsurumi algorithm. Authors identified with each group in the graph key are the highest ranked authors within their respective groups according to PageRank (to be explained shortly). The spatial layout was determined by the Harel-Koren Fast Multiscale algorithm, such that spatial proximity of two authors is an indicator of whether they cite one another, and whether the people citing each of them also cite the other. Authors identified with each color

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68 This layout was also chosen for its ability to isolate distinct clusters of nodes that do not directly connect to the central nodes in the graph and push them to the periphery of the graph. This is especially useful in this case because
group in the map key were those with the highest ranking within each group according to the PageRank algorithm, discussed in greater detail below. The most salient features of this representation are the central cluster of nodes and the individual nodes away from the center with fans of nodes radiating out from them. These two features highlight two types of author significance. The central cluster is composed of highly interconnected nodes. Significant authors within this cluster are frequently cited by other authors working in material object metaphysics, but their representative publications tend to not be cited as frequently by authors working in other sub-fields. Key authors within the central light blue cluster (e.g. Sider, van Inwagen) are a paradigm of this sort of significance. Everyone working in material object metaphysics is expected to be familiar with van Inwagen’s work, but this is not necessarily expected for philosophers with other specializations. In contrast, the nodes with radiating fans are those that have a relatively weak connection to the central discussions in ontology, and most of those citing their papers are philosophers from other fields. The distance of the radiating fan nodes from the central hub represents the degree to which the philosophers citing their articles are from other fields. Authors with spanning radiations of citation connections (e.g. Parfit) are paradigms of the second sort of significance. These authors play a crucial role in forming a communication bridge between otherwise disconnected discussions. Ontologists are expected to be familiar with Parfit, but not to the same degree as Sider or van Inwagen, and many non-ontologists (e.g. meta-ethicists) are more familiar with Parfit than Sider or van Inwagen. In deciding which authors to use as paradigms of material object metaphysics, we must first decide which type of significance to use as the metric.

so many of the authors represented are non-ontologists who happen to cite one ontologist who works on interdisciplinary topics.
The simplest measure of significance would be a ranking based on the total number of citations. This is a promising first start but not the most accurate measurement. The reason for this is that it does not discriminate between the relative significance of each citation. Being cited by David Lewis is of far greater significance than being cited by an unknown graduate student, and being cited ten times by one person is less significant than being cited by five distinct philosophers. For these reasons, we should instead determine the paradigm cases through the use of a more sophisticated algorithm. I consider the merits of three network ranking algorithms. The first, betweenness centrality, is a measure of the significance of a node as a link between otherwise unconnected nodes. More precisely, betweenness centrality is calculated by considering the shortest path between every pair of nodes in the network. The more often a node is part of the shortest path between two other nodes, the higher its betweenness centrality.\textsuperscript{69} This algorithm would not serve our purposes here. It gives great weight to the nodes I have characterized as having a fan of radiating edges in the graph above. These philosophers are significant in many respects, but they should not be taken as the paradigms for material object metaphysics. The reason is that many of these authors are more connected to authors in other fields than to ontologists, and thus they should not be seen as the paradigms of material object metaphysics.

The second possible metric is PageRank. To understand PageRank in relation to academic citations, it will be helpful to consider how PageRank functions in relation to websites. In determining the order in which websites appear in a search, Google considers how often websites link to other websites. As a first pass, for websites A and B, if more websites have links to A than to B, A will be ranked higher than B, but this is not entirely accurate. Given that not all

\textsuperscript{69} This is not entirely accurate, but it serves our purposes as an easy to understand first pass at explaining the metric. For each algorithm I consider, the explanation should be understood as a quick gloss on the more complicated technical formulation of the algorithm.
websites are equally important, Google adjusts the weight of the significance of a link based on the significance of the website with that link. Thus, if ten important websites link to A and twenty unimportant websites link to B, A may be ranked higher than B. Relating this back to the field of ontology, PageRank considers the number of citations to each author, but citations from important authors are given higher weight than citations from less important authors. This algorithm would be fairly accurate, but not ideal for our purposes. The reason is that, like betweenness centrality, it gives special weight to authors who play a bridge role between communities. Such figures are important, but we should focus on those authors who are highly influential in the core of material object metaphysics. By ‘core’ I mean the cluster of authors who highly specialize in the field without extensively branching out into other disciplines. Such authors may also branch out into other disciplines, but our only consideration should be their significance to ontology.

The Eigenvector Centrality algorithm is ideal for targeting this group. Eigenvector Centrality is similar to PageRank in considering well-connectedness to others who are also well-connected, but it gives special significance to those at the center of the network over those at the periphery. Thus, it targets the large cluster of authors who are highly connected to other authors within that cluster. The top twenty authors according to this metric are the following: (1) Sider, (2) Lewis, (3) van Inwagen, (4) Simons, (5) Varzi, (6) Wiggins, (7) Kripke, (8) Lowe, (9) Hawley, (10) Armstrong, (11) Zimmerman, (12) Merricks, (13) Johnston, (14) B. Smith, (15) Thomson, (16) Fine, (17) Parfit, (18) Heller, (19) Unger, and (20) Markosian. In what follows I will focus most of my attention on some key authors, but each of these twenty authors will be considered to some extent.70 I will argue that, as a generalization, these twenty representative

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70 The one exception is that I will have relatively little to say about Thomson because her work was considered in great detail in chapter one.
ontologists place the greatest evidential weight on the following six factors in judging the plausibility of ontological theories: internal consistency, systematicity, simplicity, puzzle solving power, coherence with the received wisdom of physics, and vindicating our pre-theoretical beliefs. I will consider each of these theoretical virtues and argue for two conclusions. First, the use of ‘intuition’ and its cognates in ontology is most charitably read as referring to our pre-theoretical beliefs. Second, although intuitions are treated as evidence in ontology, the majority (17/20) of these authors are less concerned with the intuition-evidence than they are with the other theoretical virtues noted above.

This discussion will be divided into two sub-sections: generalism and particularism. This language is taken from Markosian (1998) but my usage deviates slightly from his.\(^7\) I will use ‘generalism’ to refer to the methodological norm of giving priority to systematicity, general answers, and broad ranging ontological principles, and I will use ‘particularism’ to refer to the opposing methodological norm of giving priority to our case based judgments and preserving common sense and ordinary beliefs, especially regarding concrete cases. For reasons that will become clear in the discussion to follow, the methodological divide between generalists and particularists is one of the most significant methodological disagreement in contemporary material object metaphysics. Although most ontologists lean towards generalism, a significant minority deny the methodological norm of systematicity and instead prefer a particularists methodology.\(^7\) This distinction is also relevant to the earlier distinction between case-based and

\(^7\) Markosian defines particularism as the view that “the intuitions about particular cases should win out,” and generalism as the view that “intuitions about general principles should win out” (1998, 236). My use of ‘particularism’ and ‘generalism’ includes these defining features but adds further qualifications.

\(^7\) It is worth considering what might explain this deep disagreement between generalists and particularists. This distinction has its analogues in most philosophical sub-disciplines (e.g. virtue ethics vs. utilitarianism and knowledge attribution contextualism vs. invariantism), and it would be interesting to determine whether the distinctions in the various fields have a common underlying explanation. This discussion is too far removed from the present topic to consider in detail, but I suspect that the pattern of judgments seen in survey responses (presented in section 1.2) would be part of the general explanation for this phenomena.
general intuitions. As I hope to show, particularists give significant evidential weight to all of our intuitions, and generalists give high evidential weight to general intuitions while downplaying the significance of our case-based intuitions.

3.2.3 Generalism

As emphasized in section one, revisionary ontologists\(^{73}\) (the majority) show a strong preference for the goal of systematicity over the goal of capturing our case-based intuitions. This preference for systematicity is a significant aspect of the broader methodological norm of generalism, which was contrasted with particularism. Generalists follow the lead of mathematicians and physicists of seeking relatively concise axiomatic principles or laws that explain a broad range of phenomenon.\(^{74}\) As Horgan observes, “an adequate metaphysical theory – like an adequate scientific theory – should be itself systematic and general, and should keep to a minimum the unexplained facts that it posits.” (1993, 695) Lowe adds that, as with mathematicians, metaphysicians generally aim at representing and explaining ontology with formal, logical systems (2011, 105). This method has the virtue of producing elegant, simple accounts with great explanatory power, but, as particularists are quick to observe, these advantages come at the cost of abandoning the purported desideratum of preserving common sense and ordinary beliefs regarding material composition. Generalists typically deviate from common sense views on ontology in one of two ways: permissivism and eliminativism.\(^{75}\) In the

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\(^{73}\) Many ontologists that I characterize as revisionary would not self-identify as revisionary. As seen with the strategies above for explaining away the intuitions, many proponents of seemingly revisionary theories hold that their views cohere with ordinary belief.

\(^{74}\) What I have labeled the goal of systematicity in ontology is similar to the goal of unification in science (see Friedman 1974 and Kitcher 1989).

\(^{75}\) One exception to this generalization is the theory put forward by Peter Unger (1979). Unger’s view may be described as both permissivist and eliminativist because he endorses a version of universalism while also denying
following sub-sections I consider prominent ontologists endorsing each account. As will be seen, each author gives significantly less epistemic weight to their case-based intuitions than to general intuitions and the theoretical virtues associated with generalism.

3.2.3.1 Permissivist Generalism

As emphasized above, the majority of ontologists endorse a version of permissivist generalism. This is the conjunction of the methodological norm of giving preference to systematic, general accounts and the resulting view that far more objects exist than we ordinarily countenance. In this sub-section I review those top-twenty ontologists who have endorsed both permissivism and generalism: Sider, Lewis, Varzi, Hawley, Armstrong, Zimmerman, Johnston, Smith, Fine, and Heller. As a preliminary qualification, it should be noted that both Sider (forthcoming) and Heller (2008) now endorse eliminativist accounts. I have chosen to focus on their pre-conversion publications and discuss them in the context of permissivist generalism because their earlier publications account for most of their PageRank score. My focus here will be on the two top-ranked philosophers from this list, David Lewis and Ted Sider, but I briefly comment on each theorist. I conclude that those philosophers endorsing permissivist generalism give relatively little evidential weight to case-based intuitive judgments and instead give greater weight to the theoretical virtues of consistency, simplicity, puzzle solving power, and coherence with physics.

Both Lewis and Sider endorse universalism and freely accept the tradeoff between intuitiveness and systematicity. By ‘systematicity’ I mean the theoretical virtue of having a
relatively small number of principles that may be clearly and consistently applied to a broad range of cases, both familiar and novel, such that the theoretical framework gives a comprehensive, intelligible picture that is relatively easy to grasp. This label is meant to capture the several theoretical virtues listed above. As will be seen briefly, both Lewis and Sider’s theories have this feature, which in part explains the significant popularity of their accounts.

Lewis’ (1986) endorsement of modal realism is a clear example of his comfort with counter-intuitive implications in exchange for other theoretical advantages (e.g. solving problems regarding causation and mental content). Regarding modal realism, Lewis states: “I acknowledge that my denial of common sense opinion is severe, and I think it entirely right and proper to count that as a serious cost… [but] the theoretical benefits are worth it.” (1986, 135) For Lewis, the posits of common sense are epistemically significant and should be treated as data, but this evidence can be outweighed by various theoretical benefits. This is especially true if one can explain away the intuitions by showing that one’s own view, however counter-intuitive, still captures the intuitions in some sense. With regards to modal realism, Lewis aims to downplay the apparent counter-intuitiveness of his view by employing the restricted quantifiers strategy outlined in section 1.3 above. Using this strategy, Lewis can consistently hold onto both modal realism and ordinary judgments (e.g. God does not exist) by holding that when he utters the ordinary judgment he is restricting his quantifiers to only refer to the actual world (137).

Lewis employs similar strategies in his endorsement of unrestricted composition for material objects. As seen above, this view has several counter-intuitive implications, but he holds that the alternative, conservativism, is unacceptable because it entails metaphysical vagueness (1986, 212). Nonetheless, he aims to preserve common sense as much as possible while continuing to endorse a principled, general account. One example of this is seen in his treatment
of Geach’s (1980) paradox of 1001 cats. This problem stems from the observation that most physical objects have what Lewis labels “questionable parts” (1993, 23). As two common examples, a cloud’s perimeter is somewhat fuzzy, and there is no obvious line of demarcation for the Australian Outback. Focusing on Lewis’ paradigm case, imagine a scenario that we would intuitively characterize as a single cat sitting on a mat (25). Because Lewis endorses universalism, he is committed to the view that there are millions of cat-like aggregates of matter above the mat, corresponding to every imaginable addition or subtraction of particles or hairs from the cat. On the surface, there appears to be some tension between universalism and the judgment that there exists exactly one cat on the mat. Some universalists respond to this tension by denying our ordinary judgment. Unger, for example, claims that there are no cats on the mat, but there are millions of cat-like aggregates (1979). Lewis wishes to avoid this conclusion, presumably because he wishes to preserve the intuitive judgment while continuing to endorse his seemingly revisionary account. His solution to the puzzle relates to his view that vagueness stems from language rather than the world. In his words,

The only intelligible account of vagueness locates it in our thought and language. The reason it’s vague where the outback begins is not that there’s this thing, the outback, with imprecise borders; rather there are many things, with different borders, and nobody has been fool enough to try to enforce a choice of one of them as the official referent of the word ‘outback.’ Vagueness is semantic indecision. (Lewis 1986, 213)

On his view, vagueness is the result of a lack of precision in ordinary language rather than some objective feature of the world. Our concept of a cat is vague because English speakers have no interest in specifying, for example, exactly when a single cat hair ceases to be a proper part of a cat. Thus, our concept does not specifically refer to any one of the millions of cat-like aggregates of matter on the mat. If Lewis were willing to abandon our common sense intuitions entirely, like

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77 By “every imaginable addition or subtraction of particles” I do not mean the process of physically removing or adding particles to the cat. Rather, this means every imaginable way of carving up the already present matter in the vicinity of the cat.
Unger, then he could conclude by claiming that it is “not that there's this thing, the outback,” but he wishes to explain away the intuition by showing that it is compatible with his theory.

To address the apparent tension, Lewis appeals to van Fraassen’s (1966) supervaluationism. According to this strategy, a sentence such as “there is a cat on the mat” is supertrue just in case it is true under all disambiguations of the vague predicates of natural language, and superfalse just in case it is false under all disambiguations of the vague predicates of natural language (Lewis 1993, 29). Our concept of a cat may be disambiguated to refer to cat₁, cat₂, cat₃, … catₙ for each way of making our ordinary term precise. If “there is a ____ on the mat” is true for each possible disambiguation of our ordinary concept, then the ordinary English sentence “there is a cat on the mat” is supertrue. By using this strategy, Lewis does not show that ordinary claims including vague predicates are true simpliciter, but his theoretical framework is able to explain why it seems like such judgments are true by showing that they are supertrue and appropriately related to more precise claims that are themselves true simpliciter.

My purpose here is not to evaluate Lewis’ proposed solution to the problem of the many, so I leave out many important steps in the argument. The importance of this work for present purposes is that Lewis is addressing a puzzle, recognizes the seemingly odd (counter-intuitive) implications of his view, and employs a set of technical concepts that he judges to successfully address the puzzle and explain away the seemingly odd implications. He is able to get the right answer, relative to the standard of intuitive plausibility, without abandoning the theoretical advantages of universalism. In this respect, his solution to the problem is another example of an ontologist explaining away the intuition. At no point in this essay does Lewis use ‘intuition’ or its cognates, but he nonetheless demonstrates sensitivity to the problematic counter-intuitiveness of his view. His non-reliance on intuition-talk matches his deflationary view of intuitions. They
are, in his words, “simply opinions… some are commonsensical, some are sophisticated; some are particular, some are general, some are firmly held, some less. But they are all opinions.” (1983, x) So understood, intuitions cannot have any special evidential role because there are no non-intuition doxastic states with which to compare them. The evidential role of intuitions is just the evidential role of opinions. For Lewis, the evidence in support of his preferred solution to the problem is the more general theoretical virtues of his solution.

