

Merely partial definition and the analysis of knowledge

Samuel Z. Elgin¹ 

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Abstract Two families of positions dominate debates over a metaphysically reductive analysis of knowledge. Traditionalism holds that knowledge has a complete, uniquely identifying analysis, while knowledge-first epistemology contends that knowledge is primitive—admitting of no reductive analysis whatsoever. Drawing on recent work in metaphysics, I argue that these alternatives fail to exhaust the available possibilities. Knowledge may have a merely partial analysis: a real definition that distinguishes it from some, but not all other things. I demonstrate that this position is attractive; it evades concerns that its rivals face.

Keywords Knowledge · Real definition · Analysis · Epistemology

1 Introduction

Within analytic philosophy, few topics have received as sustained and protracted attention as the analysis of knowledge. For over fifty years, proposed analyses—and the all too prevalent rebuttals of them—have dominated the epistemological literature. Even as philosophers have come to recognize an abundance of topics within epistemology (disagreement, epistemic injustice, and all the rest), special interest remains reserved for the analysis of knowledge. This holds to such an extent that the field of epistemology is occasionally, if somewhat loosely, described as ‘the study of knowledge’.

Epistemologists diverge not only over the correct content of an analysis (if an analysis exists at all), but also over the object of analysis. Those with a linguistic bent often consider the semantics of the term ‘knowledge’ (e.g., DeRose 1992; Lewis

✉ Samuel Z. Elgin
samuel.elgin@yale.edu

¹ Yale University, New Haven, USA

1996; Cohen 1999). Others attempt to analyze our concept of knowledge (e.g., Craig 1990). Still others attempt to investigate knowledge itself, rather than a term that denotes it or a concept of it (e.g., Armstrong 1973). Differentiating these projects is not entirely straightforward, as some philosophers infer metaphysical conclusions from semantic evidence (e.g., Parsons 1993). The semantics of the term ‘know’ may have metaphysical import. Here, I am primarily interested in a metaphysical analysis of knowledge. Linguistic and conceptual analyses, although interesting in their own right, are relevant only insofar as they have metaphysical implications.

Even after an object of analysis is identified, the type of analysis can vary. That is to say, philosophers can disagree over what analysis itself consists of, despite all attempting to analyze the same thing. Many (at least ostensibly) seek suitably informative necessary and sufficient conditions of knowledge. Others may seek conditions of the sort that artificial intelligence could use to reliably identify cases of knowledge. Here, I am primarily concerned with a metaphysically reductive analysis of knowledge.¹ Just as a chemist may seek the components of a chemical compound, I seek the components of knowledge: those aspects of the world from which knowledge itself is built. Not everyone believes that this project is intelligible, and I will not take the space to defend metaphysical realism here. However, it is important to clearly state what the enterprise of analyzing knowledge consists of. After all, these various projects are not necessarily incompatible—several may be fruitful. The result of one may inform the result of another but ought not to be confused with the result of another.

In light of the persistent—or even obsessive—attention devoted to the analysis of knowledge, one might suspect that the subject is entirely exhausted. By now, it might seem, epistemologists have discussed all reasonable arguments and entertained all plausible possibilities. Those who continue the debate merely spin their philosophical wheels without any hope of further progress. One might even suspect that continued discussion, perhaps driven by a professional need to publish excessively, obfuscates more than it clarifies.

Worry not, weary epistemologists! More remains to be said. My aims in this paper are twofold. First, I argue that there is a position available in logical space that has hitherto been overlooked. This is the position that knowledge has a merely partial analysis—where ‘to have a merely partial analysis’ means to have a real definition that differentiates an entity from some, but not all, other things. Second, I claim that this position is not only available, but has advantages that make it worthy of serious consideration. It garners some advantages that knowledge-first epistemology has over traditional accounts, as well as some advantages that traditional accounts have over knowledge-first epistemology.

I proceed as follows: In section two, I briefly sketch the current discourse on the analysis of knowledge. In section three, I shift to metaphysical discussions of real and merely partial definition. In section four, I present and defend the position that knowledge has a merely partial definition. In section five, I address objections to my proposal. I conclude in section six by highlighting some of the methodological implications of this position.

¹ As we shall see, even this description does not identify a unique project, as there is substantial disagreement among metaphysicians about what metaphysical reduction consists of.

2 The analysis of knowledge

I suspect that many readers are deeply familiar with the literature on the analysis of knowledge. I apologize for such a cursory introduction of such well-trodden ground. Nevertheless, I believe that it is necessary for the current project.

Edmund Gettier transformed epistemological inquiry by challenging the conviction that knowledge is justified true belief (1963).² Gettier cases are similarly structured. In each, an agent has a justified true belief that, intuitively, does not constitute knowledge. Suppose that John glances at a nearby clock. Based on his observation, he concludes that it is 1:30 in the afternoon. The clock he observes is broken; neither hand has moved in weeks. Still, as it so happens, it actually is 1:30. A broken clock, as the adage goes, is right twice a day. John was fortunate enough to glance at the precisely correct time. John's belief that it is 1:30 is true. It is also justified. After all, he is a competent clock reader, and clocks usually tell time reliably. However, it is widely held that in this sort of case John does not know that it is 1:30. Luck plays such an influential role that his accuracy seems mere happenstance. In light of such examples, philosophers came to believe that justification, truth and belief are necessary but insufficient for knowledge.

The decades following Gettier's contribution witnessed numerous attempts to revise the traditional analysis. Some thought supplementation was needed. Philosophers had mistakenly taken knowledge to have only three components—truth, justification, and belief. In actuality, knowledge has (at least) four components. A central task of epistemology, they thought, was to uncover the missing component, one that would give rise to an account not susceptible to counterexamples. Stine suggested ruling out relevant alternatives (1976), Nozick defended sensitivity (1981), and Sosa advocated safety (1999). Others held that including justification within the analysis of knowledge was mistaken and advocated replacing it with a preferable alternative (e.g., Kornblith 2008). Still others, perhaps hoping that Gettier cases originated from a flawed conception of justification, attempted to analyze justification perspicuously (e.g., Goldman 1979). Although they differ over the nature of the support, all of these proposals are structurally similar; they are all committed to the idea that knowledge consists in true belief that is suitably supported.

Unfortunately, proposed amendments and alterations invariably faced counterexamples of their own; none withstood prolonged criticism. Zagzebski exposed the apparent futility of this approach by providing a method for generating counterexamples to any proposed analysis of knowledge (1994). Take a case that, according to a proposed analysis, qualifies as knowledge. Alter that case so that, although the belief remains true and justified, the justification does not account for its truth. The result will, intuitively, constitute a counterexample. Pritchard argues that luck *per se* is not the source of the problem (2005). Only some sorts of luck undercut knowledge. Those who are lucky to have the evidence they possess intuitively count as knowers. Nevertheless, it is remarkably easy to derive cases in which the connection between justification and truth is vitiated by epistemically pernicious luck.

² The extent to which epistemologists previously accepted a justified-true-belief analysis of knowledge is somewhat debatable (see Dutant 2015). Minimally, however, subsequent discussions about the analysis of knowledge can be reasonably considered to be a reaction to Gettier's work.

Motivated by Zagzebski, and perhaps by the growing exasperation over consistently flawed proposals, Williamson suggested that the enterprise of analyzing knowledge rests on a mistake (2000). Not everything admits of philosophical analysis. Perhaps the universe is analyzable as the mereological composite of all objects, and perhaps water is analyzable as the chemical compound H₂O. But, he argues, surely we must begin *somewhere*. Most philosophers posit primitives of one kind or another. Perhaps proposed analyses of knowledge failed because knowledge lacks an analysis at all. Maybe knowledge is primitive.