Above I suggested that ontological theories are evaluated according to their ability to solve puzzles. Lewis’ theory does this, but so do many others. The evidence Lewis offers in favor of his solution over competing solutions is that the competing solutions are less parsimonious (1993, 25). While both theories count as solutions, on Lewis’ view we should opt for those theories that are simpler – positing fewer types of entities, giving a more streamlined, less convoluted story, and possessing greater explanatory power over a wide variety of puzzles and domains. In this respect, the methodological norms of metaphysics may be seen as analogous to those of the empirical sciences. As with the empirical sciences, theorists have some obligation to explain away odd or puzzling implications of their theories, but the odd or puzzling implications are palatable so long as the theory fares better than competitors in terms of theoretical virtues (e.g. parsimony).

A similar strategy is seen in Sider’s work. After briefly noting his stated meta-philosophical commitments, I will offer a general overview of the methods present in his book length defense of four-dimensionalism (2001). Sider concisely characterizes his general methodology in distinguishing between two approaches to ontology: the analytic and synthetic methods (2007, 88). According to the analytic method, we should begin inquiry with highly abstract principles and use these principles to construct theories that offer verdicts on concrete
cases. This is similar to what I have labeled generalism. In contrast, according to the synthetic method, we should instead begin with our ordinary judgments about concrete cases and proceed to construct an ontological theory that matches these data points. This is similar to what I have labeled particularism. Sider endorses the analytic method, and his primary reason is that, “judgments about cases are often infused with irrelevant linguistic intuitions” (88). This will turn out to be highly significant in this and the next chapter. If my characterization of ontology is correct, most ontologists proceed by the analytic rather than synthetic method, giving significantly higher evidential weight to our general intuitions than to case-based intuitions. In chapter four I will offer an argument for the analytic method that is similar to Sider’s reason for endorsing it (case-based intuitions being caused by irrelevant factors). With Sider’s methodological commitments made salient, I turn to consider his work in greater detail.

Sider endorses four-dimensionalism, also known as perdurance theory and the doctrine of temporal parts (2001, 3). According to this view, physical objects and persons have both spatial and temporal parts, where the temporal parts are temporal stages in the existence of an object or person. Sider’s defense of four-dimensionalism relies on a variety of evidential sources and considerations. Like Lewis, Sider is concerned with puzzle solving (6-10) and parsimony (18-20). In addition, he aims to show that opposing views are logically inconsistent (78) or open to the same criticisms as his own (179). In defending his own account, he notes that, “respecting ordinary beliefs about persistence is a desideratum in our choice of theory” (185). Throughout his work he uses intuition-talk and talk of ordinary belief interchangeably (see especially 196-207), so we may reasonably interpret this as giving some evidential weight to our intuitive judgments. However, immediately after the passage quoted above he qualifies that “ordinary belief is not the sole guide to belief in metaphysics” (185) and that although “intuitions about
theoretical analyses” have some weight, “they are not sacrosanct” (195). Non-intuition considerations include empirical evidence from physics (42-47, 79-87) and the other theoretical virtues noted above. As with Lewis, the primary goal is to endorse the view that comes closest to our pre-theoretical beliefs while being maximally systematic and consistent with scientific discoveries. Where our case-based intuitions conflict with systematicity or scientific fact, the intuitions are quickly discarded. Similar methodological norms are seen in the works of other prominent permissivists. I consider these authors remarks regarding the general methodological norms, the nature of intuitions, and the relative epistemic significance of intuitions in ontology. This discussion will support the conclusion that ontologists treat intuitions as pre-theoretical beliefs and do not give case-based intuitions significant evidential weight.

Permissivists generally favor systematicity over consistency with our pre-theoretical intuitions. Fine and Johnston emphasize the revisionary nature of their projects, and that such revisions are necessary to properly address the puzzle cases and inconsistencies found in common sense (Fine 1999, 73; Johnston 2006, 697). Smith and Varzi emphasize the tension between common sense and science, and side with the received wisdom of science without feeling any obligation to justify this decision (2000, 408). Similarly, Armstrong and Zimmerman offer intuitive, common sense judgments only to emphasize that the truth of these judgments is an empirical matter that must be decided by the sciences (Armstrong 1997, 107; Zimmerman 1995, 76-78). Heller, in challenging the metaphysical account of vagueness, qualifies that his argument is not intended to target indeterminacy on the quantum level, as he does not intend to challenge physicists, and Wiggins insists that “it is not an option for philosophers to reject the four dimensional conception of the world” assumed by physicists (Heller 1996, 184; Wiggins 2012, 12). Our ordinary way of thinking may serve well as a starting point for inquiry (Wiggins
2001, 3), but after careful deliberation the pre-reflective, ordinary way of thinking is given “very little weight” (Heller 1984, 323). These theorists also follow Lewis and Sider in showing a preference for simplicity, appealing to Ockham’s Razor (Johnston 2006, 681), but, as permissivists, do not let this methodological norm push them to deny the posits of common sense and science (Fine; 1999, 73; Johnston 1992, 104; Smith & Varzi 2000, 418). The general method is to apply a sort of cost-benefit analysis in weighing theories (Armstrong 1997, 96). The chosen theory is the one that accommodates as many of our pre-reflective judgments as possible while being systematic and exemplifying the several theoretical virtues.

Their writings point towards a conception of intuitions as pre-theoretical beliefs. Smith and Varzi identity the intuitive with the natural (2000, 418). Zimmerman identifies intuitions with our beliefs and what we are “naturally” more inclined to say (1995, 81). Johnston speaks of our “ordinary ways of talking” and the conceptual schemes we develop in early infancy (1992, 100; 2006, 661). Wiggins is concerned with our “rudimentary, pretheoretical ideas” (2001, 2). Finally, Fine speaks of the intuitive as what we find “natural” and “irresistible,” the sorts of things we would think prior to critical reflection (1999, 64-65). Each of these off-hand characterizations of intuitions support the thesis that ‘intuition,’ as used by ontologists, refers to our pre-theoretical beliefs. As with Lewis and Sider, these pre-theoretical beliefs are taken to be of some significance and worth preserving, but not the final arbiter in ontology (Fine 1999, 72-74; Heller 1984, 323; Johnston 1992, 102-104; Varzi & Smith 2000, 404-418; Zimmerman 1995, 85-93). In Armstrong’s words, we should avoid the “disgraceful tendency” to settle metaphysical disputes by “appealing to the authority of ordinary thought” (1997, 100).
3.2.3.2 Eliminativist Generalism

I now turn to consider four authors who defend eliminativist theories according to which many posits of common sense do not exist: van Inwagen, Merricks, Parfit, and Unger. Van Inwagen and Merricks deny the existence of ordinary objects while accepting persons, Parfit is a reductionist about persons while accepting ordinary objects, and Unger denies the existence of both ordinary objects and persons. I will argue that, like Sider and Lewis, they are not particularly concerned with staying true to our intuitions and that they conceive of intuitions as pre-theoretical beliefs.

I begin by looking at the views of the two most influential defenders of organicism, van Inwagen and Merricks. According to organicism, material composition occurs just in the case of living organisms. This view is clearly counter-intuitive, as it entails that there are no tables, planets, or molecules, but proponents of organicism take its other theoretical advantages to outweigh this implication. I will outline what van Inwagen and Merricks take to be the reasons for and theoretical advantages of their account and then proceed to consider the upshot of this discussion for the meaning of ‘intuition’ in ontology.

On its surface, organicism seems to be an awkward compromise between nihilism and common sense. The organicist’s primary motivations for denying the existence of ordinary objects are the same as that for the nihilist: the problem of vagueness and the arbitrariness of our ordinary object categories. In responding to the puzzle of the statue and the lump of clay, van Inwagen insists that in forming a statue, “we have not augmented the furniture of the world but only rearranged it.” (1990, 127) The fact that we have a concept of a statue should not lead us to infer that some new object has come into existence. Similarly, Merricks responds to this puzzle by arguing that including the statue into our ontology is “a needless multiplication of physical

78 For defenses of similar views, see also Hoffman and Rosenkrantz (1997) and Olson (2007).
objects.” (2001, 40) For both authors the motivation for denying the existence of ordinary objects is a preference for ontological austerity in the vein of Occam’s razor. If an event can be fully explained without positing the existence of a statue, we should not believe that the statue exists. Theorists’ interest in honoring Occam’s razor may turn out to be based on some intuitive judgment, but, if so, the relevant intuition is general rather than case-based. Along with the theoretical virtue of employing Occam’s razor, the nihilist and organicist response solves the puzzles of constitution described above by dissolving the puzzles. If there are no statues and no ships, then there are no puzzles regarding the constitution or persistence conditions of statues and ships. The spirit of Occam’s Razor is also seen in Merrick’s central argument against the existence of ordinary objects (2001, 56). According to this argument, if a baseball shatters a window, the atoms-arranged-baseball-wise must also cause the shattering of a window. But this would involve a problematic sort of overdetermination, where the atoms alone fully explain the shattering such that the baseball plays no non-redundant causal role. In the spirit of Occam’s Razor, we should reject this sort of overdetermination and conclude that only the atoms exist. Again we see an appeal to a general principle (anti-overdetermination) that may be characterized as an appeal to an intuition, but this sort of intuition is importantly different from our case-based intuitions, at least for generalist ontologists.

In light of this push towards nihilism, it might seem puzzling that van Inwagen and Merricks hold that living organisms still exist. Because of their generalist leanings (favoring general principles over case-based judgments) they are sensitive to this worry and offer what they take to be principled reasons for making an exception for us. For van Inwagen, the primary motivation is seen in Descartes’ cogito (1990, 116). He judges the rejections of the cogito to be “unintelligible,” and thus we must accept our own existence despite the powerful metaphysical
arguments for nihilism about other sorts of entities (117). This sort of argument applies to any being with a unity of thought and, more generally, to beings with a unity of a life (121). For Merricks, the principled distinction between living beings and ordinary objects is that creatures like us have non-redundant causal powers (2001, 89). Although the causation of baseballs is really just the causation of atoms, the causation of human beings is free will, and free will cannot be reduced to the causal power of atoms. Whether these arguments succeed, they are meant to demonstrate a principled distinction between objects and persons such that organicism is consistent with the commitment to generalism.

I now turn to consider their more general meta-philosophical commitments in relation to intuitions. Both demonstrate a strong willingness to discard intuitive beliefs in favor of systematic, general accounts with theoretical virtues. Unlike universalism, one of the primary purported advantages of organicism is that it follows the dictate of Occam’s Razor, but both organicists and universalists appear to take a strong cue from the best methods of the sciences. The method is one of pursuing the evidence and arguments regardless of how surprising one’s conclusions. However, organicists and universalists also feel the need to explain away the intuitions. Van Inwagen does this by arguing that organicism does not conflict with ordinary belief. One reason is that he does not believe that common sense has anything to say about the matter (1990, 103). Although it is common sense that chairs are used for sitting, common sense does not take a stand on whether tables should be included in our ontology. Were the view spelled out in detail, the non-philosopher would not find it objectionable. The ordinary belief that “there are tables” is like the ordinary belief that “the sun had moved behind the elms.” (101). The latter does not commit us to believing that it is the sun that moves, and the former does not commit us to including tables in our ontology. This may be seen as a compatibilist strategy,
holding that the seemingly revisionary metaphysics is actually compatible with ordinary, pre-theoretical belief because ordinary talk remains neutral on metaphysical questions.

Merricks instead endorses an incompatibilist strategy in explaining away the intuition. As with previous authors, Merricks conceives of intuitions as common sense or pre-theoretical beliefs (2001, 87). Thus, the recalcitrant intuitions should be understood as generally held beliefs or ways of speaking that conflict with Merricks’ account. On his view, ordinary discourse should be interpreted literally and straightforwardly (168). When people say “there are tables,” they are expressing a proposition that is false by the lights of organicism. In light of this admission, Merricks is still obliged to explain away the intuition. This is done by insisting that folk beliefs, although false, are “nearly as good as true” (171). The belief that tables exist is false, but it remains true that there are atoms-arranged-table-wise, such that ordinary belief is not obviously false prior to philosophical reflection (172). In this way the false belief that there are tables is epistemologically very different from the false belief that there are unicorns. Prior to metaphysical reflection, we are justified in believing that tables exist because we perceive atoms arranged such that there would be a table if inorganic composition were metaphysically possible.79 In contrast, we do not perceive atoms-arranged-unicorn-wise, and thus we are not typically justified in believing in unicorns prior to philosophical reflection.

By giving this explanation, Merricks aims to show that his view does not entail that the vast majority of people are crazy, irrational or missing some obvious truth about the world. This coheres with the second possible explanation of the standard practice of explaining away the

79 One might object to this way of stating the reasonableness of ordinary belief in two counts. First, one might object that we do not perceive atoms because they are too small. If one has this worry, the sentence may be restated to refer to misperception of macroscopic objects that is caused by atoms. One might also object to speaking of the possibility of a necessary truth being false. If, as Merricks claims, it is metaphysically impossible for atoms to compose a table, then it might be unintelligible to speak of the counter-factual possibility of tables existing. Readers with this concern should understand this sentence as describing the epistemic possibility of Merricks’ view being false rather than the metaphysical possibility of tables existing under the assumption that Merricks’ view is true.
intuition presented in section 1.3. According to this explanation, authors seek to explain away the tension between their views and common sense because it would be a major strike against one’s theory if it entailed that most people are epistemically reckless and lack justification for any of their beliefs. Authors employing this strategy are not giving any special evidential weight to intuitions and are instead simply showing that their theories do not have such implausible implications. I argued that this interpretation of the explaining away strategy is not the best interpretation of most ontologists, but it seems to best match Merricks’ motivations for addressing the tension between his view and common sense.\textsuperscript{80}

As seen in the case studies considered in this and previous chapters, the earlier a work was published the less likely it is to employ intuition-talk. This holds for van Inwagen and Merricks as well. Van Inwagen’s work in 1990 makes no use of ‘intuition.’ ‘Intuitive’ is used somewhat frequently, but most often this term is used to denote the easy-to-understand sense of the term (1990, 82-83, 94, 193, 223, 248, 274-276, 295). Other uses are most charitably interpreted as pre-theoretical beliefs (34, 91, 206, 253). This is especially clear where van Inwagen states that he has “no intuitive or preanalytic conviction” in favor of a particular view (206). Elsewhere van Inwagen explicitly identifies intuitions with beliefs, stating, “Philosophers call their philosophical beliefs intuitions because ‘intuition’ sounds more authoritative than ‘belief’” (1997, 309). In summarizing his meta-philosophical view, van Inwagen offers the following methodological remarks: “The best reasons for accepting a philosophical thesis generally involve the ways in which a host of more or less unrelated problems, convictions, observations, and arguments interact with that thesis.” (1990, 115) This provides further evidence of van Inwagen’s generalist leanings, with a special emphasis on a theory’s coherence

\textsuperscript{80} See section 1.3 for further discussion of compatibilist and incompatibilist strategies for explaining away the intuitions.
with one’s other theoretical commitments. Merricks offers a similar summary of his meta-
philosophical position (2001, 87). Consistent with the general trend in ontology, no special 
mention is made of intuitions and the emphasis is on the complexity of the procedure and the 
multitudes of relevant considerations. I conclude that Merricks and van Inwagen take ontological 
intuitions to be something like pre-theoretical beliefs, and neither gives these beliefs any special 
evidential weight.

I now turn to consider Derek Parfit. Similar methodological norms are seen in his work, 
but they lead him to opposite conclusions. I will focus on Parfit’s most influential work, Reasons 
and Persons, and in particular on part three, which is the most often cited portion of this work 
(1984, 199-345). After outlining the logical space of theories regarding self-interest and practical 
rationality, Parfit proceeds to argue in section three for his account of personal identity and its 
moral implications. This view, reductionism, holds that human persons may be reduced to (are 
nothing over and above) their physical and psychological qualities. I will highlight six features of 
Parfit’s philosophical methodology: reliance on cases, concern with what we care about, 
appealing to empirical evidence, challenging competing views with reasoning and arguments, the 
goal of systematicity, and a willingness to discard his case-based intuitions when they conflict 
with the a view that he takes to be most justified by non-intuition criteria (e.g. systematicity).

Unlike most ontologists, Parfit’s arguments are often motivated by hypothetical 
scenarios.81 These are bizarre, science fiction thought experiments involving the fission, fusion 
or replication of persons. The most influential thought experiment is as follows.

I enter the Teletransporter. I have been to Mars before, but only by the old method, a 
space-ship journey taking several weeks. … The Scanner here on Earth will destroy my 
brain and body, while recording the exact states of all my cells It will then transmit this

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81 I suspect that the primary reason for this is Parfit’s dual interest in metaphysics and ethics. Like ethicists, he relies 
heavily on thought experiments and, like metaphysicians, he shows a great interest in systematicity and empirical 
adequacy (discussed in greater detail below).
information by radio. Traveling at the speed of light, the message will take three minutes to reach the Replicator on Mars. This will then create, out of new matter, a brain and body exactly like mine. (1984, 199-200)

The purpose of this thought experiment is to elicit an intuition. Specifically, the thought experiment is meant to elicit a pre-theoretical belief (200).\(^82\) This is seen throughout his work. A hypothetical scenario is presented in order to elicit a belief, but often times this belief is made salient only to be challenged. Parfit’s own view on this case is that it is as good as ordinary survival (201), but he uses a similar case (Branch Line) to show that if personal identity is what really matters, teletransportation and ordinary survival are both as bad as death (215). This emphasis on what matters and the comparative value of possible scenarios is somewhat odd for someone working in ontology. It seems that descriptive, ontological facts cannot depend on what we want. Parfit agrees, but he reminds the reader that “there is no deep further fact” regarding personal identity (343). Using the language of Buddhist reductionism about persons (a view that heavily influenced Parfit), persons are “empty of selves” such that personhood can and should be reconceived to fit what matters practically (Siderits 2007, 32).\(^83\) On his view, personal identity just consists in Relation R, which he defines as, “psychological connectedness and/or psychological continuity – with the right kind of cause, provided (b) that this relation does not take a ‘branching’ form, holding between one person and two different future people” (Parfit 1984, 216). Were Parfit a non-reductionist, criterion (b) would be seen as unacceptably arbitrary and at odds with his generalist methodology. This is because (b) states that a person’s existence may depend on wholly extrinsic factors. Because Parfit believes that personal identity is not a

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\(^82\) After presenting the story, Parfit claims that “these cases arouse in most of us strong beliefs.” (200) These beliefs cannot arise prior to any philosophical engagement, given that one is engaging in philosophy upon considering such thought experiments, but they are pre-theoretical in the sense that these beliefs are generated without explicitly inferring them from any philosophical theory of personal identity.

\(^83\) See Parfit’s discussion of Buddhist reductionism (1984, 502).
deep fact, he can consistently apply this restriction without compromising the parsimony and unification of his more general ontological theory.

For Parfit and other reductionists, our pre-theoretical beliefs are used to motivate the arguments, but the resulting view strongly conflicts with these intuitions. In Parfit’s words, “most of us have false beliefs about our own nature,” and part of the goal of Parfit’s work is to highlight these deeply held false beliefs and overcome them (1984, ix). Although our intuitions are taken as starting points for metaphysical inquiry, they are quickly discarded in light of the theoretical advantages of Parfit’s counter-intuitive theory. These theoretical advantages may be summarized as empirical adequacy and systematicity. The view that Parfit takes to be the most plausible alternative to reductionism, the Cartesian Ego account, should be rejected because it conflicts with scientific evidence (228, 238). Similarly, reductionism is motivated by considering case studies from empirical psychology and neuroscience (245). Scientific studies regarding, for example, split brain cases and dissociative identity disorder are treated evidence that his theory can explain better than rival theories. The norm of systematicity is seen in his criticism of non-Cartesian, non-reductionist views. These views are, Parfit holds, unacceptably arbitrary because they entail that the replacement of a single cell could make the difference between death and survival (238-240). In contrast, he argues that reductionism gives a consistent, principled answer to the wide range of hypothetical scenarios considered. In these respects Parfit’s methodology is highly similar to that seen with Lewis and Sider. He follows these permissivists in endorsing the linguistic theory of vagueness, except that his purpose is to deny that vague entities are irreducibly real.  

84 Although he relies more on thought experiments, the intuitions elicited are not

84 Parfit only explicitly argues for reductionism about persons, but his arguments appear to commit him to the same position regarding entities falling under other vague predicates (e.g. cats, tables, and nation states). Given that Parfit compares persons to nations and clubs, we may reasonably infer that he would take a similar position on these sorts of entities.
taken to have great evidential weight and are often discarded after deliberation. The overriding epistemological criteria are empirical adequacy and systematicity.

I conclude by considering the implications of Parfit’s work for the meaning of ‘intuition’ in ontology and the role intuitions are thought to play by ontologists. As with Lewis and other writers from the sixties, seventies, and early eighties, Parfit rarely employs ‘intuition’ and its cognates. In over five hundred pages of writing he only explicitly uses intuition-talk in two places. First, in rejecting the self-interest theory, he observes that arguments in favor of self-interest “have some intuitive appeal,” but the epistemic significance of this intuitive appeal pales in comparison to the significance of his arguments (1984, 193). Second, he notes: “My reaction is not merely an intuition. It is the judgment I reach by reasoning as follows.” (368) This passage highlights that Parfit follows the general consensus that intuitions are judgments that are not the result of explicit argumentation and reasoning. Given the scarcity of intuition-talk throughout his work, we should look towards his talk of pre-theoretical belief as an indicator of what he takes to be our intuitions. As with the previous authors, intuition should be understood as pre-theoretical beliefs; and, as with previous authors, the evidential weight of our intuitions is taken to be relatively insignificant in comparison to the epistemic virtues of empirical adequacy and systematicity.

Peter Unger goes further than any of these three in challenging our intuitive beliefs in ontology. The intuitions, for Unger, are the posits of common sense that come to us naturally on the basis of experience (1979, 117). These beliefs are shared cross-culturally, and might seem to thereby enjoy a privileged epistemic position, but Unger argues that reasoning and scientific

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85 On one occasion Unger speaks of his “linguistic intuitions” as “my own idiolect,” which is a different conception of intuitions (1979, 131). This reference to linguistic intuitions should be distinguished from his more general talk of intuitions without qualification, and ‘intuition’ (without qualification) is consistently used to refer to pre-theoretical beliefs captured in common sense judgments (117, 120, 125, 131, 138, 139, 145).
knowledge show us that all of these intuitions are mistaken (120). On his view, common sense is internally inconsistent, which on its own is taken to be damning (139). However, he does not take the intuitions to be entirely irrelevant to ontological inquiry. Intuitions regarding abstract ontological principles are used as part of his argument against our case-based intuitive judgments (125). Although the evidence afforded by intuitions is inconsistent, we may use other sources of evidence, such as logic, reasoning, and scientific discoveries, to decide which intuitions to preserve and which to discard. Unger holds that we should preserve our intuitions regarding logic and abstract principles because these are internally consistent, but we should reject the case-based intuitions because these conflict with our abstract principles and the received wisdom of the sciences. His considered view is that no ordinary objects or people exist, and this is clearly at odds with our intuitions. As evidence for a sensitivity to the significance of this departure from our pre-theoretical beliefs, Unger explains away the intuitions by showing that our pre-theoretical beliefs are false but nonetheless close enough to the truth that they are entirely reasonable prior to philosophical investigation (150). As with Merricks, this is best understood as showing that his view does not have the implausible conclusion that most people are radically mistaken rather than aiming to make his account consistent with the evidence afforded by intuition.

As with all of the theorists considered thus far, Unger’s use of ‘intuition’ and its cognates is best interpreted as referring to pre-theoretical beliefs. He does not place great evidential weight on the case-based pre-theoretical beliefs, but he does take seriously those judgments (perhaps intuitions) regarding abstract principles. In section three I explicitly consider whether such abstract principles properly count as intuitions. There I will argue that ontologists’ use of ‘intuition’ and its cognates does not typically refer to such abstract principles, but they should
nonetheless be treated as intuitions. For now I postpone details discussion of this topic and turn to consider particularism. As I am defining particularism here, particularists are those theorists who place far greater evidential weight on case-based judgments than abstract principles. I will argue that, despite the methodological disagreement between particularists and generalists on the evidential weight of these intuitions, theorists in both camps use ‘intuition’ and its cognates in a way that is most charitably interpreted as referring to our pre-theoretical beliefs.

3.2.4 Conservativism & Particularism

We have seen that eliminativists and permissivists are united in preferring systematicity (and the various theoretical virtues) over staying true to our intuitive beliefs, and their writings provide some evidence for the thesis that ‘intuition’ in ontological discourse refers to pre-theoretical beliefs. I now turn to consider conservatives, those who endorse ontological accounts that closely match our pre-theoretical beliefs. These authors differ from permissivists and eliminativists in showing a strong preference for staying true to our intuitions even at the cost of abandoning other theoretical virtues (e.g. generality, explanatory power, or coherence with physics). Despite this disagreement, I will argue that conservatives’ uses of ‘intuition’ and its cognates match that of permissivists and eliminativists, pointing to a conception of intuitions as pre-theoretical beliefs. I consider the three conservatives included in our top-twenty list above: Kripke, Lowe, and Markosian. Of these three, Saul Kripke has been the most influential figure in contemporary analytic philosophy and uses ‘intuition’ and its cognates with the greatest frequencies.\textsuperscript{86} As such, his work deserves extensive consideration. I will argue that Kripke

\textsuperscript{86} Kripke uses ‘intuition’ and its cognates at least 42 times in \textit{Naming and Necessity}. Most of these uses are found in the first third of the book, suggesting that he takes our intuitive judgment to be most important when beginning philosophical inquiry.
endorses conservatism, particularism, a strong reliance on intuitions as evidence, and a conception of intuitions as pre-theoretical beliefs. In the process, brief remarks will be made to the effect that Lowe and Markosian largely agree with Kripke on these matters.

In *Naming and Necessity* (1972), Kripke presents a series of thought experiments to motivate philosophically significant conclusions regarding language and the world. His main aim is to challenge descriptivist theories of reference and to show the ontological implications of the theses he advocates in their place. Throughout the book he expresses strong particularist leanings, meaning a preference for case-based judgments over general, abstract theories. As a striking example, in criticizing the cluster concept theory of names, Kripke presents the following remarks on philosophical theories:

> It really is a nice theory. The only defect I think it has is probably common to all philosophical theories. It’s wrong. You may suspect me of proposing another theory in its place; but I hope not, because I’m sure it’s wrong too if it is a theory. (64)

His claim is not merely that this particular theory is false, but that any philosopher’s attempt to give a general, abstract account of phenomena (in regards to philosophical issues at least) will be misguided. For any given topic in philosophy, general, systematic accounts are doomed to fail. This stands in stark contrast to the accounts presented above in defense of permissivism and eliminativism. In answering the question of when composition occurs, universalists hold that it always occurs and nihilists that it never occurs; according to Kripke, both accounts are false simply because of the universality of their claims. Markosian, writing explicitly on universalism and nihilism, insists that both should be rejected because their answers to the special composition question conflict with our intuitive judgments of when composition occurs (1998, 219-228).

According to Markosian, any attempt to give a general theory in mereology is doomed to fail.87

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87 In a more recent work Markosian is more modest in his criticisms of general accounts, but his earlier view on the importance of concrete case intuitions remains firm (Markosian 2013).
General theories may have their uses, but Kripke insists that we should not apply such theoretical constructs where they are not in line with our initial intuitive judgments (1972, 18). In a similar vein, EJ Lowe argues that “the formal systems approach to ontology is misguided” (2011, 106).

This anti-theory meta-philosophy is part of Kripke’s more general criticism of philosophical practice. Kripke frequently contrasts the intuitive with the philosophical, clearly siding with intuition in each case (1972, 4, 15-18, 41-43, 45, 64, 76, 148). In the following passage Kripke is quite explicit:

It is even suggested in the literature, that… this notion [of a distinction between necessary and contingent properties] is just a doctrine made up by some bad philosopher, who (I guess) didn’t realize that there are several ways of referring to the same thing. I don’t know if some philosophers have not realized this; but at any rate it is very far from being true that this idea [that a property can meaningfully be held to be essential or accidental to an object independently of its description] is a notion which has no intuitive content, which means nothing to the ordinary man. … Now which one is being the philosopher here, the unintuitive man? It seems to me obviously to be the second. The second man has a philosophical theory. (41) (italics added)

Here Kripke identifies the philosopher with the unintuitive man, and identifies the intuitive as that which has meaning to the ordinary man. On his view, philosophers fall into error when they let their theories and technical devices lead them away from our pre-theoretical, ordinary judgments. This is not the view that we should defer to scientists, linguists or any other group with some special expertise. A philosophical theory or distinction may be shown to be defective if, for example, “no competent schoolchild would be so perversely philosophical as to make it” (17). These remarks indicate a strong endorsement of conservativism, the view that most of our pre-theoretical ontological judgments are correct. We should endorse a conservative ontological view because, Kripke holds, our intuitions should be treated as evidence. They are not merely some evidence, to be weighed against other types of evidence in a general cost-benefit-analysis method of evaluating ontological accounts, and they should not be dismissed in favor of non-
intuition theoretical virtues. On his account, intuitions are “very heavy evidence,” such that it is unclear to Kripke “what more conclusive evidence one can have about anything, ultimately speaking” (42). The correct method for determine when composition occurs is to consider a range of particular cases and stick with one’s intuitive judgments regardless of the parsimony or simplicity of the resulting view. In Markosian’s words, “we should weigh all the options, consult our intuitions, and then choose the overall theoretical position that fits best with those intuitions” (1998, 237). I conclude from these passages that Kripke, Lowe and Markosian endorse particularism, conservatism, and the evidential significance of intuitions, but this leaves open the question of how these authors conceive of the nature of our intuitions. I will argue that their use of ‘intuition’ and its cognates is most charitably interpreted as identifying intuitions with pre-theoretical beliefs.

As seen above, Kripke contrasts the philosopher with the intuitive man. What makes philosophers unintuitive is that they endorse theories with strikingly counter-intuitive implications. David Lewis is a paradigm example of who Kripke has in mind when he speaks of the “unintuitive man” (1972, 41). Lewis’ account is systematic, provides an answer to all of the puzzle cases, and has a strong internal coherence. This systematicity comes at the cost of abandoning our case-based intuitions. Thus, Kripke rejects Lewis’ account because of its “intuitively bizarre” implications (45). Such passages give us reason to think that Kripke means to be referring to pre-theoretical beliefs when using ‘intuition’ and its cognates. This is further evidenced by his “schoolchild” litmus test (17). Intuitions are the sorts of judgments that require no special expertise beyond that of a competent child. They are “direct” (14) and “natural” (5, 15, 45). Thus, whatever else intuitions might be for Kripke, they are the sorts of judgments that one forms prior to philosophical theorizing and deliberation.
The same conclusion should be reached regarding Lowe and Markosian. Lowe speaks of our “pre-theoretical intuitions” (1998, 144) and uses ‘intuition’ and ‘common sense’ similarly (115). In challenging Lewis’ account, Lowe provides evidence that his account is not supported by intuition by observing “the widespread ignorance of the very existence of temporal parts” (131). Given that non-philosophers are ignorant of Lewis’ technical vocabulary, Lewis cannot rely on intuitions as evidence for his account. This argument suggests that Lowe is conceiving of intuitions as pre-theoretical judgments because this conception explains the connection between the non-philosophers’ ignorance and the absence of a related intuition. Markosian’s usage is highly similar to Lowe’s. He speaks of our “pre-theoretical” and “pre-philosophical intuitions” as strong evidence that must be taken into account (1998, 211, 233). These pre-theoretical judgments are what we are naturally inclined to say (2013, 20) and identified with common sense in several places (1998, 220, 223, 228, 233; 2013, 6, 18). Like Kripke, Markosian is interested in “the intuitions of the man on the street” rather than the judgments of philosophers (1998, 228). These passages indicate that Markosian, Lowe, and Kripke use ‘intuition’ and its cognates as generalists use these terms, to refer to our pre-theoretical beliefs.

3.3 Objections and Replies

In this chapter I have argued for two central theses.Ontologists’ uses of ‘intuition’ and its cognates points to a conception of intuitions as pre-theoretical beliefs, and, so conceived, most ontologists treat intuitions as weak, defeasible evidence for or against ontological theories. In this section I consider objections to these theses. The first two objections challenge my definition of ontology intuitions as being too inclusive and too exclusive. My definition would be too inclusive if a strong rationalist conception of intuitions accurately described the linguistic
practices in ontology, and it would be too exclusive if ontological intuitions need not be pre-
theoretical. The third objection is that I have understated the extent to which ontologists rely on
intuitions as evidence. I will argue that the first and second objections are mistaken, but the third
highlights an important sense in which generalist ontologists still rely quite heavily on intuitions,
despite their frequent claims to the contrary.