Williamson allows for knowledge to figure in philosophical analyses. However, it functions only as an analysans (that which analyzes), not as an analysandum (that which is analyzed). Because knowledge is primitive, it is not metaphysically posterior to belief, truth, or justification; it does not ontologically depend on them.³ If anything, belief and justification are analyzed in terms of their relation to knowledge.⁴ This approach, which was dubbed ‘knowledge-first epistemology,’ quickly garnered a substantial following. Knowledge-first epistemology lacks a direct argument. Instead, it offers an explanation for why attempted proposals have failed so spectacularly and suggests a new program for approaching epistemological issues.

Most epistemologists who take a stand on a metaphysically reductive analysis of knowledge recognize two sorts of positions: traditionalism and primitivism.⁵ Traditionalists hold that knowledge has a complete analysis. Among these philosophers, there remains considerable disagreement over its content. And while some hold that knowledge has some complete analysis or other, many remain unsure of what that analysis consists of. All such philosophers count as ‘traditionalists,’ as I use the term, for all believe that knowledge admits of complete analysis. Primitivists, in contrast, contend that knowledge is metaphysically primitive and admits of no reductive analysis whatsoever.^{6, 7} These are not the only available possibilities. However, before a third alternative can be advanced, recent developments in metaphysics must be explored.

³ Williamson does not himself use terms like ‘metaphysically posterior’ or ‘ontologically depend.’ However, those who countenance such notions would, presumably, understand knowledge-first epistemology in this way. For one such view, see Horvath (forthcoming).

⁴ See Sutton (2007) and Bird (2007) for proposed analyses of this sort.

⁵ As I mentioned before, other projects may count as ‘an analysis of knowledge.’ The distinction I make here (and the history of inquiry I briefly describe) is not intended to capture these other projects; its focus is solely on those who take themselves to be investigating a metaphysically reductive analysis of knowledge.

⁶ I introduce the term ‘primitivist’—instead of using ‘knowledge-first epistemologist’—for two reasons. The first is that it allows for more concise prose. The second is that, at least sometimes, ‘knowledge-first epistemology’ refers not only to the conviction that knowledge is primitive but also to the positive project of analyzing other notions in terms of knowledge. Philosophers can consistently hold that knowledge is primitive and take all such proposals to be false. ‘Primitivism,’ as I use the term, encompasses both those who accept and those who reject analyses of notions like justification and belief in terms of knowledge.

⁷ Williamson’s initial characterization of knowledge-first epistemology is stated in terms of conceptual analysis rather than metaphysical reduction. However, for discussions of the knowledge-first approach that are more explicitly metaphysical in nature, see Carter et al. (2017), Ichikawa and Jenkins (2017), Schechter (2017) and Williamson (2017).

3 Real definition

Over the years, philosophers have advanced many conceptions of analysis. What the analysis of knowledge is depends, in part, on what analysis itself is. And so it behooves us to briefly discuss various conceptions of analysis. Although I will predominantly operate within the framework of essence and real definition outlined by Fine (1994a, b, 1995), I also discuss other proposals. I am not committed to Fine's account—any conception that allows for analyses that do not uniquely identify an analysandum will suffice.

Consider the chemical compound water. Water boils at 212° Fahrenheit, quenches thirst, and covers over 2/3 of the Earth's surface. These attributes, although enormously important in certain circumstances, are inessential to water. In contrast, water is—essentially—a chemical compound. Consider the property *being a vixen*. This is borne by animals once extensively hunted in the United Kingdom and is often metaphorically ascribed to sly, clever, and tricky fictional characters. These are inessential to *being a vixen*. In contrast, *being a vixen* is—essentially—a property.

Fine (1994a, b, 1995) argues that essence is best understood in terms of real definition. Real definition is the metaphysical correlate of nominal definition. Just as the term 'bachelor' is defined in terms of 'unmarried' and 'male,' so the property *being a bachelor* is defined by the properties *being unmarried* and *being male*.⁸

Although water is—by definition—a chemical compound, this does not exhaust its definition. Water has essential properties that differentiate it from other chemical compounds. A complete definition of water, we might say, is the chemical compound H₂O. 'Water is a chemical compound' expresses a partial definition, while 'Water is the chemical compound H₂O' expresses a complete definition. Similarly, although *being a vixen* is—by definition—a property, this does not exhaust its definition. *Being a vixen* has essential properties that differentiate it from properties like *being red* and *being spherical*. A complete definition, arguably, is the property of *being a female fox*. 'Being a vixen is a property' expresses a partial definition, while 'Being a vixen is the property of being a female fox' expresses a complete definition.⁹

⁸ Please permit a brief discussion of the motivation behind this development: while epistemologists debated the analysis of knowledge, metaphysicians were beset by a problem of their own. The formalization of quantified modal logic broke a long-standing resistance to essentialism; philosophical analyses were thought to be correct just in case they provided adequate necessary and sufficient conditions. It has been claimed that modal accounts of essence were once "so widespread that it would be pointless to provide references" (Correia 2005, p. 26). However, see Marcus (1967), Kripke (1980) and Plantinga (1974) for defenses of this claim. Metaphysicians began to unabashedly provide putative analyses in modal terms.

The shortcomings of the modal approach quickly became apparent. Fine challenged modal conceptions of essence on the grounds that there are many necessary yet inessential connections between various sorts of things. For example, it may be that Socrates is necessarily the entity contained in {Socrates} but it would be absurd to analyze personal identity in terms of set theory. Various philosophers have attempted to revive modal accounts of essence, but the general consensus is that these attempts have been unsuccessful. See, for example, Zalta (2006), Wildman (2013) and Livingstone-Banks (2017). Rather than defining essence in terms of modality, some have suggested defining modality in terms of essence. See Sect. 4.5 for a further discussion of this turn.

⁹ There may well be a reading of 'being a vixen is the property of being a female fox' which resembles an identity. If there is, this is not the reading I am concerned with. I contend that there also is a reading that does not resemble an identity because it is asymmetric; while 'the property of being a vixen is the property

It is clear, on the basis of these cases, that metaphysicians require a notion not only of complete definition but of partial definition as well. Unfortunately, no consensus on the definition of definition exists. For this reason, adjudicating between complete and partial definitions is tricky business. Although an adequate discussion of the issue far exceeds the scope of this paper, I will make two (hopefully plausible) assumptions that are modest in character yet potent in resources. The first is that complete definitions uniquely identify entities via their essences. This is not to say that essential identification *suffices* for definition. Definition may well require more. Rather, I merely assume that essential identification is *at least necessary* for complete definition. The second assumption is that partial definitions distinguish definienda from some, but not all, other entities. This may be only one sort of partial definition. As I say, complete definitions may perform more theoretical work than essential identification. If so, there may be various ways for partial definitions to perform some—but not all—of the theoretical work complete definitions accomplish. These are not relevant for our present purposes, so we need not take a stand on what they do or, indeed, on whether they exist. If a complete definition is one that distinguishes an entity from all others, it is reasonable to expect one sort of partial definition to be one that differentiates it from only some others. It accomplishes some, but not all, of the work that complete definition accomplishes. In the obvious way, this accommodates the examples of water and *being a vixen* mentioned above.

This characterization allows for the possibility of merely partial definition. Conceivably, some entities have partial definitions but lack complete definitions. These are entities with essences that distinguish them from some other things, but without essences that distinguish them from all other things. For the purpose of this paper, I assume that statements of definition take the form ‘It lies in the essence of F that something is F only if it is ϕ ’, where F is a predicate and ϕ is a structured complex. If F is completely defined, then being ϕ is both necessary and sufficient for being F . If F is merely partially defined, then being ϕ is necessary but insufficient for being F .