The first objection is presented in the spirit of George Bealer and proceeds as follows. The
texts considered above provided significant evidence that ontologists conceive of intuitions
as pre-theoretical beliefs that do not essentially require any special phenomenology, modal
content, conceptual etiology, or a priori justification. This may be an accurate description of
ontologists beliefs about their intuitions, but, the objection continues, these beliefs are seriously
mistaken. All philosophical intuitions, including ontological intuitions, are a priori intellectual
seemings grounded in conceptual competence with modal content and a special phenomenology.
Insofar as ontologists are interested in addressing core philosophical issues, they must be relying
on such mental states as evidence. Given that ontology is a paradigm a priori discipline, it would
be a mistake to characterize their evidential norms in any other way.

As a first response to this objection, it should be observed that the argument for the
deflationary conception of ontological intuitions was largely based on ontologists’ unreflective
uses of ‘intuition’ and its cognates rather than explicit discussions of the meaning of the term.\(^8^8\)
Thus, even if ontologists’ beliefs about their own methodology are seriously mistaken, we have
seen a great deal of evidence that is independent of these beliefs. Insofar as a term’s meaning is
based on actual use, the texts cited above provide significant evidence against a robust rationalist

\(^8^8\) By ‘unreflective’ I simply mean that the passages cited did not involve reflection and deliberation on the meaning
of the term ‘intuition.’ The passages cited certainly indicate significant reflection, but not reflection on the meaning
of ‘intuition.’
conception of ontological intuitions. The textual evidence points against each of the special restrictions proposed by the rationalist conception of intuitions. I consider each in turn.

Many uses of ‘intuition’ by ontologists refer to a priori judgments, but not all. Some of our basic evidence for object individuation comes from perceptual experience (Wiggins 2012, 7). The claim that your eyeglasses and Pluto compose an object is counter-intuitive (Johnston 2006, 697). Sir Percy Cox created new boundaries in the Middle East by drawing lines on a map (Smith & Varzi 2000, 415). I weigh more than three pounds (Williamson 2007, 214). There exists a ham sandwich (Fine 1999, 62). Such judgments appear to be straightforwardly a posteriori. If the a priori criterion holds, then we must infer one of two awkward conclusions. One possibility is that ontologists frequently misapply ‘intuition’ and its cognates. This is certainly possible, but absent any good linguistic evidence for this hypothesis, we should assume that the standard usage of the term is appropriate. The other possibility is that when an ontologist says, “I have the intuition that there are mountains,” what she really means to be saying is, “I have the intuition that if there were matter arranged in a mountain-like-shape, then there would be mountains.” This interpretive strategy has the cost of making the intuition claims strikingly less intuitive, in the sense that it makes these claims more difficult to understand and more dependent on theoretical assumptions. The intuitiveness of the intuitions comes from their immediate comprehensibility and plausibility without any prerequisite theoretical assumptions. Thus, this proposed systematic replacement of a posteriori claims with a priori claims is prima facie in tension with the sense of intuition found in ordinary discourse, philosophical discourse, and ontological discourse in particular. For these reasons we should reject both strategies for downplaying the significance of apparently a posteriori intuitions.
Similarly, ontologists frequently appeal to intuitions with modal content, but as seen with the examples above this is not always the case. As with the seemingly a posteriori judgments, one could reword every non-modal judgment as a modal claim, but this would not be a charitable interpretation of the field. Ontologists are concerned with possibility, but they are also interested in describing the actual. The translation of “Mount Everest exists” into “There is a possible world in which Mount Everest exists” takes away from the ontological significance of the original statement. Regarding the phenomenology associated with intuiting, the books and articles cited here almost never reference anything like an associated phenomenology. The one exception to this is Kripke’s frequent use of ‘seems,’ but these uses of ‘seems’ are most naturally interpreted as hedging qualifications rather than as reference to the content of his experience.

Finally, the criterion of conceptual etiology should also be rejected. As seen above, ontologists generally wish to distance themselves from the practice of conceptual analysis, which provides some evidence that they do not treat intuitions as necessarily grounded in conceptual competence. However, one might think that, regardless of their stated purpose, all of our judgments are caused by the our concepts. I agree. In the following chapter I will argue that even the eye movement of young infants is often caused by their concepts, but this does not favor the criterion of conceptual competence for intuitions. The role that concepts play in forming ontological intuitions is no different than the role it plays in forming judgments in chemistry, literary analysis, or any other domain of inquiry. If ontologists were primarily interested in conceptual analysis, the criterion of conceptual competence would be informative and restrictive, but whatever role concepts play in forming ontological intuitions is not relevantly different from the role it plays in forming any and all linguistically formulated judgments. Thus, we should

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reject the criterion of conceptual competence as either false (on a strong reading) or trivially true (on a weak reading). Based on these considerations, I conclude that the rationalist alternative to my definition does not fit well with the evidence from the ontology literature. I now turn to consider a second challenge to my definition.

The first objection held that my definition is too inclusive because we should conceive of intuitions as necessarily involving various rationalist criteria. The second objection challenges my proposal in the other direction, holding that this definition is too exclusive. The reason, according to this objection, is that it requires that our intuitions be judgments that were formed, or would have been formed upon prompting, prior to any philosophical reflection or theorizing. But this criterion may be too stringent. Much of what ontologists discuss requires a considerable theoretical background. There are several examples of highly theoretical judgments that ontologists describe as intuitions: substances are enduring three dimensional objects (Simons 2000, 420), two things cannot be in the same place at the same time (Wiggins 1968, 90), Cartesian dualism (Kripke 1972, 149), and every object has an essence (Johnston 2006, 660). Prior to philosophical theorizing and reflection, one typically does not possess the concepts of endurance, co-location, dualism, or essence. Since the examples noted above are paradigms of ontological intuitions, this shows that we cannot accurately characterize all ontological intuitions as pre-theoretical beliefs.

My response to this objection will depend in part on arguments that I am not yet prepared to give. In chapter four I will argue that the four intuitions cited above are all found in early infancy, and if this is right then these should all be understood as pre-theoretical beliefs. However, I acknowledge that this position is contentious and that merely stating it is unlikely to persuade anyone. For present purposes I will merely gesture at a response to this objection and
encourage patience on the part of the reader. The simple reply to this objection is that these concepts are not formed post-philosophical training. Rather, when one acquires an understanding of the term ‘dualism,’ one fixes a linguistic item to a concept or principle that one has had all along. We are, I will argue, natural dualists, and the philosophical terminology merely helps by giving a linguistic expression to this deeply held intuition. Similarly, we are naturally inclined to think of physical objects as having essences, as enduring through time, and as crowding out other objects (anti-co-location). The linguistic expressions of some ontological intuitions certainly require philosophical training, but I will argue in the following chapter that this training only makes possible the verbal expression of an intuition that was present since infancy. For present purposes, my response to this objection is limited to reminding the reader of ontologists’ own views on the nature of intuitions. Markosian is most interested in the intuitions of “the man on the street” (1998, 228). Such intuitions come to us naturally regardless of our cultural upbringing (Unger 1979, 117). Kripke speaks of the opinions of children as paradigms of intuition (1972, 17). Johnston pushes this back even further, considering the conceptual schemes of infants (1992, 661). Similarly, Wiggins is interested in our innate conceptions (2012, 9). These remarks indicate that ontologists conceive of ontological intuitions as pre-theoretical, and in the following chapter I will argue that their conception of intuitions is vindicated by research on infant cognition.

The final objection targets my second major thesis, that ontologists generally do not place significant evidential weight on intuitions. This was most clearly seen with the generalist ontologists, but, according to this objection, even generalists place a great deal of evidential weight on *some* intuitions. Recalling Ted Sider’s (2007, 37) distinction between the analytic and synthetic methods, we should conclude that generalists place a great deal of evidential weight on
our intuitions about abstract principles, even if they are relatively unconcerned with our case-based intuitions. The disagreement between generalists and particularists is about which intuitions should count as evidence, not about whether intuitions as such should count as evidence.

I largely agree with this position, but with some qualifications. First, it should be observed that ‘intuition’ and its cognates are used far more frequently to refer to case-based judgments, and thus the paradigm intuitions are our case based judgments. Along with being the paradigms intuitive judgments, case-based intuitive judgments are also quantitatively far more numerous than abstract-principle intuitive judgments in the literature. In light of this, it is accurate to say that generalists are less concerned with our intuitions because they place little evidential weight on the vast majority of the judgments characterized as intuitive. Second, the divide between generalists and particularists is not limited to which types of intuitions they take seriously. As seen above, generalists are characteristically concerned with a wide range of methodological norms that are not taken to be as significant for particularists. Generalists seek unified theorists with great explanatory power that cohere with their other philosophical commitments and the received wisdom of the sciences. They aim at systematicity, simplicity and coherence. This norm is not entirely absent in particularists’ writings, but it is given far greater emphasis by generalists. Unless we conceive of intuitions so broadly as to include all of these noted theoretical virtues, there is an important sense in which generalists give our intuitions significantly less evidential weight, even though there are some intuitions that they take quite seriously – namely, those that survive the process of reflective deliberation and cost-benefit-analysis.
3.4 Intuition Nativism

In chapters one and two I defended the conclusion that ‘intuition’ is ambiguous in philosophical discourse. The proposed definitions and textual analysis considered in this chapter support the conclusion that ‘intuition’ is not ambiguous in ontological discourse, and ontological intuitions are best understood as pre-theoretical beliefs concerning physical objects. In the next chapter I make this claim more precise, arguing that the theories, principles, and case-based judgments described by professional ontologists as intuitive match the theories, principles, and case-based judgments ascribed to infants by cognitive psychologists. I will argue that the pre-theoretical nature of ontological intuitions is more drastic than many would initially suppose. Following Goldman I will defend the claim that our intuitions are “prior to and below the level of language” (2007, 18). In pursuit of the most paradigmatic cases of pre-theoretical beliefs, we should focus our attention on the earliest developments of these judgments. These judgments are not merely those that non-philosopher adults would be inclined to make upon prompting. I hope to show that our ontological intuitions are produced by a physical reasoning system found in early infancy. Specifically, I will argue that the cognitive mechanisms responsible for ontological intuitions develop between two and twelve months of age. From these empirical observations I will argue that the common practice in ontology of not placing significant evidential weight on our intuitive judgments is epistemically justified, and we should reject ontological particularism.
CHAPTER 4
INTUITION NATIVISM

4.1 Infant Cognition & Intuition Nativism

We saw in chapter three that most ontologists use ‘intuition’ and its cognates to refer to pre-theoretical beliefs regarding the nature and existence of physical objects. This raised two further questions. First, how should we understand ‘pre-theoretical’? This could mean beliefs on some topic prior to specifically addressing that topic, prior to any formal philosophical training, or prior to any conscious, deliberate reasoning regarding the subject matter. I will argue that our intuitions in this domain generated by an innate or early developing physical reasoning system. Specifically, I will defend intuition nativism.

**Intuition Nativism**: In ontological and mereological discourse in analytic philosophy, ‘intuition’ and its cognates generally refer to cognitive assessments concerning the nature and existence of physical objects produced by physical and agential reasoning systems that are innate or early developing and fully developed by age two.

If this is right, our pre-theoretical intuitions regarding ontology arise from (almost) universal mechanisms in human cognition. This will raise a second question. What normative implications does this interpretation of ‘intuition’ have for professional ontologists? In answer to this question, I will defend a second thesis, the correctness of standard methodology.

**Correctness of Standard Methodology**: The majority of professional ontologists are right in (1) treating our intuitive judgments as a starting point to ontological inquiry, (2) treating these judgments as defeasible evidence, and (3) giving significantly greater evidential weight to general, abstract intuitions over specific, case-based intuitions.

If this is right, it will turn out that the majority of ontologists are already on the right track, at least in regards to this specific issue, but the minority of ontologists who endorse particularism or eschew the evidential weight of intuitions ought to follow the majority in adopting a generalist methodology that gives intuitions at least some evidential weight.
My defense of intuition nativism and the correctness of standard methodology shall proceed as follows. First, I offer a brief survey of the psychological literature on infant cognition in relation to ontology and mereology. I will argue that there is a striking and non-accidental symmetry between the descriptions of infant cognition and what professional ontologists characterize as intuitive in regards to theories, principles, and case-based judgments. This provides evidence in favor of intuition nativism. After defending intuition nativism, I will briefly review the evidence seen in chapter three regarding ontologists’ typical views on the evidential weight of intuitive judgments, arguing that they take intuitions to be useful starting points for inquiry, but that we should be willing to discard our intuitions when they conflict with theories that have various theoretical virtues. I then conclude by defending the correctness of standard methodology and considering what normative implications this has for professional ontologists.

In this section I will outline evidence and theoretical accounts from cognitive psychology regarding infants’ perception, reasoning, and knowledge of physical objects. This evidence will be used to argue that ontology and infant psychology, despite their relative socio-linguistic isolation, have developed strikingly similar concepts, theories, and principles regarding physical objects.\(^{90}\) I will begin by offering a brief account of the history and standard methodology of infant research and then proceed to consider the principles of persistence, spatio-temporal continuity, cohesion, and anti-co-location as intuitive constraints on what arrangements of matter count as objects and under what conditions these objects persist through time and change. In addition, I consider the intuitive distinction between agents and mere things and evidence that this distinction is made in early infancy. I will argue that these studies on infant cognition are

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\(^{90}\) There are some notable exceptions to the general lack of communication between metaphysicians and infant researchers (Spelke 2000; Xu 1997; Hirsch 1997; Hall 1998; Rips et al. 2006; Scholl 2007), but these exceptions are quite rare.
strong evidence for intuition nativism because the majority of judgments typically characterized as intuitive by metaphysicians are comparable to the non-propositional judgments of infants.\(^91\)

Infant research began, as a systematic investigation, with Piaget’s work (1952, 1954). He argued that infants’ cognitive lives are fundamentally different from those of normal adults. On his view, infants younger than eight months only cognize the existence of objects immediately present in perception. For infants, an object is “a mere image which reenters the void as soon as it vanishes” (1954, 11).\(^92\) They are fundamentally egocentric, with their world limited to their experience and the direct product of their actions. At approximately nine months, infants begin to recognize that objects continue to exist when not perceived, but they do not recognize that these objects have objective spatial locations (that is, locations in the world independent of their locations in perception). It is not until 18 months, on his view, that infants recognize the existence of “real objects independent of the self and persisting in their substantial identity” (86).

This view, radical as it was, had considerable empirical support. For example, he discovered that young infants would reach for a desirable object when visible but would not search for hidden objects. Such experiments indicated that infants are only aware of the objects they currently perceive. If this were right, then intuition nativism would be false. The judgments characterized as intuitive by ontologists are clearly judgments about persisting, mind-independent objects. If infants younger than eighteen months lack analogous representations of the physical world, then either (a) metaphysicians’ intuitions are not generated by an innate physical reasoning system, or (b) this system (if it exists) does not play a significant role in

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91 One might object that it is a contradiction to speak of non-propositional judgments. It is standard practice in infant psychology to refer to the judgments of pre-linguistic infants, but if the reader objects to this practice she may instead read “non-propositional judgments” as “non-propositional cognitive assessments.” The arguments to follow do not depend on how we define ‘judgment’ or its cognates.

92 Similar remarks are made by Quine (1960). He suggests that infants’ worlds are radically different from our own because ontological commitment is derived from language. On his view, the infants’ world, void of count and mass nouns, is not a world with objects and substances.
determining the content of ontological and mereological intuitions. This second possibility is consistent with intuition nativism but would significantly undermine the value of the thesis in explaining and evaluating our intuitions. Fortunately, we have good reason to question Piaget’s account.