There are other conceptions of analysis. Some, but not all, permit merely partial definition. Recently, Rosen provided a definition of definition both in terms of Finean essence and grounding—a metaphysical dependence relation often expressed by ‘in virtue of’ (2015). Rosen maintains that definitions take the form ‘ $Def(F, \phi)$.’ Definition is a relation between a property F and a structured complex ϕ . Notably, he maintains that definitions are not identities—even if a property F is, by definition, ϕ , it is not the case that F is identical to ϕ . According to Rosen:

$$Def(F, \phi) \text{ iff } \Box_F \forall x ((Fx \vee \phi x) \rightarrow (Fx \leftarrow \phi x))$$

where ‘ \Box_F ’ means ‘It is necessary in virtue of the identity (or essence) of F ,’ and ‘ \leftarrow ’ means ‘grounds,’ so ‘ $Fx \leftarrow \phi x$ ’ means ‘That x is F is grounded in that x is ϕ .’ Less formally, this account asserts that the property F is, by definition, ϕ just in case it is

Footnote 9 continued

of being a female fox’ is true, ‘the property of being a female fox is the property of being a vixen’ is false. In any case, not much turns on this particular example, so long as the target phenomenon is clear.

necessary in virtue of the identity of F that, for any object x , if x is either F or ϕ , then it is F in virtue of being ϕ .

Whether Rosen's account yields a definition of knowledge is not obvious. If knowledge is not a property, his account may be inapplicable. I set this worry aside. My concern is with his account's compatibility with merely partial definition. It is compatible, assuming appropriate assumptions about grounding are made. The claim that knowledge is merely partially defined, on this conception, amounts to the claim that the fact that S knows that p is partially grounded in some facts or other, but lacks complete grounds; in other words, the fact that S knows that p is merely partially grounded. Merely partial grounds are incompatible with formal systems of grounding that assume that partial grounds are always part of complete grounds. If this assumption is dropped, however, merely partial definition may be understood in terms of merely partial grounding.

A somewhat related conception of analysis has recently been advanced by Horvath (forthcoming). Horvath maintains that an analysis ' A is B ' is correct just in case there is a necessary and sufficient connection between A and B and the concept of B grounds the concept of A . So 'Knowledge is justified true belief' expresses an analysis of knowledge if and only if there is a necessary and sufficient connection between knowledge and justified true belief and the concept of knowledge is grounded in the concepts of justification, truth and belief.¹⁰

Horvath's account concerns complete analyses. However, a slight modification allows for merely partial analyses. A statement ' A is B ' expresses at least a partial analysis if and only if B is necessary for A and the concept of B at least partially grounds the concept of A . So 'Knowledge is justified true belief' expresses a partial analysis of knowledge if and only if justified true belief is necessary for knowledge and the concept of knowledge is partially grounded in the concepts of justification, truth and belief.

Another conception is given in terms of generalized identities—sentences of the form 'To be F is to be G ' (most notably, see Dorr (2016), Correia (2017) and also Rayo (2013), Linnebo (2014)). The 'is' of generalized identities strongly resembles the 'is' of identity.¹¹ It is reflexive, transitive, and symmetric and, if this type of sentence holds, then it necessarily holds and it is necessary that all and only F s are G s.

This conception of analysis is uncongenial to merely partial definition. Because the 'is' of 'To be F is to be G ' logically resembles the 'is' of identity, if 'To be F is to be G ' is true, then all and only things that are F are things that are G . However, this conception is also uncongenial to debates over the analysis of knowledge. Because 'To be F is to be G ' is reflexive, 'To be knowledge is to be knowledge' expresses a generalized identity. If primitivists are to be interpreted as asserting that there are no

¹⁰ More precisely, if there is a necessary and sufficient connection between knowledge and justified true belief and the concept of knowledge is grounded in an n -tuple of the concepts of justification, truth and belief.

¹¹ It comes apart in that the terms 'to be F ' and 'to be G ' need not denote, so there may be no entities that are strictly identical.

true instances of ‘To be knowledge is to be G ,’ then primitivism is trivially false.¹² Because primitivism is not trivially false, this cannot be the sort of analysis it is concerned with.¹³

Chalmers (2012) recognizes two sorts of analyses. The first is a linguistic definition. For example, the definition of the term ‘brother’ may be ‘male sibling.’ Given the scarcity of uncontroversial definitions, Chalmers doubts that there is a linguistic definition of terms like ‘knowledge.’ The second sort of analysis is given in terms of *scrutability*—or *a priori* derivability from certain sets of truths. These truths come in four categories: the class of physical truths, including macrophysical truths, microphysical truths, and laws; the class of qualitative truths, including what it is like to be in such and such a phenomenal state as well as laws connecting these states to physical states; the class of indexical truths, including indexes to time and to space; and a ‘that’s all’ clause, which specifies that the three previous classes are, in the relevant sense, exhaustive. Chalmers maintains that all truths are knowable *a priori* from some combination of these types of truths. Analysis is given in terms of the truths needed to ‘scute.’ So, for example, we may identify an analysis of ‘ S knows that p ’ with those truths needed for an *a priori* derivation of ‘ S knows that p .’

Scrutability is not amenable to merely partial definition. There may be a sense of partial *a priori* derivability. If, for example, only one conjunct of a conjunction was derivable *a priori*, we might reasonably describe the conjunction as ‘merely partially knowable *a priori*.’ But this notion is of no help for the analysis of knowledge, for ‘ S knows that p ’ has no conjunctive parts. Moreover, given Chalmers’s commitment to scrutability, he maintains that *every* truth can be derived from some set of truths or other, and so sentences of the form ‘ S knows that p ’ have analyses in this sense.

However, if this speaks against the coherence of merely partial definition, it speaks equally against the coherence of knowledge-first epistemology. If Chalmers is correct, every truth—including truths of the form ‘ S knows that p ’—follows from the aforementioned classes of truths. ‘ S knows that p ’ is not itself a truth that falls into one of the four categories. It is not a purely physical truth (for it concerns mental content), it is not a purely qualitative truth (as witnessed by the fact that some true beliefs are phenomenally indistinguishable from false beliefs), and it is neither an indexical nor a totality truth. So, Chalmers maintains, it follows from some combination of other sorts of truths. If we identify the analysis of knowledge with these classes of truths, then sentences of the form ‘ S knows that p ’ have analyses, and so the claim that they lack an analysis is false. I take this not to be a serious objection to knowledge-first epistemology but rather a reason to frame debates over the analysis of knowledge in terms other than Chalmers’s.¹⁴ If, instead, we opt for Chalmers’s first conception of

¹² Nor will it help to frame primitivism as the claim that there are no true instances of ‘To be knowledge is to be G ’ where ‘ G ’ is a term other than ‘knowledge’; ‘To be knowledge is to be either knowledge or knowledge’ is also a true generalized identity.

¹³ Correia (2017) operates with a somewhat different reading of ‘To be F is to be G ’ than Dorr does. In particular, Correia’s reading of ‘To be F is to be G ’ is irreflexive, because being G grounds being F (and grounding is an irreflexive relation). As with Rosen, Correia’s proposal is compatible with merely partial definition if we allow for merely partial grounding.

¹⁴ Chalmers may have more resources than this brief discussion indicates. Perhaps he would add the ‘knowledge truths’ to the basic class of truths from which all others are derived. I lack the space to adequately

analysis—linguistic definition—then the object of analysis has shifted away from our present focus. Rather than analyzing knowledge itself, the object of analysis is a term that denotes knowledge.

Doubtless, there are other conceptions of analysis. Those I canvassed fall into one of two categories: conceptions compatible with, or which can be made to be compatible with, merely partial analysis (i.e., Fine’s, Rosen’s and Horvath’s) and those incompatible with merely partial analysis (i.e., generalized identities and Chalmers’s). The incompatible accounts are poor characterizations of the analysis of knowledge, as they entail that a plausible position is trivially false. Even if primitivism (or traditionalism, for that matter) is false, it is not trivially false, so it is preferable to adopt other characterizations. Although I largely operate under Fine’s conception of essence and definition, I am open to any that permits merely partial analyses.

Merely partial definition is not only pre-theoretically credible. As Dasgupta notes, its plausibility is buttressed by numerous examples; I rely on his insights here (2015). All of the examples I discuss are controversial. However, the positions seem credible enough to render the notion of merely partial definition coherent. The claim that some entities are merely partially defined is worthy of serious consideration.

3.1 Newtonian space–time points

Suppose that Newtonian mechanics were correct. Of particular interest here are the space-time points that objects occupy. Consider an arbitrary space-time point s . Arguably, s is merely partially defined. Quite plausibly, s has some essential properties. After all, we are not entirely ignorant of its nature; s is essentially a space-time point—and may essentially be point-sized and essentially be the sort of thing that objects can occupy. However, these attributes fail to identify s uniquely. Every other space-time point bears them as well. At most, ‘ s is a space-time point’ expresses a partial definition of s .

Point s remains uniquely identifiable in other terms. Perhaps it is the unique space-time point occupied by a particular part of Barack Obama’s hand at a particular moment on October 24. This is inessential to s . After all, Obama could have been somewhere else that day—and contingent properties are poor contenders for essences. In fact, s cannot be defined in terms of its relation to any matter, for it is possible for the entire universe to have been shifted four feet to the left of where it is actually located. Even a rigidified description—such as ‘the actual space-time point occupied by such-and-such a position of Barack Obama’s hand at such-and-such a moment on October 24’—that necessarily identifies s , seems artificial and inessential to s . So although s

Footnote 14 continued

address this proposal, but have a few brief thoughts: it is worth noting that not all of the knowledge truths need be added to Chalmers’ basic class in order for them to be scrutable. If, for example, the content of an agent S ’s belief concerned a physical falsity, then the physical truths would suffice to derive that S does not know that p . At most some of the knowledge-truths need be added to the basic set. This motivates an interesting picture: one on which some (but not all) of the knowledge-truths are primitive (in that some are added to the basic class of truths, while others are not). I am unsure whether primitivists would accept this position, but suspect many would prefer to frame the debate in other terms. My thanks to an anonymous reviewer for raising this point.

can be uniquely identified by its relation to matter, it is not defined by its relation to matter.

Completely defining s via its relation to other space-time points appears equally fruitless. We might suppose that s is the unique space-time point located precisely two inches below space-time point r . The description ‘the space-time point located two inches below space-time point r ’ uniquely identifies s . We can even grant that this description identifies s necessarily—that it is impossible for space-time points to move. Of course, s does not only stand in relation to individual space-time points; it relates to collections as well. So, we can suppose, it is the unique space-time point located between points t and u . ‘The space-time point located precisely between space-time points t and u ’ uniquely identifies s .

Let C be some collection of space-time points that, through some description or other, uniquely identifies s (allowing for the limiting case of C consisting of a single point). Four possibilities regarding the relationship between the elements of C and s —as far as definition is concerned—obtain:

1. s and the elements of C are each defined in terms of their relation to one another.
2. s is defined in terms of its relation to the elements of C and not vice versa.
3. The elements of C are defined in terms of their relation to s and not vice versa.
4. Neither s nor the elements of C are defined in terms of their relation to one another.

Any selection between options 2 and 3 would be impermissibly arbitrary. Nothing in the Newtonian framework privileges some space-time points over others; no natural origin exists. Nothing about the elements of C could, even in principle, motivate defining s in terms of its relation to them rather than the reverse. When considering a similar case of philosophical arbitrariness, Benacerraf rightly notes, “The notion of ‘correct account’ is breaking loose from its moorings if we admit the possible existence of unjustifiable but correct answers such as this” (1965, p. 57).

Option 1 is more contentious. Many would reject it on the grounds that it is viciously circular. Circular real definitions appear as metaphysically unsatisfying as circularly nominal definitions are linguistically unsatisfying. Some demur, maintaining s is completely defined in terms of its relation to the elements of C —each of which is defined in terms of its relation to s . These philosophers may have the resources to say that s is completely defined: it is completely defined in terms of its relation to other space-time points.

For my part, I side with those who reject circular definitions. However, at present, I have no new argument to that effect. Suffice it to say that it is plausible that definitions are not circular, and that it is not the present aim to demonstrate conclusively that s is merely partially defined. Rather, it is my aim to show that the position that it is merely partially defined is coherent. Those who deny definitional circularity can, it seems, speak meaningfully about Newtonian mechanics. If there is a problem (and indeed there are problems) with Newtonianism, it does not arise from the fact that it entails that entities are defined circularly. So the position that Newtonian space-time points are not each defined in terms of their relation to one another is tenable enough to constitute a reasonable position. For those who would deny definitional circularity, the remaining position is option 4—that neither s nor the elements of C are defined in

terms of one another. But this entails that s is not defined in terms of the elements of C .

It is plausible, then, that s has a partial definition; it has an essence that does not identify it uniquely. However, it is completely defined neither in terms of its relation to matter nor, it seems, in terms of its relation to other space-time points. These being the two reasonable contenders, it is plausible that s is *merely* partially defined.

3.2 Quiddities

Quidditism is the thesis that properties are not defined in terms of their causal roles (see Armstrong 1989a, b; Lewis 2009). Quidditism differs from causal structuralism—according to which properties are defined in terms of their causal roles. Quidditists contend that mass is not defined in terms of the causal role mass plays, charge is not defined in terms of the causal role charge plays, etc. According to some variants, it is possible for quiddities to switch causal roles. The property that had played the mass role could come to play the charge role and vice versa.¹⁵

Consider quiddity m , which plays the mass role. Arguably, m is at least partially defined. Minimally, it is essentially a property. Philosophers uncover what sort of thing m is, in a metaphysically robust sense, in discovering that it is a property. Perhaps m also essentially plays some causal role or other. These attributes, however, fail to identify m uniquely. After all, every other quiddity is essentially a property (and may essentially play some causal role or other) as well. The statement ‘ m is a property that plays some causal role or other’ expresses, at most, a partial definition.

Quiddity m can be uniquely identified in other terms. ‘The property that plays the mass role’ identifies m . However, according to quidditism, m is not defined in terms of the causal role that it plays, so this property does not figure in m ’s definition.

Some might contend that m is—essentially—identical to m . Quite trivially, nothing else is identical to m , and so this property identifies m uniquely. One might argue that m is completely defined in terms of being identical to m .

Such philosophers either are mistaken or (more charitably) are using ‘essence’ differently than I do. I deny that it is essential to m that it is identical to m . It may be essential to identity that everything is identical to itself (and, from this, follow that m is identical to itself), but one learns nothing about the nature of m in discovering that it is self-identical. As Dasgupta says, “There may be truths that identify m , and there may be essential truths about m . But if quidditism is true, then there are no essential truths that identify m ; so m has no full essence” (2015, p. 469). Plausibly, then, m is merely partially defined.

3.3 Particular phenomenal colors

Philosophers continually strive for an analysis of color. One type of account appears both scientific and straightforward—the color of an object is defined in terms of the

¹⁵ Quidditists need not accept this claim. Perhaps properties are not defined in terms of their causal roles, but necessarily play the roles that they actually play.

wavelengths of light that the object reflects. However, this is not always (or even usually) what philosophers seek. Color-perceptions have a peculiar phenomenal character that appears irreducible to wavelengths. Conceivably, people could observe objects reflecting wavelengths associated with phenomenal red but experience phenomenal blue.

Consider phenomenal canary yellow. A mental picture comes to mind. Philosophers have debated a myriad of potential analyses of this color—far too many to adequately address here. According to one proposal—color primitivism—canary yellow is merely partially defined. Plausibly, canary yellow is, by definition, a color. It may even be, by definition, a determinate shade of yellow. Of course, these attributes do not identify it uniquely. All other determinate shades of yellow bear these properties as well. ‘Phenomenal canary yellow is a determinate shade of yellow’ expresses, at most, a partial definition.

Canary yellow can be uniquely identified in some way or other. ‘The color Albert observes’—on the occasion that Albert makes the relevant observation—uniquely identifies canary yellow. However, it is inessential to the color that it is observed by Albert, so this method of unique identification does not bear on its definition.