The problem with Piaget’s inference is that he failed to control for other variables. His experiments tested for infants’ object recognition, but they also required that infants form and act upon the intention to retrieve the hidden object (Bower 1974; Boudreau & Bushnell 2000; Hespos & Baillargeon 2006). Infants might have failed to seek out the desirable object because they did not recognize its existence, but there are other possibilities as well. Piaget’s tasks required significant cognitive processing in relation to perception, cognizing the persistence of objects, forming intentions, and executing those intentions. Thus, it might also have been that the tasks were too cognitively demanding in ways unrelated to object cognition or that infants failed to retrieve the desirable object because of a motor failure rather than a cognitive failure.

To test these alternative interpretations, researchers have developed a wide variety of experimental methods (e.g. Baillargeon, Spelke & Wasserman 1985; Luo et al. 2003). The most significant method, for present purposes, is the violation of expectations method (hereafter VOE). I will be considering data from several research paradigms, but most of the studies are versions of VOE. This research paradigm is an instance of Fantz’s looking-time paradigm, which measures the duration of a subject’s continuous gaze on an object or scene (1961). The VOE method involves two conditions, experimental and control. In the experimental condition a stimulus is provided that researchers anticipate will violate the expectations of the subjects. Researchers then measure how long infants in each condition look at the stimulus. As has been known for quite some time, infants have a preference for observing novel stimuli (Fagan 1970;
Tighe & Leaton 1976). Thus, if subjects look longer at one scene over another, we can infer that their preference for this scene is based on the novelty or strangeness of this scene for the subject. If infants look longer at A than B, we may reasonably infer that, ceteris paribus, A is more novel than B. Where the two scenes are nearly identical, except that A has some seemingly physically impossible feature (e.g. a box floating in midair), and infants look longer at A than B, we may infer that the infants looked longer at A than B because they were surprised by the novel event of a box floating in midair. And, we may infer that they were surprised because this experience of a seemingly physically impossible event violated their expectations regarding the typical behavior of physical objects. In describing such experiments, I will use ‘impossible event’ as shorthand for ‘an event that would surprise most human observers because it appears to defy our expectations about what is physically possible.’

If infants’ behavior in VOE tasks is consistent across a wide range of studies, then such data may be used to show that infants have expectations about the behavior of objects in the environment that persist through time, independent of the infants’ desires. This would undermine Piaget’s egocentric account of infant cognition by challenging his view that infants only judge an object to exist when it is immediately perceived. Unlike Piaget’s manual search tasks, VOE tasks do not require deliberation, planning, or motor behavior, and thus are preferable for discovering the limitations of infants’ object cognition. As will be detailed below, several studies have shown that infant object cognition does not depend on the ability to physically interact with the object.

In what follows I will briefly consider a wide range of experimental results and defend an interpretation of this data according to which infants have an innate or early developing physical reasoning system that causally influence and underlie their expectations about the nature and existence of physical objects. On this view, infant physical reasoning differs from adult physical

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93 This preference is even seen in infants as young as one day old (Slater, Morison & Rose 1984).
reasoning in degree rather than in kind. Their cognition is significantly limited both in terms of their knowledge base and their ability to perform complex cognitive activities, such as those required for Piaget’s tasks, but this is consistent with their having the same basic cognitive mechanisms for perceiving and interpreting the world. Below I consider several studies and argue that infants’ behavior in these studies is best explained by appealing to the presence of intuitive ontological principle and judgments. I specifically consider the persistence, spatio-temporal continuity, cohesion, and anti-co-location principles, sensitivity to sortals and essences, and distinguishing between agents and mere things. In each section I begin by briefly surveying what ontologists typically characterize as the intuitive principles or judgments in this domain and then consider how their characterizations are reflected in infants’ behaviors.

4.1.1 Persistence, Spatio-temporal Continuity, & Cohesion

The principles of persistence, spatio-temporal continuity, and cohesion play a significant evidential role in contemporary ontology, and these three are also found in early infancy. This congruence will be used as evidence in favor of intuition nativism because it indicates that the intuitions of professional ontologists are generated by an innate or early developing physical reasoning system.

A basic assumption of many ontologists is that objects persist through time. When a view entails that ordinary objects do not persist, ontologists generally take this to be a serious objection to the view. For instance, one of the serious objections to universalism is that it entails that many ordinary physical entities do that change parts do not persist in the way that we would intuitively suppose. For example, if universalism is true, the object that we would intuitively identify as a human organism on Monday will not be identical to any organism on Friday
because that object would be partially composed of matter excreted and not include any new matter digested by the organism between Monday and Friday (van Inwagen 1990, 75). The problem is that universalism seems to entail mereological essentialism (objects have all of their parts essentially), and this view has been challenged because it entails that an object ceases to exist if it loses a single part (Plantinga 1975, 470). As another example, in challenging perdurance theory, Thomson observes that it entails that objects are constantly coming into and going out of existence, and this is “obviously false” (1983, 213). As a final example, Hoffman and Rosenkrantz observe that a fundamental aspect of our intuitive picture of objects is that they continue to exist through time (1997, 2). This is one of the strongest ontological intuitions.

If nativism is true of this intuition, it should also be seen in early infancy. Not all innate features of organisms are found in early infancy (e.g., mating behavior), but we should expect innate physical reasoning mechanisms to be present in infancy because, unlike mating, infants routinely engage with the physical environment. Baillargeon argues that infants possess a principle of persistence, according to which physical objects continue to exist through time, maintaining most of their physical properties (2008). This is supported by several experimental results (e.g. Baillargeon 1986, 1987; Baillargeon & Graber 1987; Baillargeon & DeVos 1991; Wynn 1992; Wang et al. 2005). Such studies typically present infants with occlusion events, first introduced by Moore et al. (1978), in which subjects are presented with an object that is partially or fully hidden behind some other object. In Wynn’s study, for example, 5 month old infants were shown a puppet that was then concealed behind a screen, and, later, a second puppet was displayed that also went behind the screen. Then, the screen was raised to display either one puppet (experimental condition) or two puppets (control condition), as seen in Figure 10 on the

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94 The principle of persistence subsumes the principles of continuity and cohesion (to be discussed in the following two sub-sections).
following page. If these infants continued to represent the puppets as persisting objects, even when out of view, then we would expect them to be surprised (and look longer) when shown only one puppet behind the display. In contrast, if infants did not have persistence expectations, then they would be equally surprised to see one or two puppets, and we should expect them to look longer at the display with two puppets because this scene would require more time to encode. As expected, Wynn found that the infants looked reliably longer at the scene with only one puppet, indicating that they have persistence expectations. Similarly, Wang et al. presented infants with an object, placed a cover over the object, and then removed the cover to reveal no object (2005). As we would expect, infants were surprised when they did not see the object.
Figure 10. Infants were shown either a possible or impossible event (number of toys behind the screen). Infants were surprised when shown a number that did not match the number expected.

Again, this provides some evidence against Piaget’s view that young infants do not represent objects outside of perception, because infants made use of representations of the
puppets even when out of view. In relation to ontology, this suggests that infants share
professional ontologists’ sentiment that objects persist through time, but this data is open to
another interpretation. According to this alternative, infants expect to see two puppets at the end
of Wynn’s event, but not because infants expect objects to persist through time. The common
sense ontology of adults is that objects persist, but we cannot automatically infer that this is true
of infants as well. Rather, it may be that infants’ expectations are determined by a stage theory of
objects according to which an object $O_1$ at time $T_1$ and spatial position $P_1$ should be followed by
a highly similar object $O_2$ at time $T_2$ in a spatial position very close to $P_1$. If infants’ reactions
were guided by a stage theory principle, their behavior would be exactly as Wynn and others
report, because they would be surprised by the absence of $O_2$ at time $T_2$ in a position very close
to the position of the original puppet.

This alternative is consistent with the data, but should be rejected on the grounds of
parsimony. Contrary to Piaget, there is strong evidence that human development is continuous
and not divided into distinct stages where development from one stage to the next involves a
radical discontinuity in cognitive development. Thus, in general we should assume that younger
and older humans operate according to the same biological, psychological, and cognitive
principles unless we have good reason to think otherwise. In the present case, the stage theory
interpretation of infant behavior is consistent with the data but lacks any independent motivation.
Absent independent reasons for thinking that infant cognition is radically different from our own,
we should instead assume the model of infant cognition which assumes the smallest degree of
cognitive distance between adults and infants that is consistent with the evidence available. The
evidence available requires that we grant some distance (e.g., regarding cognitive load
capacities), but, given that the evidence is consistent with both a persistence and stages ontology, we should conservatively assume that infant behavior is guided by a principle of persistence.

According to the principle of spatio-temporal continuity, an object which exists through time must follow an unbroken space-time worm. A spoon cannot spontaneously disappear and reappear several feet away. Nor can this spoon disappear and reappear in the exact same location several minutes later. This principle has been endorsed by Shoemaker as “logically necessary” (1963, 4) and by Armstrong as an obvious part of common sense (1963, 220). Hirsch suggests that something like this principle is a necessary condition for object identity through time, (1976, 366). This principle may also relate to our worries concerning Parfit’s teletransporter thought experiment (1984, 199). In this case, we are asked to imagine whether we would be willing to use a machine that would destroy our bodies and create atom for atom replicas millions of miles away. If the principle of spatio-temporal continuity underlies our judgments in this case, we should feel at least some uneasiness about the idea of instantly moving across millions of miles without tracing a continuous path through space and time.

Several experimental results support the conclusion that infants expect objects to move along a continuous spatio-temporal path (e.g. Baillargeon 1986; Spelke et al. 1989; Spelke et al. 1992; Spelke et al. 1994; Spelke et al. 1995; Aguiar & Baillargeon 1999; Cheries et al. 2005; Luo & Baillargeon 2005a; Bertenthal, Longo, & Kenny 2007). In Spelke’s (1992) experiment, for example, 2½-3 month old infants in the experimental condition saw the display represented in Figure 11 below. Infants were first shown a ball falling to the floor several times (until the infant was fully habituated to this event) as shown in the Habituation condition. They were then shown a platform, as seen in Consistent and Inconsistent. The screen (dotted line box) raised to occlude their sight of the platform. A ball was then dropped behind the occluder, and, when the occluder
was removed, infants either saw the ball resting on top of the platform (Consistent) or beneath the platform (Inconsistent). The event represented by Inconsistent would only be possible if the object performed the impossible feat of passing straight through the barrier. Infants were surprised by this event, as indicated by longer looking times, providing evidence that infants expect spatio-temporal continuity.

Figure 11. A ball was dropped behind an occluder (square in dotted lines) to fall on or below a platform.

In the experiments conducted by Aguiar & Baillargeon and Luo & Baillargeon, infants were shown an object that moved behind an occluding screen and the object then reappeared behind a separate screen without visibly passing through the space between the two. Infants were surprised to see the object when the second screen was raised, presumably because this violated their expectations regarding the spatio-temporal continuity of physical objects. As with the previous studies considered, this provides strong evidence against Piaget’s conclusion that infants only represent objects currently perceived because, at the time when the second screen was removed, there was no visible difference between the control condition (where infants had
no reason to be surprised by the existence of an object behind the screen) and the experimental condition (in which they looked reliably longer at the object that they had previously seen moving behind a spatially separated screen). Moreover, in relation to ontology, this provides further evidence for intuition nativism, because ontologists’ strong endorsement of the principle of spatio-temporal continuity matches the principle of continuity described by researchers in psychology. Although different words are used to describe these principles, it appears that professional philosophers’ intuitions mirror the attitudes of pre-linguistic infants.

In philosophical discourse, cohesion (physical boundedness) related intuitions have played a significant role in several important thought experiments. This is seen in Parfit’s thought experiments in which a single individual fissures into two (1984, 254). On the one hand, we have strong intuitions related to Leibniz’ law (to be discussed briefly) that push us towards saying the two resulting people cannot both be identical to the original person. On the other hand, our cohesion-related intuitions push us towards saying that each of them is the same person as the original because the bounded physical masses corresponding to the two organisms at time $T_2$ both have a continuous history of physical cohesion tracing back to the original organism at time $T_1$. Similarly, in the Ship of Theseus case we are inclined to think of the ship with all new materials as numerically identical to the original ship because of the continuous cohesion of most of the ship’s material through each stage of transformation, at least until we learn that the original materials have been reassembled. A jug is destroyed when its parts cease to cohere (Wiggins 1980, 28), and a tinkertoy house goes out of existence when its parts are disassembled (Thomson 1983, 202). These examples highlight two distinct principles of cohesion. We can understand the principle of cohesion as a criterion of synchronic identity, according to which there is a single object $O$ composed of some matter in region $R$ at time $T$ just in case the matter
in R at T is physically bound together. We can also understand it as a criterion of diachronic identity, according to which an object O persists from time $T_1$ in region $R_1$ to time $T_2$ in region $R_2$ just in case the physically bounded matter at $T_1$ in $R_1$ is continuously bounded until $T_2$. As will be seen, studies of infant cognition relate to both principles.

In addition to its significance in thought experiments, something like the principle of cohesion underlies some philosophers’ complaint that universalism is counter-intuitive (e.g. van Inwagen 1990, 75). The criticism is that, according to universalism, composite objects’ identities and mereological relations are not sensitive to physical cohesion, and this is at odds with our commonsense notion of an object. We intuitively think that objects must be bounded in certain ways, and we are intuitively skeptical of postulated entities with gerrymandered boundaries or parts. In a similar vein, van Inwagen has suggested that the contact criterion for composition “has a certain intuitive appeal” despite conflicting with a scientifically informed view of matter (1990, 34), and Hoffman and Rosenkrantz hold that objects must have a physical unity, such that disassembly destroys the object (1997, 4). These examples suggest that we are intuitively drawn to a principle of cohesion as a criterion for synchronic identity.

Researchers in developmental psychology do not distinguish between these two principles regarding synchronic and diachronic identity; following Spelke, the intuitions related to both criteria are thought to be related to a general principle of cohesion (Spelke 1990; Spelke et al. 1992; Spelke 1994; Spelke et al. 1995). According to this principle, objects are physically continuous, bounded entities, and “two surface points lie on the same object only if the points are linked by a path of connected surface points” (Spelke 1990, 49). This relates to Spelke’s corollary boundedness principle, according to which “two surface points lie on distinct objects

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95 The principles of cohesion and continuity may be subsumed under the more general principle of persistence (Baillargeon 2008), but there are important empirical results that speak to cohesion in particular (e.g. Spelke et al. 1983; von Hofsten & Spelke 1985; Spelke, von Hofsten & Kesterbaum 1989)
only if no path of connected surface points link them” (49). Spelke’s official statement of these principles suggests that they merely point to a criterion for synchronic identity, but the evidence used to support the conclusion that infants possess these principles indicates that they are also intended to define a criterion for diachronic identity. Several of the previously noted studies suggest that infants individuate objects based on physical cohesion as a criterion for synchronic identity. In such studies, even when two spatially continuous objects differed in their color, shape, or texture, young infants treated the spatially continuous matter as forming a single object so long as the matter remained together. When infants perceive a break in the continuity of two surfaces, they judge these two surfaces to belong to two distinct objects. Other research suggests that infants also use physical cohesion as a criterion for diachronic identity. For example, Kellman and Spelke (1983) presented infants with display A in Figure 12 below, followed by either B or C.

![Figure 12](image)

**Figure 12.** Infants were first shown the figure in A (or, in a separate set of conditions, a display not considered here). They were then presented with either B or C.

In line with the hypothesis that infants’ judgments are sensitive to a diachronic principle of cohesion, they found that infants looked longer at C than B. This suggests that infants inferred that there was a single rod moving back and forth in A because they were more surprised to see
two separate rods moving back and forth in C. As far as the infant could tell, the rod(s) in A moved as a single unit, which provided them with good evidence that the rod had (and retained) physical cohesion as it moved behind the occluder. As with persistence and spatio-temporal continuity, the principles of cohesion and boundedness are seen in both discussions of ontology and in the infant cognition literature. As will be argued below, this parallel provides strong evidence in favor of intuition nativism.