Some philosophers maintain that, whatever the essence of color is, it is transparent in some respect. Johnston, for example, endorses a principle dubbed ‘Revelation,’ according to which “The intrinsic nature of canary yellow is fully revealed by a standard visual experience as of a canary yellow thing” (1992, p. 223). Assuming that Johnston treats ‘intrinsic nature’ and ‘essence’ roughly synonymously, Revelation restricts the sorts of properties that could be essential to canary yellow. Byrne and Hilbert argue that Revelation entails color primitivism, according to which colors have essential properties but are not completely defined (2007). Phenomenal canary yellow, on this view, is merely partially defined. Color primitivism is contentious. It is hardly the default position. However, it is one plausible possibility among numerous contenders. Particular phenomenal colors may also be entities that are merely partially defined.

Newtonian space-time points, quiddities, and phenomenal colors may all be merely partially defined. However, countenancing all (or even any) of these particular examples is not the only route to merely partial definitions. These examples are far from exhaustive. As Dasgupta notes, Aristotelian prime matter may also be merely partially defined (2015). No doubt other examples could be found. So long as the notion of merely partial definition remains intelligible, the thesis that an entity is merely partially defined remains available.

4 Knowledge and merely partial definition

Merely partial definition has broad implications for epistemology. Let us begin with the obvious. Knowledge may be merely partially defined. That is to say, knowledge may have an essence that distinguishes it from some other things, but lack an essence that distinguishes it from all other things.

I claim that this position is available, and my defense of this claim is straightforward. As I (and others) have argued, there are entities for which merely partial definition is, at the very least, plausible. There is no reason to take this list to be exhaustive. Therefore, it

remains possible that other things are merely partially defined. In particular, it remains possible that knowledge is merely partially defined.

But perhaps some disagree, insisting that while some entities are merely partially defined, knowledge is not one of them. After all, the examples proposed so far are entities that are, intuitively, relatively fundamental. In contrast, knowledge seems to be the kind of thing that is fully grounded in facts about agents' mental states. If merely partial definition is restricted to the fundamental, perhaps knowledge is not merely partially defined.

Admittedly, this worry could use additional clarification. If the term 'fundamental' means something akin to 'lacks a complete definition,' then the intuition that knowledge is not fundamental amounts to the intuition that knowledge has a complete definition. If this intuition undercuts my proposal, it also undercuts primitivism, which also maintains that knowledge lacks a complete definition. But because this intuition does not undermine primitivism (or, at least, does not undermine it to the point that it is not an available possibility), it also does not undermine my proposal. As Horvath (forthcoming) insists, intuitions of fundamentality are fallible. Something that initially appears fundamental may, upon inspection, depend on other things. The notion of number, which seems to be a basic category, may well be dependent on set theory. Similarly, the failure to uncover an adequate analysis of knowledge may indicate that it is fundamental—initial appearances aside. The proposal I advance allows for knowledge to be connected to mental states (after all, it may well have a merely partial definition by, e.g., having a merely partial definition involving belief). But the intuition that knowledge is completely defined is, I suggest, mistaken.

The thesis that knowledge is merely partially defined demarcates, not one, but a family of theories. Even if there were universal consensus that knowledge only has a partial definition, disagreement could persist over its content. I take no stand on which merely partial definition is correct. However, I will largely focus on the possibility that knowledge has a merely partial definition consisting of justified true belief. Before doing so, let me briefly mention some other possibilities and the respects in which they may be palatable to traditionalists and to primitivists.

4.1 Partial definition palatable to traditionalists

The claim that knowledge is merely partially defined is strictly inconsistent with traditionalism, so long as traditionalism is committed to the claim that knowledge has a complete definition. Nevertheless, some particular merely-partial definition accounts remain friendly to instances of traditionalism.

Consider the claim that 'Knowledge is justified, true, sensitive belief' expresses knowledge's merely partial definition. According to Nozick, agent *S*'s belief that *p* is sensitive just in case if *p* were false, *S* would not believe that *p* (1981). Motivations for including a sensitivity condition within the analysis of knowledge are twofold. First, sensitivity attempts to block Gettier counterexamples. Second, sensitivity conditions attempt to explicate the intuition that knowledge tracks truth. The first motivation is preempted if knowledge has a merely partial definition consisting of justified true belief. As I will argue shortly, this account suffices to accommodate Gettier cases.

No further supplementation is required. And, in any case, epistemologists generally recognize that sensitivity fails to block Gettier cases after all.¹⁶ The second motivation remains. If Nozick is correct, truth tracking is an essential aspect of knowledge. A partial definition of knowledge consisting of justification, truth, belief, and sensitivity reflects this. If traditionalists are committed only to the claim that knowledge has an analysis at all (rather than that it has a complete analysis), a partial definition along these lines may be appealing.

This strategy is available to other instances of traditionalism. Statements of the form ‘Knowledge is justified true belief and x ’ might express a merely partial definition of knowledge; this is similarly so for accounts that seek to replace the justification condition on knowledge with reliability, safety, sensitivity or virtue. Insofar as these amendments aim to block Gettier cases, they are both unnecessary and ineffectual. However, other reasons for adopting particular amendments may motivate such merely partial definitions.

4.2 Partial definition palatable to primitivists

As with traditionalism, primitivism—which holds that knowledge lacks any definition—is strictly incompatible with the claim that knowledge is merely partially defined.¹⁷ However, some particular merely partial analyses reflect insights of knowledge-first epistemologists.

Knowledge-first epistemologists rarely assert that knowledge is primitive and rest on their laurels. Rather, many attempt to analyze other epistemic notions in terms of their relation to knowledge. Motivation for knowledge-first epistemology resides not only in the fact that knowledge resists analysis, but also in the relative success of these programs. Primitivists who hold that justification is analyzable in terms of its relation to knowledge cannot also accept that knowledge has a partial definition in terms of its relation to justification (unless, of course, they admit circular definitions). Nor, on pain of circularity, can those who contend that belief is defined in terms of its relation to knowledge also accept that knowledge has a partial definition involving its relation to belief. Such primitivists would presumably resist the claim that knowledge has a partial definition consisting of justified true belief for two reasons. Not only do they hold that knowledge lacks an analysis, but this particular proposal threatens their favored analyses of justification and belief.

Other merely-partial definition accounts may be more palatable. Perhaps knowledge is essentially a mental state (for a defense of the claim that knowledge is a mental state, see Williamson 2000). Even if this is so, *being a mental state* fails to identify knowledge uniquely. After all, there are many other mental states (belief, hope, anticipation, and all the rest). Knowledge may have further essential properties—ones that differentiate it from other mental states—but it may not. If knowledge is essentially a mental state but has no other essential properties, then knowledge has an essence that does not identify

¹⁶ See Goldman (1979) and Kripke (2011).

¹⁷ For an argument that the necessary connection between belief and knowledge need not entail a definition or analysis of knowledge in terms of belief, see Williamson (2017).

it uniquely and is merely partially defined. Alternatively, primitivists might concede that knowledge is partially defined in terms of truth, but deny that belief, justification, safety, or sensitivity figure in its definition. If so, rather than insisting that knowledge is strictly primitive, they would tacitly acknowledge that it has a sparse partial definition.

Merely partial definition affords additional resources to knowledge-first epistemologists. After all, knowledge is not the only epistemic state. Perhaps belief and justification are merely partially defined. They may even be merely partially defined in terms of their relation to knowledge. Primitivists could accept these accounts through and through. Knowledge (they might say) admits of no analysis whatsoever, but belief and justification are merely partially defined in terms of their relation to knowledge.

4.3 Knowledge and justified true belief

I not only maintain that the position that knowledge is merely partially defined is available; I also maintain that it is attractive enough to warrant serious consideration—to have a seat at the table of reasonable candidates. What follows is inconclusive. I aim only to bring this position into the conversation, to the point where further merits and liabilities can be carefully scrutinized.

As mentioned above, the claim that knowledge is merely partially defined identifies a broad family of theories. Many of these theories are extremely implausible. The claim that knowledge is merely partially defined in terms of justified, true *disbelief* is obviously false. So I do not mean to suggest that all merely-partial definition positions are plausible. Rather, I claim that some are plausible. I will largely focus on the advantages that a merely partial definition in terms of justified true belief has over traditionalism and primitivism. In doing so, I do not mean to disregard other possibilities. Some may prefer a merely partial definition in terms of justified, true, sensitive belief (or another contender). Such philosophers accept that knowledge is merely partially defined, which is all that I mean to convince them of here. Which merely partial definition of knowledge is preferable is a discussion for another time. To bring this position into the conversation, I highlight advantages that a merely partial definition involving justified true belief has over traditionalism and primitivism. Should some other merely partial definition be even better, this is all to the good.

If knowledge is merely partially defined, then there is at least one other entity with an identical essence. If such a definition consists of justified true belief, there exists another mental state that is also essentially justified true belief. Nothing in the essence of knowledge distinguishes it from this other mental state. This may be a state that philosophers have previously engaged with, but it may not be. Of course, as with other entities that are merely partially defined, it remains possible to uniquely identify knowledge in some way or other. ‘The mental state denoted by ‘know’ plausibly identifies knowledge. Through a carefully rigidified description, such as ‘the mental state actually denoted by ‘know’,’ it might even be possible to uniquely identify knowledge by one of its necessary properties. However, if knowledge merely has a partial definition, it is impossible to uniquely identify knowledge by its essence.

In this case, counterexamples to the claim that knowledge is completely defined in terms of justification, truth, and belief are bound to emerge. Clever philosophers

will present cases that exhibit this other mental state (or, if several mental states share knowledge's essence, cases that exhibit one of these several mental states). These will be instances of agents who have justified true beliefs but lack knowledge. There will, in other words, be Gettier cases.

Many of the advantages this proposal has over traditionalism and primitivism share a common form. It has some of the advantages that primitivism enjoys over traditionalism, and some of the advantages that traditionalism enjoys over primitivism.

4.4 Justified true belief and traditionalism

The thesis that knowledge has a merely partial definition consisting of justified true belief has one substantial benefit over traditionalism. Attempts to analyze knowledge have failed. They have failed often, they have failed abysmally, and they have failed without much sense of progress. Clever philosophers have struggled for over fifty years to uncover a complete analysis. Of course, this may be due to our philosophical shortcomings. Perhaps a flawless analysis will emerge tomorrow. It may not. Perhaps the reason that a complete analysis evades us is that there is no complete analysis to be found.¹⁸

The thesis that knowledge is merely partially defined in terms of justification, truth, and belief explains such failures. Because other mental states share every essential property with knowledge, there is no correct analysis that distinguishes knowledge from these other things. Because there are no further essential properties to be found, counterexamples will persist. The thesis that knowledge has a merely partial definition consisting of justified true belief explains the presence and persistence of failures to uncover a complete, uniquely identifying, analysis. Traditionalism, in contrast, offers no such explanation. This is, of course, a primary advantage that primitivism has over traditionalism. It functioned as the first justification of knowledge-first epistemology. I claim that it is an advantage my proposal shares over traditionalism in equal measure. If the failure to find a complete definition motivates primitivism, it also motivates merely-partial definition accounts.

4.5 Justified true belief and primitivism

The thesis that knowledge has a merely partial definition consisting of justified true belief has two benefits over primitivism.

First, this analysis respects intuitions regarding the relationship between knowledge, truth, justification, and belief. I take it to be intuitive that knowledge is metaphysically dependent on justification, truth, and belief. This intuition is evident in the monumental nature of Gettier's contribution: it was monumental precisely because it was surprising. The intuition that knowledge is metaphysically dependent on justification, truth, and

¹⁸ Goldman (2009) hints that this might be the case. I take his work to be an insightful precursor to my own. He suggests that knowledge may have necessary but no sufficient conditions. He does not, however, investigate the metaphysical underpinnings of his proposal. He offers no discussion of what it takes, metaphysically speaking, for this to be the case.

belief is one that a merely partial definition in terms of justified true belief respects and is one that primitivism does not.

Some may question the import of this intuition. The evidential role intuitions play in philosophy is hotly contested and is far too broad a topic to adequately address here. I grant that those who place no weight on intuition need not count this as evidence. However, even those who maintain that intuition plays a role in general may dispute relying on intuition in this case, contending that knowledge, definition, and dependence are too theory laden for intuitions about them to carry much weight.

The role of intuition ought not to be curtailed prematurely. Intuitions about knowledge have occupied a central role in epistemology since Gettier's seminal paper. After all, the evidence consists of cases of justified true belief that are not, intuitively, cases of knowledge. Similarly, intuition has played a role in metaphysics. Modal accounts of essence were overturned by the intuition that Socrates is not defined (or metaphysically dependent on) {Socrates}. And although Socrates can be necessarily identified by the description 'the actual person located in such-and-such a position relative to the Parthenon,' philosophers reject proposed definitions of personal identity in terms of the Parthenon because these proposals are unintuitive. It is quite reasonable to dismiss these kinds of proposals. And so intuition can (and, indeed, does) count for or against debates concerning knowledge, definition, and dependence.

Another advantage is that this account explains why knowledge is factive, while primitivism does not. Following the rejection of the claim that essence is reducible to modality, some came to suspect that modality is reducible to essence. Perhaps a proposition is necessarily true just in case it follows from essential truths. Some suggested that it is necessary that water is a chemical compound because it follows from the essence of water that it is a chemical compound, and that it is necessary that the law of excluded middle holds because that law follows from every essential truth whatsoever. The position that modality is reducible to essence quickly garnered a substantial following (e.g., Fine 2015; Correia 2006, 2012; Lowe 2008; Oderberg 2007).¹⁹

Let us suppose, for the sake of argument, that primitivism is correct. Epistemologists of all stripes grant that the following are necessarily true:

1. If S knows that p , then S believes that p .
2. If S knows that p , then p is true.

Some also maintain that it is necessary that if S knows that p , then S 's belief that p is justified. However, there is no consensus about this, so I set the issue of justification aside. If 1 and 2 are necessarily true (and if modality is reducible to essence), then they follow from essential truths. These claims are both substantive; they are unlike the law of excluded middle, which follows from every essential truth.

It may be that sentence 1 follows from the essence of belief. If belief is analyzed in terms of knowledge (along the lines of the claim that to believe that p is either to know that p or to opine that p), it should be no surprise that there are modal connections between belief and knowledge. And so, one might reasonably argue, sentence 1 poses

¹⁹ However, for challenges to this view, see Teitel (forthcoming) and Wildman (forthcoming).

no threat to the reduction of modality to essence. It is necessarily true because it follows from the essence of belief.

This strategy cannot apply to sentence 2. Sentence 2 does not follow from the essence of truth, for, whatever the essence of truth is, it surely makes no mention of knowledge. Likewise, sentence 2 cannot follow from the essence of knowledge, for primitivists maintain that knowledge lacks an essence, and 2 does not follow from an essence that does not exist. Sentence 2 follows from neither the essence of truth nor, if the primitivist is correct, the essence of knowledge. Therefore, sentence 2 is a necessary truth that does not follow from any essential truths. In this case, there is at least one necessary truth that does not follow from any essential truths, so modality is not reducible to essence. A dominant metaphysical view is incompatible with primitivism.

This is a serious and unappreciated cost of primitivism. However, some may respond by simply denying that modality is reducible to essence. They might maintain that there are necessary truths that do not follow from any essence at all, and sentence 1 is one such truth. Denying that modality is reducible to essence is a substantial commitment—one that ought not be taken on board lightly. However, let us grant this for the moment. Still, the position that knowledge is merely partially defined retains more explanatory power than primitivism.