4.1.2 Material Coincidence

Co-location occurs when two objects occupy the exact same spatial region. Two material objects are said to be coincident when they are co-located and have all the same parts, such that nothing about their non-modal, physical properties could possibly distinguish between the two. Many metaphysicians express a strong intuition against the possibility of material coincidence (hereafter, coincidence). Hoffman and Rosenkrantz argue that it is impossible (1997, 4). Van Cleve (1986, 149) and Zimmerman (1995) opt for mereological essentialism as a means of avoiding coincidence. Similarly, worries about coincidence led Merricks to deny the existence of most ordinary physical objects (2001). This intuition led Geach (1967, 10) to embrace relative identity, and a variety of otherwise dissimilar ontologists are united in denying the metaphysical possibility of coincidence (van Inwagen 1981, 123; Heller 1990; Burke 1992, 12; Rea 2000). In this sub-section I consider some evidence from infant cognition indicating that the anti-coincidence intuition is found in early infancy as well, but this must be prefaced with a qualification. To date, no researchers have presented infants with two perfectly co-located objects; thus, none of this research directly bears on our intuitions telling against the possibility of coincidence. Nonetheless, I consider a range of studies regarding infants’ reactions to partially
coincident objects. I will argue that these studies provide some evidence for intuition nativism by showing that infants’ judgments conform to a nearby ontological principle.

The basic experimental design for testing infants’ attitudes regarding coincidence involves two objects that come into contact and stop (control, possible condition) or pass through each other (experimental, impossible condition). An example of this is the display used by Baillargeon, Spelke, and Wasserman (1985), as seen in Figure 13 on the following page.

These displays were initially presented to infants of 5½ months of age (Baillargeon et al. 1985) and later with infants age 3½ and 4½ months (Baillargeon 1987). In both experiments, infants looked reliably longer at the seemingly impossible event than the possible event, indicating that these infants were surprised by the novel stimuli by 4½ months (and by 3½ months for fast habituators). To test for the possibility that infants looked longer at the impossible event because of the full 180° rotation, Baillargeon et al. also tested a condition in which the screen rotated the full 180° without a box present and found that infants did not look longer at this event than the original possible event. Because these events only differed in regards to whether the screen
passed through the box, we may infer that infants’ surprise was due to this seemingly impossible feature of the event. As Baillargeon argues, this indicates that infants represented the existence of the box (even when not visible) and expected the screen to stop when it hit the box rather than pass through it (Baillargeon 1993, 271).

In a similar experiment, infants age 6½ months were shown a toy car rolling down a ramp, disappearing behind a screen, and then reappearing on the other side of the screen (Baillargeon 1986).96 Prior to seeing the car roll down the ramp, the screen was raised such that infants could see what was behind the screen. In the possible condition, a box was seen behind the track, and in the impossible condition the box was seen on top of the track. Then, in both conditions the screen was lowered and infants observed the car rolling down the track, behind the occluding screen, and reappearing on the right side of the screen when one would expect it to reappear if it continued in its normal trajectory. Infants looked reliably longer at the event where the box was placed on top of the track, despite the fact that there were no perceptible differences between the two conditions at the time of the car rolling down the track. Based on their knowledge that the box was on the track at time $T_1$, infants formed the expectation that the box would be on the track at time $T_2$ (not moving or radically changing its properties) even though the box was not visible at $T_2$. Similarly, infants are surprised to see an object dropped into a closed container (Hespos & Baillargeon 2001) or move straight through a barrier (Spelke et al. 1992).

Thus, contrary to Piaget, it appears that young infants cognize the existence of objects even when they are out of view because they are surprised when they judge the objects to be occupying the same region of space (even when not visible). This is naturally explained as a violation of their expectations regarding the behavior of physical objects, and these expectations

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96 This experimental setup can be seen in the following video: http://www.youtube.com/watch?v=hwgo2O5Vk_g.
are likely to be formed by a set of cognitive mechanisms related to reasoning about physical objects. Infants know, in some sense, that two distinct objects cannot occupy the same spatial region. These experiments did not directly address the sort of coincidence that ontologists find especially worrisome (exact spatial co-location of two physical objects) because in each case the object passing through had different spatial dimensions than the object it seemed to be passing through. This suggests that infants’ ontological assessments are guided by a more general anti-coincidence principle than that discussed by philosophers. Nonetheless, we can safely assume that infants would have similar or even more surprise if they observed two objects come to be perfectly co-located. A natural explanation of infants’ behavior is that they are acting on an innate or early developing principle of physical reasoning that rules out the possibility of solid objects coming to occupy the same space.

4.1.3 Objects, Properties, & Identity

In this sub-section I consider philosophers’ intuitions and infants’ behavior related to objects’ properties and identities. One of the most fundamental distinctions in metaphysics is the distinction between numerical and qualitative identity. $X$ and $Y$ are numerically identical just in case they are one and the same object, whereas $X$ and $Y$ are qualitatively identical just in case they share all of the same properties. Two distinct leaves can be qualitatively identical with respect to color, size, shape, but if they are truly distinct then they cannot be qualitatively identical with respect to all of their properties. A single green leaf at time $T_1$, $X$, may be numerically identical to a brown leaf at time $T_2$, $Y$, even though $X$ and $Y$ appear to have distinct properties, because the single leaf has the property of being green at $T_1$ and brown at $T_2$. This notion of numerical identity is foundation to our conceptual scheme and necessary for counting
and quantification (Geach 1962; Quine 1969, 9). Intuitively, we hold that an object can persist through radical changes so long as it meets the intuitive constraints noted above (e.g. spatio-temporal continuity and cohesion). This is based on the more fundamental distinction between objects and properties. We intuitively think that objects can survive drastic changes in their properties, so long as these properties are non-essential. If intuition nativism is true, then we should expect infants to distinguish between objects and properties, and numerical and qualitative identity. Of course, we should not expect infants to verbally express these judgments, and they may lack these technical concepts; but, if intuition nativism is true with regards to these concepts, their behavior must be consistent with the hypothesis that their physical reasoning is sensitive to the numerical/qualitative and object/property distinctions. Below I consider some of the relevant studies and conclude that infants make both distinctions.

Many of the studies cited above also provide evidence that infants distinguish between objects and properties, on the one hand, and numerical and qualitative identity, on the other. As just one of many examples, recall the study by Spelke et al. (1995) in which infants are shown a toy behind a screen on the right, then a toy behind the screen on the left, and finally shown either two toys (expected outcome condition) or one toy (violation of expectations condition), as seen in Figure 14 on the following page. The fact that infants were surprised to see just one toy is evidence that they track spatio-temporal continuity, but it also provides evidence that they have a notion of numerical identity. Although the two toys shown are seemingly qualitatively identical (with the exception of spatial location properties), infants recognize them as numerically distinct, and hence are surprised to discover just one toy at the end of the experiment.\textsuperscript{98}

\textsuperscript{97} Essence-related intuitions are considered in the section 1.4.

\textsuperscript{98} In a similar study Wynn found that infants are surprised to see either one or three qualitatively identical objects when they saw just two placed behind the occluding screen (1992). These studies may also be seen as providing some evidence that infants are surprised by exact co-location, since the change from perceiving two qualitatively
Additional evidence that infants are sensitive to numerical identity comes from a wide range of studies indicating that young infants (less than 4 months old) track objects based on their physical locations rather than qualities such as size, shape, or color (Baillargeon & DeVos 1991; Newcombe, Huttenlocher, & Learmonth 1999; Wilcox 1999; Aguiar & Baillargeon 2002; Luo & Baillargeon 2005a; Wang & Baillargeon 2008). Such studies indicate that young infants
do not rely on information regarding surface features in tracking numerical identity. It might seem that this evidence, on its own, does not show that they distinguish between numerical and qualitative identity because they merely indicate a failure to notice this information rather than showing that infants intentionally treat this information as irrelevant. However, the fact that infants track objects in the first place is evidence for a basic conception of numerical identity. If they lacked even a primitive notion of numerical identity, they would not be surprised upon seeing just one duck in the experiment presented in Figure 14 above. Such studies indicate that infants as young as 2 months (Hespos & Baillargeon 2001) are sensitive to numerical identity.

4.1.4 Sortals & Essences

In this section I consider intuitions concerning sortal categories and objects’ essences. As a preliminary qualification, philosophers and psychologists use ‘essence’ in importantly distinct ways. As a first approximation, psychologists use ‘essence’ to refer to a thing’s unseen, non-superficial, internal nature, and the philosopher’s distinction between essential and accidental properties is the distinction between those properties that an object has necessarily and those that are merely contingent. While these two concepts are importantly distinct, they overlap in many cases; in what follows I will be considering philosophers’ views and infants’ behavior related to both notions of essence but will aim to keep the two notions distinct where appropriate. Where no qualifications are added, readers may assume the philosophical notion of essence.

99 This notion of numerical identity is plausibly associated with object files (Kahneman et al. 1992; Carey & Xu 2001; Pylyshyn 2001). Each cognized object receives a separate file. The basic information contained in the object file is just physical location, although even this information may be absent. As more information is learned about an object’s qualitative features, this information is added to the file. This distinction between the file and the contents of the file plausibly track the distinction between numerical and qualitative identity, and are likely to underlie the intuitiveness of Locke’s notion of a substratum or the bare particular (i.e. the empty file). Given that this file/content distinction is found in early infancy, we have good reason to think that the intuitive distinctions between objects and properties and between numerical and qualitative identity are innate or early developing in infancy.
Philosophers’ distinction between essential and accidental properties can be traced back to at least Plato and Aristotle, was significant in the early modern period (e.g. Leibniz and Locke), and plays a significant role in contemporary ontology. For example, Eric Olson defends an Aristotelian view of personal identity by holding that we are essentially human animals but only accidentally wives, professors, or tall (2003). This view entails that if your body ceased to be a human animal you would cease to exist, but you continue to exist through the loss of countless non-essential properties. Intuitively, when one goes from being an infant to a toddler, we say that the very same person has ceased to be an infant but has not ceased to exist, because infancy is a phase-kind related to contingent properties. In contrast, if one’s body changed from being a living organism to a lump of non-living organic material, we would intuitively say that the person ceased to exist, because we are essentially living beings.\footnote{Note, however, that the principles of cohesion and spatio-temporal continuity may also incline us to say that some object persisted through these changes. That object is not a human organism but might be identified as a mass of stuff. Since this mass would have been perfectly co-located with the human organism, this case is one of many in which the fundamental constraints on our physical reasoning come into conflict.} A thing’s essence is the non-superficial, identity-determining aspect of a thing that makes it what it is.

Essence-based arguments are seen in the works of several influential figures (e.g. Kripke 1972; Putnam 1975; Salmon 1979). As Kripke observes, we intuitively think that tigers are essentially animals, such that any non-animal with a tiger’s superficial qualities (appearance, noises, shape, etc.) would not count as a tiger.\footnote{Putnam argues that it could turn out that cats (or tigers) are not animals, but rather cleverly disguised robots from Mars (1962, 660). If this discovery were made, we would probably say, using the language of essential properties, that cats are essentially robots and not animals.} In contrast, something that is essentially a tiger can change many superficial qualities, such as hair color or the number of legs, and still count as a tiger. Similarly, Putnam argues that water is essentially H\textsubscript{2}O, such that anything that is not H\textsubscript{2}O is not water, even if it shares the superficial qualities (liquidity, semi-transparency, etc.). Water can (and does) radically change in its superficial qualities, but we still call it water so long as it...
has its essential chemical nature. As a final example, Kripke and Salmon argue that a work of art has its original materials essentially (Kripke 1972; Salmon 1979). If a statue S is made out of block of marble M₁, then any possible statue that could have been made out of a distinct block of marble, M₂, would necessarily be numerically distinct from S. Although S could have been formed in many ways, and may lose some of its parts after formation, it has its material origin essentially.

A thing’s real essence (in the psychological sense) is that inner, non-superficial part of the thing that makes it what it really is. Often times this inner essence relates to the sort of thing that something is. That is, it relates to the sortal that an entity falls under. For present purposes, sortals should be understood as kinds of entities (e.g. tiger, cup, person). As pointed out by Frege, using somewhat different language, when we count objects, we are implicitly restricting out quantifiers to only count things of a certain sortal (1974/1884). In a similar vein, Wiggins has argued that identity is necessarily identity under some specific sortal (1967). Plausibly, our intuitive notion of essence is importantly related to sortals because we intuitively think that things of a certain kind (e.g., organism, statue, electron) would cease to exist if they no longer fell under the sortals we use to identify them. If intuition nativism is true, then we should expect these same intuitive judgments and distinctions in infancy. There is a prima facie motivation for doubting that these intuitions are shared. If our essence-related intuitions are importantly related to sortals, then it seems natural to suspect that they would not be found in pre-linguistic infants because these infants do not possess the count-nouns associated with sortals. A related challenge to intuition nativism, expressed by Fodor, is that psychological essentialism (our psychological tendency to ascribe essences, in the psychological sense) is the result of modern scientific knowledge (1998). If this were right, then it would be implausible to characterize essentialist
intuitions as innate. Below I consider evidence from developmental psychology indicating that
pre-linguistic infants are sensitive to both essence- and sortal-related considerations. This will be
taken as further evidence for intuition nativism.

Several studies have shown that, by age three, children divide the world into sortals and
natural kinds with essences (Gelman & Markman 1986, 1987; Gelman & Wellman 1991;
Wierzbicka 1994; Heyman & Gelman 2000); however, this sort of evidence is not sufficient to
defend intuition nativism because such studies have been conducted on verbal subjects whose
judgments may have resulted from their linguistic abilities rather than any innate or early
developing cognitive mechanisms shared with pre-linguistic infants. Although there is
considerable evidence that sortal- and essence-based intuitions begin to form around age three or
four, cohering with Piaget’s (1951) view that pre-verbal infants merely possess “preconcepts,”
the results of these studies might be explained by the linguistic nature of the tasks performed by
these subjects. As with Piaget’s studies, it might be that researchers are tracking something other
than essence- or sortal-based intuitions with their chosen experimental paradigms. Specifically, it
may be that infants have these same intuitions even in the absence of linguistic competence but
are unable to express them with the chosen research paradigm because that paradigm relies on
subjects providing verbal responses.\(^{102}\) Some evidence for this is found in a study on rhesus
monkeys (Phillips, Shankar, & Santos 2010).\(^{103}\) In their study, Phillips, Shankar, and Santos
found that at least some non-human primates track category membership even when objects’
surface features are radically transformed. The rhesus monkeys were more surprised to discover
differences in an object’s internal constitution than when they discovered radical changes in its
superficial qualities. Thus, at least some essence- (in the psychological sense) and category-

\(^{102}\) The more general view – that language makes expressible the concepts held pre-linguistically – is defended by

\(^{103}\) See also Mendes, Rakoczy & Call (2008, 2011) and Phillips & Santos (2007).
based expectations do not rely on linguistic competence. Some of the most significant evidence that infants are sensitive to essence (in the philosophical sense) comes from studies regarding the distinction between agents and mere things. I consider such studies in the following section and for present purposes only focus on studies on infants’ expectations of non-agents related to the psychologists’ sense of essence.

Some of the most significant early studies regarding infants’ essence-based expectations came from the inductive generalization procedure. In two such studies, it was found that by age two infants distinguish between vehicles and furniture as classes of objects (Mandler & Bauer 1988; Mandler et al. 1991). In a related study, Rakison found that by 18 months infants form expectations regarding novel objects based on their functional similarity to known objects, but their categorization appears to be based only on knowledge of the motion of the target stimuli (2004). These studies indicate that infants’ expectations are informed by their category-based judgments, but they do not offer any direct evidence for the conclusion that infants form expectations on the basis of beliefs about essential properties.

In a more telling study, Xu and Carey tested for infants’ expectations regarding radical transformations in object appearance (1996). In their study, ten to twelve month old infants were shown (1) a toy duck, (2) the duck disappearing behind a screen, (3) a ball appearing from behind the screen, and then (4) the ball moving back behind the screen. Then, the screen was raised to reveal either one object or two. If the infants only categorized the duck and ball as physical objects, then they would not be surprised to see only one object behind the screen, because they only saw one object at a time. Twelve month old infants were surprised, indicating that they categorized the duck and ball as different objects, but ten month olds were not. Plausibly, this is because the older infants treated these objects as belonging to different
categories but the younger ones did not. Some studies provide converging evidence that infants are sensitive to this sort of category membership starting at around twelve months (e.g. Xu, Carey & Welch 1999; Van de Walle, Carey & Prevor 2000). Based on such studies it would be tempting to say that category-based judgments begin at around twelve months, but, as Baillargeon, Wilcox and others have argued, these tasks may be too difficult for young infants for reasons unrelated to their capacity for category-based judgment (Needham & Baillargeon 1997; Wilcox & Baillargeon 1998; Baillargeon & Wang 2002; Wilcox & Schweinle 2002). These studies involve event mapping, which is cognitively demanding, rather than event monitoring. Using the event monitoring paradigm, several experiments have shown that infants as young as four months old make category-based judgments (Needham & Baillargeon 1997, 1998).

This evidence suggests that even young infants make discriminative judgments based on kind-membership beliefs, which in turn suggests that infants make sortal-based judgments. As with the study on rhesus monkeys, these studies indicate that sortal-based judgments appear prior to language-based judgments, and thus we may infer that our sortal-related intuitions do not merely arise from language. There is overwhelming evidence that language acquisition greatly facilitates sortal judgments, but it appears that language is not a necessary prerequisite. I conclude that young infants have sortal-related intuitions, but this leaves open the question of whether infants conceive of entities as having essences related to the sortals.

If infants make judgments on the basis of objects’ essences rather than mere kind membership, their judgments should demonstrate a greater sensitivity to unseen, internal factors.

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104 Event mapping tasks require the infant to process information regarding two distinct types of events and compare them for consistency, while event monitoring tasks merely require that infants process information regarding a single type of event and determine whether the sequential parts of this one event are consistent (Baillargeon & Wang 2002, 91-92).
over the visible, superficial features. The evidence for psychological essentialism in infants is best seen in relation to the distinction between agents and mere things, the subject of the next section. There I will argue that infants make a strong distinction between agents and mere things, and that this distinction indicates that infants also conceive of agents as having an inner, unseen essence. For non-agents, research suggests that infants begin identifying and categorizing objects on the basis of internal, essentialist features at approximately 14 months of age. This is seen in infants’ categorization of objects as vehicles just in case they perform the function of “giving a ride” (Mandler & McDonough 1996). Similarly, researchers have found that by 14 months infants categorize novel artifacts according to their function (Booth & Waxman 2002). In this study, infants first observed researchers perform various tasks with the artifacts. In the test phase of the experiment, infants were given one artifact and asked, “Can you find me another one of these?” (950). Of the possible artifacts available, infants tended to choose similar items based on similarity of function rather than similarity of size, shape, color, or other superficial surface features. This suggests that infants as young as 14 months conceive of objects on the basis of the objects’ functional profile in addition to (or sometimes at the exclusion of) surface features. Such studies do not tell us whether these infants conceive of these items as having their internal features necessarily, but they do indicate that infants’ categorizations are based on an understand of unseen, internal object properties.

In another study, Newman et al. (2008) investigating the role of this internal/external distinction in a way that bears more closely on the question of essential features. In their study, 14 month old infants were presented with computer animations of two cats that were identical in all respects, except that one had a blue stomach (shown to be inside the cat) and hat and the other had a red stomach and hat, and each cat had a unique style of dancing (for simplicity, I will refer
to these as the blue and red dances). The hats were removed at various points, informing the infants that the cats only possess these hats contingently. Later, infants were shown a cat with novel combination of hat color, stomach color, and dance style, as shown in Figure 15 below.
Figure 15. 14-month-old infants were first shown the displays in the familiarization panels (a), following by the test events (b).

If infants were sensitive to the distinction between necessary and contingent properties, then we should expect them to be more surprised by a cat with red hat, blue stomach, and red
dance than a cat with blue hat, red stomach, and red dance. This is exactly what they found. Infants looked significantly longer at the events in which the cat had changed its more essential feature (stomach) than when it changed its less essential feature (hat). This suggests that, at least by 14 months of age, infants distinguish between essential and non-essential properties. But, the most significant essentialism-related evidence comes from infants judgments of agency.

4.1.5 Agents vs. Things

Philosophers generally approach the question of personal identity as distinct from the question of object identity. At least as far back as Aristotle, philosophers have thought of agents as distinct from inanimate entities because of their distinctive capacity for self-directed motion. Following Descartes, many philosophers have made this distinction between objects and persons because persons are non-physical, mental substances. Philosophers who resist the intuitive pull towards Cartesian dualism nonetheless typically grant that persons are a special type of physical entity deserving its own special treatment (e.g. Parfit 1984; Dennett 1991; Baker 2000). Some metaphysicians (organicists, emergentists, and likeminded philosophers) go so far as to say that ordinary physical objects like chairs and cups do not exist, but persons, agents, or living organisms do exist (van Inwagen 1990; Hoffman and Rosenkrantz 1997; Merricks 2001; Olson 2007). According to organicism, although we should generally endorse nihilism, we must make an exception for persons because of the overwhelming evidence for the existing of thinking (implying a thinker), the functional unity that comes with being a living creature, or the irreducible causal powers of agents. Using Dennett’s (1987) language, when these theorists take

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105 For detailed discussion of these authors, see chapter three section 2.3.2. Throughout this section I will use ‘persons’ and ‘agents’ interchangeably. Although there are important differences between personhood and agency, these differences will not matter for present purposes.
on the intentional stance, they are led to think of persons as irreducible, united entities; but, when taking on the physical stance, they find it more intuitive to think of the physical entities as reducible to their constitutive matter.

Metaphysicians’ agency-related intuitions are not confined to thought experiments involving human persons. We are inclined to think that robots or alien life forms could be agents if they had the right sort of interaction with the world. A clear example of this intuition is seen in an early study by Heider and Simmel (1944). In their study, college students were shown videos of moving geometric figures (one circle, one square, and two triangles) and asked to describe what they saw. Almost all of the students characterized these shapes using agential, personhood language. Of course, they knew that the large triangle was not really angry, but it was natural and intuitive for them to characterize the large triangle this way. These findings have been replicated cross-culturally (Morris & Peng 1994), and people are more likely to use agency language in describing these moving shapes than in describing moving human silhouettes with less obvious intentional movements (Rimé 1985). If infants have agency-related intuitions similar to those of professional ontologists, then they should be similarly willing to think of such non-human entities as agents.

There is overwhelming evidence that infants attribute goals and behavioral dispositions to agents that they do not attribute to mere things (Csibra et al. 1999; Csibra et al. 2003; Shimizu & Johnson 2004; Baillargeon et al. 2009; Song, Baillargeon & Fisher 2005). However, several studies on infant agency judgment suggest that infants only treat human persons as agents. Meltzoff found that eighteen month old infants would imitate the behavior of other humans but not the behavior of mechanical devices performing the same acts (1995). Woodward found

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106 Heider and Simmel’s original display can be seen here: http://www.youtube.com/watch?v=sZBKer6PMtM
similar results in a looking time study with five month old infants (1998). In this study, infants were shown either a human hand or a mechanical claw reaching for one of two toys during habituation, and then reaching for either the same toy as they did previously or the other toy. When viewing the human hand, infants were surprised to see the hand reach for the new toy, but they were not surprised when the mechanical claw reached for a new toy. This suggests that infants attributed agency to the human hand, such that it reached intentionally because it desired a specific toy, but did not attribute agency to the mechanical claw.

These findings are suggestive, but also open to alternative interpretations. A problem with Meltzoff’s studies is that experimenters were possibly tracking more than just the judgment of agency. The infants in these studies may have judged that both the human and mechanical entities were agents, but were only inclined to mimic the behavior of the human agents. A problem with Woodward’s study, pointed out by Luo and Baillargeon (2005b), is that the mechanical claw extended beyond the edge of the visible stage, such that infants could not know whether the entities’ movements were self-directed or caused by an external force. This is important because self-directed motion is one of the most important cues for agency for infants (Premack 1990; Baron-Cohen 1995). As seen in other studies, infants judge novel entities as inert until they see self-directed movement (Kotovsky & Baillargeon 2000; Luo & Baillargeon 2005b). Although the infants already knew that the human hand was self-directed (from previous experience with human agents), they could not know whether this novel claw was self-directed.

In a follow-up experiment, Luo and Baillargeon (2005b) replicated Woodward’s design, except that they included a condition in which the non-human entity was fully visible to the infants (such that they could know that it was not being moved by an external force). In their experiments, it was found that infants were surprised when the fully visible non-human entity
moved towards a new goal, but they were not surprised by the novel movements of a non-human entity that extended out of their view. The best interpretation of this difference is that infants judged the fully visible non-human entities as agents, because of their self-directed movement, but were undecided regarding the entities that extended out of view. This suggests that infants, like professional philosophers, distinguish between agents and mere things. Several studies provide corroborating evidence for Luo and Baillargeon’s conclusion. Some of the most clear cases of agency attribution come from studies on infants using Heider and Simmel’s paradigm. In several studies, infants as young as three months old were shown either shapes moving in ways that adults would characterize as intentional or shapes moving randomly; in all of these studies infants looked reliably longer at the seemingly intentional movements (Dasser et al. 1989; Premack 1990; Gergely et al. 1995; Csibra et al. 1999; Wagner & Carey 2005).

These findings suggest that infants identity non-human entities as agents based on their contingent, self-directed interaction with the environment in seemingly purposeful ways. Once an entity has been identified as an agent, infants form distinct expectations of goal-directed behavior that they do not expect of inanimate objects. This is seen even with regards to entirely novel types of behavior. In addition to the types of behavior noted above, infants are inclined to treat an entity as an agent based on seemingly rational choices (Gergely et al. 1995; Gergely, Bekkering & Kiraly 2002), internally caused changes in trajectory (Tremoulet & Feldman 2000; Shimizu & Johnson 2004; Luo & Baillargeon 2005b), and interaction with known agents (Shimizu & Johnson 2004; Johnson, Shimizu & Ok 2007). In the study by Shimizu and Johnson, infants were shown a green fuzzy blob that moved towards one of two objects. Prior to this event, infants witnessed one of two events. In the agency condition infants witnessed the blob conversing with a human, with the human speaking English and the blob responding with
beeping noises. In the non-agency condition, infants first witnessed the blob making the same beeping noises while the human did not react to the beeping. In the agency condition, infants expected the blob to act on goals when moving towards the two other objects, but in the non-agency condition no such expectations were formed, as indicated by differences in their looking time. These results suggest that when infants judge something to be an agent, they come to expect a wide range of agential behaviors. These include both the behaviors that they previously witnessed – contingent interaction with other agents – and a wide range of behaviors that they had not yet experienced, such as the green fuzzy blob displaying self-generated, goal-directed motion towards an object.

Using Dennett’s language, these studies suggest that even infants take on the physical and intentional stances, and each stance comes with a wide range of expectations. Importantly, infants’ tendency to take on the intentional stance is not caused by superficial features such as looking human. When infants have identified an entity as an agent, they treat it as an entity with an internal causal power distinct from the physical causal influences in the environment (cf. Merricks 2001). The essence of the agent is the invisible aspect of it that is responsible for its self-directed movement. When infants judge an entity to be an agent, they take it to have this internal essence that causes a wide range of behaviors not found in inanimate objects. These studies provide strong support for intuition nativism in regards to agency-related intuitions, and also indicate that infants have essence-related intuitions. Note, however, that this notion of having an essence is ambiguous between merely having an unseen internal feature and having necessary properties. These studies clearly show that infants come to regard some inorganic objects as having the unseen, internal agency features, but it is less clear that infants regard these features as necessary for that entity’s persistence. The studies considered in this and the previous
section give us good reason to think that infants treat at least some entities as having an internal essence, but I am unaware of any research directly testing infants’ judgments of the necessary properties for object or agent persistence through time. Nonetheless, these studies provide strong evidence that infants, like professional ontologists, tend to distinguish between agents and mere things, and that this distinction is not grounded in the entities’ superficial features.

4.1.6 The General Case for Intuition Nativism

The studies considered above provide strong evidence for intuition nativism regarding our object and agent intuitions. That is, these studies provide strong evidence for the view that our ontological and mereological intuitions are cognitive assessments concerning the nature and existence of physical objects produced by innate or early developing physical and agential reasoning systems that are developed prior to the age of linguistic competence. Many of the central intuitions that motivate ontologists to endorse or reject ontological accounts are found in early infancy. Regarding material objects, we have seen that intuitions are sensitive to the principles of persistence, spatio-temporal continuity, cohesion, and anti-co-location, along with the distinctions between objects and properties and numerical and qualitative identity. Infants make sortal-based judgments even before knowing the words related to the relevant sortal. As with professional ontologists, infants distinguish between agents and inanimate objects. Both agents and inanimate objects are judged to have certain essential qualities, and this judgment drives infants’ expectations regarding these entities. Physical objects are essentially inert, spatially located, three-dimensional and impenetrable. Agents have many of these essential features but are also assumed to have an inner essence that allows for self-directed behavior, rational and efficient decision making, and contingent interaction with other agents.
In the previous chapter I argued that ontologists’ uses of ‘intuition’ and its cognates are most charitably interpreted as referring to pre-theoretical ontology-related beliefs. The case for this conception of ontological intuitions was strongly supported by ontologists’ characterizations of the intuitive, but only a few authors explicitly characterized the intuitions as those judgments we are inclined to make starting in infancy. Thus, there remained a question regarding how to understand ‘pre-theoretical’ in this conception of ontological intuitions. It could have turned out that ontological intuitions are those judgments we are inclined to make, starting in early adulthood, prior to explicit philosophical training and education. The evidence considered here suggests that this interpretation is wrong. Rather, the bulk of our ontological intuitions are formed surprisingly early in life, starting around three to six months of age. There is some room for interpretation regarding whether or not abilities that emerge around three to six months should be conceived as innate or learned, but this distinction is irrelevant for present purposes. What this evidence clearly shows is that humans have either innate or early developing (and highly canalized) physical and agential reasoning systems that are responsible for the bulk of those judgments that ontologists characterize as intuitive.

4.2 Objections & Replies

The most important objection to address is that I have moved too quickly from infants’ looking time to the robustly intellectual, rational, linguistic intuitions of professional philosophers. This objection may be developed as follows. The experimental results reported here are indicative of some important pattern in infants’ behavior, but we should not so quickly move from infants’ tendencies to look at some scenes more than others to the conclusion that infants possess and apply metaphysical principles when observing these scenes. It is implausible,
according to this objection, that pre-linguistic infants would have the capacity for forming and endorsing metaphysical principles and theories. Such principles and theories are necessarily linguistic items, and thus infants are incapable of possessing them. The evidence presented undermines the radical behaviorist view that infants’ brains are mere stimulus-response association machines, and that humans have certain innate (or highly canalized) inclinations to judge the physical world in certain ways, but we cannot draw the stronger conclusion that infants possess robust principles, theories, or concepts.

In response to this objection, it should first be noted that my claim is not that infants explicitly, consciously think of these principles or that they are linguistic or propositional. Rather, these principles and theories should be understood, in Kantian terms, as fundamental constraints on the architecture of the human reasoning capacities regarding physical objects and agents. Using the language of Marr’s (1982) three levels of analysis, the principle of object persistence, for example, should be understood as a computation level description of the physical mechanisms that constrains perceptual and cognitive assessments of the infant’s environment. Or, using Dennett’s (1971) three levels of analysis, we may characterize infants as possessing the principle of object permanence on the intentional level of abstraction while remaining neutral with regards to the infants’ understanding of the propositional content of this principle.

The application of this language only requires that infants continue to track the object (perhaps unconsciously) such that he or she has expectations about the object’s identity, location and (perhaps) properties that could be violated by some future experiences. This appears to contrast with professional ontologists ontological intuitions because these intuitions are reported verbally, with propositional content. This apparent contrast is based on a conflation between the mode of expression and the psychological etiology of ontological intuitions. Although
philosophers report their intuitions verbally, it remains an open question whether the intuitions are initially formed with propositional content. Following Fodor, it may be that the intuitions of both pre-linguistic infants and language using adults have propositional content. Following Cummins and Churchland, it may be that the intuitions of both infants and adults are initially generated without propositional content. The plausibility of intuition nativism does not depend on which of these views is correct, because both entail the possibility that infants possess ontological intuitions akin to those of professional ontologists.

One significant difference, however, is that when ontologists report an ontological intuition, they are almost certainly relying on higher level, system two cognition, whereas infants are most likely only relying on system one perceptual judgments and related physical reasoning mechanisms in system one reasoning. This is a real difference, but this difference is consistent with the possibility that ontologists’ judgments are caused by both explicit deliberation (system two) and perceptual and physical reasoning mechanisms shared with infants (system one). The striking similarity of ontologists’ reported intuitions and the judgments of infants suggests that these two groups are relying on the same underlying physical reasoning mechanisms, even if ontologists also employ more sophisticated cognitive abilities in verbally reporting their intuitions.