Primitivists can offer some kind of explanation of why sentence 1 is true. There may, for example, be an epistemic explanation of why people believe that knowledge is factive. Primitivists could plausibly provide an explanation of this sort without appealing to the definition of knowledge. But there is at least one type of explanation—metaphysical explanation—that is tied to definition. That water is necessarily a chemical compound is explained by the definition of water. That vixens are necessarily female foxes is explained by the definition of *being a vixen*. Primitivists cannot offer this sort of explanation of why knowledge is necessarily factive; it is a brute necessary fact. Sometimes, the winning lottery ticket is an even number, sometimes it is cloudy on successive Thursdays, and sometimes there is a necessary connection between something (in this case, knowledge) and truth. No definition explains why this is the case.

Perhaps some worry that my proposal merely trades one unexplained phenomenon for another. Although I explain why knowledge is necessarily connected to truth, I offer no explanation for why knowledge has the definition it has.

Definitions are good stopping points for explanation.²⁰ If one were to ask why it is that to be a bachelor is to be an unmarried male, it is tempting to treat the question either linguistically (i.e., why do ‘bachelor’ and ‘unmarried male’ pick out the same terms?) or else epistemically (i.e., why ought I to believe that to be a bachelor is to be an unmarried male?). However, these address different questions. Once the question is restricted to a metaphysical reading, it is difficult to know what an answer would look like. Definitions are not the sort of things that themselves cry out for metaphysical explanation. In contrast, necessities can be, and often are, explained in terms of definitions. It is necessary that water is a chemical compound because it lies

²⁰ For discussions of definition and explanation along these lines, see Dasgupta (2015), Dorr (2016) and Rayo (2013).

in the essence of water to be a chemical compound, and it is essential that Socrates is human because it lies in the essence of Socrates to be human.

The position that knowledge is merely partially defined offers an explanation that primitivists cannot. It need not appeal to brute, necessary connections. Rather, knowledge is necessarily factive because it lies in the essence of knowledge to be factive. The definition of knowledge explains why there is a necessary connection between it and truth.

5 Objections and replies

Three objections to this proposal are worth mentioning. All, I believe, can be dismissed straightforwardly.

5.1 Merely partial definition is a type of primitivism

Some may worry that this proposal is not as novel as I make it out to be. The difference between this proposal and primitivism may be opaque. Both contend that, metaphorically, if God were to fix all of the facts about justification, truth, and belief, she would not thereby have fixed all of the facts about knowledge.²¹ After all, she had not yet settled whether or not agents know or are in Gettier situations. And, I should note, many knowledge-first epistemologists I spoke to were relatively receptive to my proposal. Is this anything other than knowledge-first epistemology under a different name?

I believe that it is. I have mentioned at least one difference above; I contend that knowledge is essentially factive. Primitivists, in contrast, may hold that knowledge is necessarily factive but do not believe that it is essentially factive, because they contend that knowledge lacks an essence. Other differences are also worth highlighting. The first is that merely-partial definition accounts maintain that fixing facts about justification, truth, and belief fix some of the facts about knowledge. In fixing the fact that an agent has a false belief that p , for example, God thereby fixes the fact that the agent does not know that p . After all, the agent's mental state is inconsistent with knowledge's merely partial definition. Primitivists reject this order of fact fixing. Because knowledge is primitive, facts about knowledge must be fixed first. If belief is defined in terms of knowledge, fixing the facts about knowledge fixes (some of) the facts about belief, but God would not fix facts about knowledge by first fixing facts about justification, truth, and belief.

The second difference concerns ontological dependence. Fine has argued that ontological dependence is best understood in terms of definition (1995). If so, those who contend that knowledge is merely partially defined hold that knowledge ontologically depends on other entities. Primitivists hold that it does not.

²¹ This may need some qualification. Presumably, if God were to fix all of the facts about truth, she would have fixed all of the facts. This would trivially fix all of the facts about knowledge. Let us set this worry aside. Assume that God fixed all of the facts about the truth of the content of agents' beliefs; and not the facts about their knowledge.

5.2 Merely partial definition is a type of traditionalism

But if this view is not another type of primitivism, perhaps it is another type of traditionalism. Traditionalists readily admit that an analysis in terms of justified true belief provides necessary but insufficient conditions of knowledge. What's more, I do not adjudicate between various traditionalist proposals. Is there anything new here?

I believe that there is. Many attempted revisions of the justified-true-belief analysis were driven, at least partly, by a desire to provide an account immune to counterexample. The consensus among traditionalists is that the existence of counterexamples demonstrates that a proposed analysis is inadequate. However, attempted revisions proved futile. That knowledge is merely partially defined explains why counterexamples persist. Because there is another mental state that shares knowledge's essence, there are bound to be cases of agents who exhibit this mental state and who lack knowledge. Counterexamples are to be expected. My proposal thus explains the metaphysical underpinnings—what it is for something to have a metaphysically reductive analysis with necessary but insufficient conditions and explains why some types of counterexamples are unproblematic. Other types of counterexamples *are* problematic. Suppose someone were to claim that knowledge has a merely partial definition in terms of x . Cases of knowledge that are not cases of x threaten this account. So, on my proposal, the role that counterexamples play is diminished, but not entirely removed.

My proposal differs from traditionalism in that traditionalism contends that knowledge has a reductive, uniquely identifying analysis, while if knowledge is merely partially defined, its reductive analysis does not identify it uniquely.

5.3 Epistemologists never sought a definition of knowledge

Perhaps I moved too quickly between talk of analysis and talk of definition. Perhaps epistemologists never sought a definition of knowledge in the first place. And, perhaps, by 'analysis,' epistemologists mean something quite different from 'definition.' If so, even if knowledge is merely partially defined, it may not have a merely partial analysis.

I have several responses to this charge. My first is my very best incredulous stare. Epistemologists never sought a definition of knowledge? Really? That seems to be *precisely* what they sought. However, I do not wish to dispute the point excessively. To those who insist that epistemologists have been unconcerned with the analysis of knowledge, I have even more sensational news! There is an unexplored question in epistemology: what is the definition of knowledge? Evidently, this is a question epistemologists are not engaging with, and surely it is pressing.²² For this new question, I maintain that a plausible possibility is that knowledge is merely partially defined, but I remain open to the claim that there are other plausible contenders.

Some will find this response a bit silly. How could it be that no one has explored the definition of knowledge, given all of the developments in epistemology? Perhaps this motivates conceptions of analysis in definitional terms. If not, there are two further

²² Of course, those who dispute the intelligibility of definition—or who prefer other conceptions of it—may take this to be an empty question. As before, it is not my aim to defend this conception here.

reasons to accept this characterization of the debate over the analysis of knowledge. The first is that it satisfies epistemologists' standards for analysis, and the second is that 'essence' was introduced to describe the types of analyses philosophers seek, and epistemologists are not engaging in a radically different sort of project than other philosophers are.

Epistemologists often fail to specify what they mean by 'analysis.' However, essence satisfies their (tacit) standards for analysis. Although many do not specify what 'analysis' means, several conditions emerge from the discussions. First, a successful analysis must be *modally adequate*. It must identify all and only possible cases of knowledge. The primary motivation for knowledge-first epistemology is the susceptibility of putative analyses of knowledge to counterexample. Possible and actual cases are capable of undermining an analysis. Were knowledge-first epistemology to weaken or to abandon this commitment to modal adequacy, it would lose its primary motivation; counterexamples would pose no threat to proposed analyses their opponents advance. However, modal adequacy does not *suffice* for analysis. Knowledge can be easily identified by one of its necessary properties. For example, knowledge is necessarily the mental state contained in {knowledge}. Such an account correctly identifies knowledge in every possible case: an agent *S* knows that *p* just in case their attitude toward *p* is the mental state contained in {knowledge}. If analysis required no more than necessary identification, knowledge-first epistemology would be incorrect. But both friends and foes of knowledge-first epistemology deny that the claim that knowledge is the mental state contained in {knowledge} constitutes an analysis of knowledge. Something more is required.