4.3 Normative Implications

I now turn to consider what epistemic implications, if any, follow from intuition nativism. I will argue that intuition nativism provides some evidential support for the correctness of standard methodology.

**Correctness of Standard Methodology:** The majority of professional ontologists are right in (1) treating our intuitive judgments as a starting point to ontological inquiry, (2) treating
these judgments as defeasible evidence, and (3) giving significantly greater evidential weight to general, abstract intuitions over specific, case-based intuitions.

In defending this thesis, I will argue that the most popular mereological theses – universalism, nihilism, and, to a lesser extent, organicism and emergentism – are popular for good reason. Although I take no position on which of these three is correct, I hope to show that we should prefer these generalist theses over the particularist alternatives. I will first consider (1) and (2), which I take to be uncontroversial, and then provide an argument in support of (3).

Given that our ontological intuitions are those judgments that are formed through an innate or early developing physical or agential reasoning system, it would seem that we have no choice but to use these judgments as a starting point for ontological inquiry. As with any domain of human cognition, it seems plausible to suppose that we should begin by endorsing those judgments that we already endorse. Alternatively, one might attempt to start with nothing or with a privileged set of beliefs. Starting with no beliefs is a non-starter unless, as Descartes supposed, we have access to evidence independent of our cognitive assessments and biases. One might, for instance, develop an ontological account on the basis of perception. One would begin by seeing that there is a red cup resting on a brown table and coming to believe that at least two objects exist, a cup and a table, that are numerically distinct and have various properties such as color.

The difficulty facing this approach is that of cognitive penetration, which may be defined as one’s cognitive system influencing the phenomenal character of one’s perceptual experience (McPherson 2012, 24). The problem is that the physiological and psychological path leading from raw sensation (e.g., the stimulation of a free nerve ending in one’s arm) to perception (in this case, pain) is thoroughly influenced by cognition. This is true of both the physiological structures, which have been influenced by both innate cognitive mechanisms and one’s cognitive history, and the psychological processing occurring in these structures at the moment. The
perception of a red cup on a brown table is causally influenced by one’s beliefs about cups and tables. There is no clear distinction to be made between visual information processing and cognitive assessments of the sensory data. The principles and concepts discussed above in relation to the physical reasoning system are also principles and concepts that constrain our perceptions of the physical world. Thus, if one were to reject (or bracket out) all cognitive biases and intuitions, one would be forced to also ignore perceptual evidence, leaving one with no beliefs and no evidential basis for forming new beliefs. This is the basic motivation for endorsing (1). However mistaken our ontological intuitions may turn out to be, we are better off starting with these intuitions than endorsing views that we are inclined to reject, remaining agnostic, or attempting to rely on evidence not tainted by one’s prior cognitive assessments.

The reason for (2) is that, as with every other domain of human cognition, our judgments are often mistaken. In regards to ontology, this is made especially clear by the puzzle cases where a set of intuitive theses are shown to entail a contradiction. In such cases, ontologists rightfully investigate the problem and conclude by rejecting at least one of the intuitive claims rather than endorsing a contradiction. This demonstrates that our intuitions are fallible, but why treat intuitions as *evidence* rather than simply as a set of pre-theoretical assumptions that lack epistemic warrant? A partial answer to this question was provided above with regards to (1). A complete, fully adequate answer would require a more thorough investigation than I am prepared to give at present. The short answer is that we should treat our intuitions as evidence, at least initially, because it is unclear what alternative source of evidence would allow us to begin our ontological inquiry. The most natural alternative proposal is that we should evaluate ontological theses by the sole criterion of contemporary physical sciences, as suggested by Ladyman et al. (2007). I am sympathetic to this proposal, but the received wisdom of the physical sciences is
based on the implicit application of same physical reasoning mechanisms that give rise to our ontological intuitions. Moreover, many of these intuitive judgments have played an ineliminable role in scientists’ perception and cognition of objects in conducting and analyzing experiments. Thus, this alternative turns out to require that we at least treat our intuitive judgments as weak, defeasible evidence. One might instead suggest that we should begin with our *intuitions*, with ‘intuition’ understood as referring to mental states with the F-features discussed in chapter one.¹⁰⁸ Insofar as these intuitions just are the outputs of our physical reasoning system, this is not an alternative proposal. Insofar as this suggestion diverges from the one above, it would propose that we give evidential weight to the way things appear rather than what we judge to be the case. As noted above in discussing (1), the nature of our seemings (perceptual or intellectual) cannot be so easily divorced from the cognitive structure of our physical reasoning system. Thus, as with the proposal to focus on scientific evidence, I suspect that this alternative will either collapse into the view defended here or face serious difficulties, but thoroughly exploring these difficulties is beyond the scope of the present discussion. This is the basic justification for endorsing (2). Although these intuitive judgments can, and in many cases should, be overturned by the discoveries of the physical sciences, we should still treat these judgments as defeasible evidence.

The third aspect of this thesis, that ontologists are right to give significantly greater weight to general over specific intuitions, is likely to be much more controversial and deserving of more extensive discussion. To see the motivations for this point, it will be helpful to recall the discussion in chapter three regarding the motivations ontologists provide for endorsing counter-intuitive views. When we accept all of our pre-theoretical judgments, as ontologists do at the

¹⁰⁸ In this sense, intuitions are spontaneous, a priori, intellectual seemings with a special phenomenology, modal content, and conceptual etiology. I have argued that this is not the typical meaning of ‘intuition’ and its cognates in material object metaphysics.
beginning of ontological inquiry, we quickly discover a wide range of tensions and inconsistencies in our beliefs. Such tensions give rise to difficult puzzle cases and paradoxes that demand some resolution. Interestingly, ontologists’ typical method is not to minimize the \textit{quantity} of rejected intuitions. Nihilists, for example, are willing to give up on countlessly many pre-theoretical judgments about cups, tables, and cats in order to preserve intuitions like the impossibility of ontological vagueness or co-location. That is, they give a strong preference for our general, abstract intuitions over our specific, case-based intuitions. The research considered above regarding infant cognition may help to provide a justification for this preference.

In reviewing infant cognition research, I considered data from individual experiments along with more general theoretical interpretations of this data. Although there remains significant dispute regarding the theoretical interpretations, I am most convinced by the accounts put forward by Spelke and Baillargeon (see especially Spelke 1994; Baillargeon 2008). According to these theorists, infants possess a small set of innate concepts and principles that provide a basic framework for interpreting physical events. This core knowledge consists of many of the general, abstract ontological intuitions noted above, and is contrasted with infants’ case-based judgments that result from these innate physical and agential reasoning mechanisms. From this perspective, we can begin to see that ontologists’ general and case-based intuitions do not differ merely in their level of generality, but also in kind. The general, abstract intuitions reflect the basic structure of our cognitive architecture in regards to object cognition, whereas the case-based judgments are the outputs of this cognitive system. When the outputs of the system conflict with the basic cognitive architecture of the system, then we have some reason for treating these outputs as performance errors (cf. Chomsky 1965). There may be times when we incorrectly state the general principles, and we should consider our reactions to concrete cases to
learn the contours of our physical reasoning principles; but, as our understanding of the principles becomes more refined, we have greater reason to dismiss concrete-case intuitions that conflict with these principles as performance errors.

Applying this to a concrete case, consider Merricks’ (2001) emergentism, according to which a physical object exists just in case it has non-redundant causal powers. Merricks thus holds that the only physical objects are the fundamental posits of particle physics and conscious beings with emergent causal powers.109 This has the counter-intuitive consequence of entailing that ordinary objects like baseballs do not exist, but Merricks gives our concrete-case intuitions less weight than the general, abstract intuitions. In particular, Merricks defends emergentism by appealing to the anti-overdetermination principle. If baseballs and the atoms-arranged-baseball-wise both existed, we would have a case of overdetermination, but this should be rejected. I judge that Merricks’ conclusions are wrong; but, according to the views I advocated above, the methods he employed to reach his conclusions are correct insofar as his general, abstract principle reflects the structure of the same physical reasoning system that generates the concrete-case intuitions that Merricks rejects.110

But emergentism is not sensitive to some of the principles considered above. He relies on the anti-overdetermination principle, and I suspect that the distinction between agents and mere things underlies his conviction that conscious beings have emergent causal powers, but emergentism is in tension with the principle of cohesion, according to which baseballs exist so long as their parts are sufficiently stuck together and move as unified mass. On the account

109 To a certain extent, Merricks remains agnostic about whether anything other than people and fundamental particles exists. If it should turn out, for example, that shampoo has non-redundant causal powers, Merricks would add shampoo to his ontology.
110 My purpose here is not to evaluate Merricks in detail, but I would object to other aspects of Merricks’ methodology. In particular, I would argue that the special status he gives to conscious beings conflicts with a large body of evidence from psychology and neuroscience suggesting that consciousness has the same sort of causal power as baseballs. Thus, his methodology is mistaken insofar as he has disregarded the constraint of matching our best scientific theories.
advocated here, this is a significant problem for emergentism, but emergentism is not unique in requiring such tradeoffs.

To the extent that an ontological account preferences general intuitions over case-based intuitions, it better matches the structure of our innate physical and agential reasoning systems, even if the account is inconsistent with countlessly many outputs of those systems. From this observation, we should conclude that generalist accounts (e.g. emergentism, nihilism, organicism, and universalism) are preferable to particularist accounts (e.g. Markosian 1998). These generalist accounts are the best attempts (to date) at providing a systematic ontological account that preserves as much of the fundamental structure of our physical and agential reasoning systems as possible. Although each account will conflict with at least some basic aspect of our cognitive architecture, the current state of ontology suggests that this is inevitable. Nonetheless, an account is better to the extent that it coheres with our basic cognitive architecture.

To be clear, this is not the only relevant consideration. As emphasized in chapter three, ontologists rightfully evaluate ontological theories based on six factors: internal consistency, systematicity, simplicity, puzzle solving power, coherence with the received wisdom of physics, and vindicating our pre-theoretical beliefs. Internal consistency, systematicity, puzzle solving power, and simplicity largely align with the factor of giving preference to the general intuitions reflecting the innate structure of our cognitive architecture. This suggests that the explanation provided here in terms of cognitive architecture could serve to unify several seemingly distinct

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111 Bryan Frances makes a similar observation regarding how we ought to react to the radical counter-intuitiveness of the most popular ontological accounts. He observes that we should, rationally, begin ontological inquiry with the common sense view, but, “as soon as one educates oneself about (a) the sanity, level-headedness, and intelligence of people who say these weird things; (b) the incredibly long history of the failure to find commonsensical solutions to the paradoxes; (c) the meta-arguments for anti-commonsensical theories; and 9d) the history of common sense being refuted by science, then one has to sober up.” (2013, 152-153)
theoretical virtues. Where generalist accounts deviate from the general intuitive principles outlined above, this is most typically because of the motivation of cohering with the received wisdom of physics. No doubt, our innate, evolutionarily derived physical reasoning architecture will conflict with the findings of contemporary physics in many cases. A clear case of this is seen in considering the conflict between our intuitive Euclidian geometry and the non-Euclidean geometry needed to understand contemporary physics. In such cases, we ought to give preference to the ontological principles and theories that cohere with our best physics, even if these principles and theories conflict with our innate ontological principles and theories. Where there is no such conflict, ontologists ought to give preference to general, abstract intuitions over our case-based, concrete intuitions.

4.4 Conclusion

The research considered here points to a surprisingly strong parallel between research in infant cognition and ontology. I have argued that this parallel is not a coincidence, but rather is explained by the fact that ontological intuitions arise from innate or early developing physical reasoning systems, such that the intuitions of professional ontologists are the same as those found in infants. Although there remains some controversy in developmental psychology regarding how the results of these studies should be interpreted, a plausible theoretical interpretation is that infants’ behaviors in these studies are best explained by innate, non-linguistic principles, theories, and concepts. These principles, theories and concepts reflect the most often cited general, abstract intuitions of professional ontologists, and the specific outputs of this cognitive system reflect the case-based intuitions of professional ontologists. Thus, when there is a conflict between intuitively plausible abstract principles and concrete-case judgments,
this is a conflict between the basic cognitive architecture of our ontological reasoning systems and a particular output of these systems. This suggests that such recalcitrant case-based judgments are the result of performance error. I have argued that ontologists are right to ignore many of these performance errors, and that the currently proposed account of developmental psychology provides explanatory unity to several distinct theoretical virtues. Based on these reasons, I conclude that ontologists are right to treat intuitions as a starting point for ontological inquiry, and as defeasible evidence, and that they are right to give preference to their general, abstract intuitions over their case-based intuitions.
References


Appendix A: Survey Network Term Meanings

~ X: For any X, denying X directly or indirectly (through choosing a competing view)
A Priori: A Priori knowledge is possible
A/S Dist: There is an analytic/synthetic distinction
Aesth Obj/Subj: Aesthetic value is Objective/Subjective
A/B Theory: A/B Theories of time
Conseq: Consequentialism in normative ethics
Deont: Deontology in normative ethics
E External/Internal: Epistemic justification Externalism/Internalism
EW Idealism/Skepticism: Idealism/Skepticism about the external world
Exp Disj/Rep/Sense-Datum: Disjunctivist, Representationalist, or Sense-Datum theories of perceptual experience
FW Comp/Lib: Compatibilism/Libertarianism free will
H Laws: Humean about the laws of nature
K Invariant/Relative: Knowledge is Invariant/Relative
M Cog: Moral judgment cognitivism
M External/Internal: Moral motivation Externalism/Internalism
M Real: Moral Realism
MC External/Internal: Mental content Externalism/Internalism
Names: Frege/Mill: Fregean/Millian account of proper names
Natural: Meta-philosophical naturalism
One/Two Box: Choosing One/Two boxes in Newcomb’s puzzle
Physical: Physicalism about the mind
PI Bio/F Fact/Psych: The biological, further fact, or psychological view of personal identity
Pol: Com/Egal/Lib: Political Communitarianism/Egalitarianism/Libertarianism
S Real: Scientific Realism
Switch: In the standard (1 vs. 5) trolley problem, you should switch the trolley
T Correspond/Deflation/Epist: Correspondence, Deflationary, and Epistemic accounts of truth
Tele Death/Surv: In the standard (matter destroyed) teletransporter, you die/survive
Z C&~P / Conceive / Possible: Philosophical zombies are conceivable but not possible / conceivable / possible.
## Appendix B: Survey Statistics

<table>
<thead>
<tr>
<th>Ontologists</th>
<th>A Priori Knowledge</th>
<th>Abstract Objects</th>
<th>Aesthetic Value</th>
<th>Objective</th>
<th>Analytic-Synthetic</th>
<th>Epistemic Justification</th>
<th>Internal</th>
<th>External World</th>
<th>Free Will</th>
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<tr>
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### General Survey Results

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<tr>
<th>Ontologists</th>
<th>God</th>
<th>Knowledge Rationalism</th>
<th>Knowledge Claims Invariant</th>
<th>Laws of Nature (Non-Humean)</th>
<th>Logic (Classic)</th>
<th>Mental Content (Internal)</th>
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<td>15.95</td>
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### General Survey Results

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<td>No</td>
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<td>35</td>
<td>37</td>
</tr>
<tr>
<td>Other</td>
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<td>43</td>
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233
<table>
<thead>
<tr>
<th>Ontologists</th>
<th>Naturalism</th>
<th>Physicalism</th>
<th>Moral Judgment (Cognitivism)</th>
<th>Moral Motivation (Internal)</th>
<th>Newcomb, 1 Box</th>
<th>Normative Ethics</th>
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<td>Yes</td>
<td>36.25</td>
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27.5 Other

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32 Other

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<th>Personal Identity</th>
<th>Politics</th>
<th>Proper Names (Frege)</th>
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4.3 (Sense-Datum) | 37.7 (Other)

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3 (Sense-Datum) | 41 (Other)

42 (Other)

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<th>Teletrans. (Survive)</th>
<th>Time (A-Theory)</th>
<th>Trolley Problem (Switch)</th>
<th>Truth</th>
<th>Zombies</th>
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Epistemic | 4.3 (Other)

11.6 Other | 4.3 (Other)
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