Some may suspect that this would-be analysis is insufficiently informative. Those who entertain it learn nothing substantive about knowledge. However, adding an informativeness condition to analysis is inadequate. Since its inception, knowledge-first epistemology has allowed that knowledge is the most general factive mental state (see Williamson 2000). This description is both necessary and informative but does not satisfy the standards for an analysis. If it did, knowledge-first epistemology would have discredited itself by providing an analysis of the very phenomenon it claims cannot be analyzed. And, for whatever reason, traditionalists have also not accepted this definition of knowledge.

Additionally, a successful analysis must be *metaphysically reductive*.²³ Analysis is often metaphorically described in terms of breaking a phenomenon down into its constituent parts. Knowledge-first epistemologists appeal to this aspect of analysis when discussing the analysis of belief. Because analysis is reductive, it cannot be that *A* is analyzed in terms of *B* if *B* is itself analyzed in terms of *A*. By denying that knowledge is analyzed in terms of belief (because it lacks an analysis at all), knowledge-first epistemology opens the door to an analysis of belief in terms of knowledge.²⁴

²³ For epistemologists who explicitly discuss the analysis of knowledge in terms of metaphysical reduction, see Ichikawa and Jenkins (2017) or Schechter (2017).

²⁴ For those who describe knowledge-first epistemology in this way, see Gerken (2017) and—most explicitly—Schechter (2017), who states, "Once it is claimed that knowledge is unanalyzable and irreducible (in anything like the traditional way), we have a new primitive to deploy. We can try to put this primitive to work in providing conceptual analyses and metaphysical reductions. . . . The characterization

Epistemologists thus maintain that analyses are modally adequate; are not purely modal; consist of more than informative necessary and sufficient conditions; and are metaphysically reductive.

Essence fits the bill. Essences hold necessarily. Because the essence of a thing belongs to it in every possible world (in which that thing exists), counterexamples undermine putative essentialist claims. Further, things necessarily have some inessential properties.²⁵ So, the fact that knowledge is necessarily contained in {knowledge} does not entail that it is essential to knowledge that it is contained in {knowledge}. Moreover, how informative a property is does not (typically) impact whether or not it is essential. So, the fact that it is informative that knowledge is the most general factive mental state need not entail that knowledge is essentially the most general factive mental state. Lastly, essence is perhaps the paradigmatic basis for metaphysical reduction (for a defense of ontological dependence in terms of essence, see Fine 1995). The reason that water reduces to hydrogen and oxygen, essentialists maintain, is that these atoms figure in its essence. One reason to accept an essentialist formulation of the analysis of knowledge is that essence satisfies the epistemologists' demands on analysis. Of course, it is possible that other conceptions of analysis do so as well. However, as mentioned before, although I largely work within the Finean framework, I am amenable to other conceptions that also allow for merely partial definition.

This point deserves yet another argument. The reintroduction of essence to metaphysics was justified, in part, as a way of characterizing projects that philosophers already carried out. The search for the analysis of a person is a search for the essence of that person, and the search for the analysis of a kind is the search for the essence of that kind. Fine did not (re)introduce 'essence' into metaphysical discourse by providing an analysis of what an essence is. Rather, he describes the sorts of things philosophers seek when they search for analyses in general. 'Essence' is typically used to characterize what philosophers seek when they seek an analysis.

Because 'essence' was introduced to characterize the search for analyses, and because the search for an analysis of knowledge was (and remains) a paradigmatic search for an analysis, 'essence' describes the search for an analysis of knowledge. Those who take themselves to engage in the same sort of project as other searches for analyses seek the essence of knowledge, for that it is what 'essence' was introduced to mean. Of course, some epistemologists may dig in their heels, insisting that their project is radically different from other searches for analyses. Such philosophers, minimally, owe us a characterization of what their project consists of. However, so long as the search for the essence of knowledge is intelligible, what its essence is remains significant.

Footnote 24 continued

of belief in terms of knowledge is part of the essence of belief. It provides the real definition of belief (and similarly for other cognitive states). The characterization of justification in terms of knowledge is part of the essence of justification. It provides the real definition of justification (and similarly for other epistemic statuses)" (pp. 133–135).

²⁵ This does not conflict with the claim that modality is reducible to essence. Socrates is necessarily such that 2 and 2 make 4. This is inessential to him, but follows from essential truths for the vacuous reason that it follows from any essential truth that Socrates is such that 2 and 2 make 4.

6 Conclusion

If knowledge is merely partially defined in terms of justified true belief, one might suspect that we are in an unfortunate epistemic situation. Although *S* may determine that she has a justified true belief that *p*, nothing delivered by the definition of knowledge helps her determine whether she knows that *p* or is in a Gettier situation. This conclusion, although reflecting an understandable level of pessimism, is premature. The demand that, in order to know that an agent *S* knows that *p*, one must first know a complete definition of knowledge, and correctly apply it to that case, is far too strong. Throughout history, philosophers have uncovered very few definitions. If, in general, knowledge that a phenomenon applied required knowledge of that phenomenon's definition, we would almost never know that any phenomenon applied. Without a complete definition of causation, one could not know whether one event caused another, and without a complete definition of chemical composition, one could not know whether chemical composition occurred. But surely we *do* know that such things occur, so knowledge of those phenomena's definitions is not mandatory. In any case, this consideration does not tell against my proposal in particular. Neither the traditionalist nor the primitivist claims that we know what the complete definition of knowledge is either: the traditionalist because there remains reasonable debate over what the analysis consists of and the primitivist because knowledge lacks a complete definition. All proposals share equally in this worry. Granted, nothing in the definition of knowledge settles which state *S* is in with regard to *p*. But definitions do not exhaust our epistemic resources.

Recall that canary yellow (plausibly) is merely partially defined. It is, by definition, a determinate shade of yellow but may have no further essential properties. We are not ignorant of which colors are canary yellow. We possess other methods of identification. Knowing, as we do, that it is a determinate shade of yellow, we can gesture towards an object that, as a matter of contingent fact, is just that shade. The partial definition provides focus—informing us of which aspect of the ostended object to attend to (the shade instead of the shape, mass, etc.). Combined with the definition, the act of ostension uniquely identifies the shade. Once in possession of such an identification, we can—and do—apply the notion to other cases, and thus come to know that various objects are canary yellow as well.

It may be that nothing in the definition of knowledge differentiates it from mental states exhibited in Gettier cases. Nevertheless, as with canary yellow, the partial definition we possess focuses our attention to the relevant aspect of the mental state. We can then gesture toward instances of knowledge and—when armed with an identification—extrapolate to other cases. One method of identification may be insufficient. We need not assume that the answer will be the same in every case. Nor, perhaps, should we be confident that the answers we find will be conclusive rather than indicative. But once obsession with blocking Gettier cases is lifted, we can expand our view. We can attempt to devise a theory of knowledge, that is informed by a merely partial analysis, but involves appeals to contingent, empirical factors to accomplish what an analysis alone cannot.

Philosophical progress occurs not only when questions are answered, but when philosophers realize that they have asked questions wrongly. Often, when seeking analyses, philosophers form questions in the following way:

‘What is ϕ ?’

In so doing, they restrict the scope of potential responses—which most naturally take the form:

‘ ϕ is ψ .’

This presupposes that answers are formed as identities—as something that uniquely identifies the subject of analysis. Phrasing questions in this manner precludes merely partial definitions, which do not uniquely identify. I suggest a slight revision. Philosophers would do better to ask:

‘What is essential to ϕ ?’

This avoids the presupposition that all analyses uniquely identify. Sometimes, it is possible to uniquely identify subjects by their essence. Other times it is not.

In this paper, I have concentrated on knowledge. But I doubt that knowledge is unique. Given the scarcity of uncontroversial philosophical analyses, merely partial definitions may be even more commonplace than complete definitions.

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