

There Are No Metaphysical Primitives

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Abstract: Many metaphysicians posit primitives. These vary with respect to the theoretical work they perform but are all undefinable in more basic terms. I argue against the existence of metaphysical primitives on the grounds that, if they existed, they would be essentially primitive. However, if primitives were essentially primitive, then they would have an essence. Because they are primitive, they lack an essence, which undermines the original supposition that they are primitive. I close by mentioning some implications this has both for metaphysicians and for metaphysics more generally.

Euthyphro: Do you recall, Socrates, the details of our last conversation, in which you objected profusely to my proposed account of piety?

Socrates: I do. You claimed, among other things, an act is pious in virtue of being loved by the Gods. I demurred. The Gods love acts because they are pious; acts are not pious because the Gods love them. The explanatory order of your proposal, my friend, was entirely backward. What of it?

Euthyphro: I believe I can resolve the problem you so carefully laid out—and a whole host more—by positing that piety is a metaphysical primitive.

Socrates: I fear this new proposal fares no better than your last.

Euthyphro: But I have not yet explained how this resolves your worry! Nor have I articulated the extensive explanatory work I take this primitive to perform. How could it be my proposal falters from the outset?

Socrates: The reason your proposal falters does not concern the peculiarities of piety. I contend that there are no metaphysical primitives at all, and so piety, in particular, cannot be primitive.

Euthyphro: I agree that, were there no primitives, piety could not be one, and my proposal would be doomed from the start. However, I fear that either you are skeptical of metaphysics generally—and hold that talk of primitives is itself confused—or else are using the term ‘primitive’ far differently than I do. Surely, realist metaphysics requires one sort of primitive or another.

Socrates: I most certainly am not skeptical of metaphysics generally. I believe metaphysical claims are substantive, either true or false, and responsive to evidence. I even maintain

that the notion of a metaphysical primitive is an intelligible one. However, I also maintain that it is a notion that applies to nothing at all. As for your second worry—that we may be talking past each other—perhaps the easiest fix is to explain what I mean by ‘primitive.’ Metaphysicians use the term ‘primitive’ to mean various things. On some uses, there may well be primitives. It is only on one use that I categorically deny their existence. By ‘primitive’ I mean ‘lacking an essence.’ So in denying that there are primitives, I claim everything has an essence.

Euthyphro: Surely there is more to say. What is it you mean by ‘essence’?

Socrates: There certainly is more to say—although I am not prepared to provide a reductive definition of essence here. By ‘essence’ I mean the *what-it-is*, or the identity, of a thing—meant in a metaphysically reductive way. We might describe the essence of a thing as its nature, or as the metaphysical qualities it has in virtue of being the thing it is. This notion of essence is a familiar one: we can understand many different types of putative philosophical analyses in essentialist terms. I might say water is essentially the chemical compound H_2O , that *being good* is essentially the property of *maximizing utility*, or the universe is essentially the mereological composite of all objects. It is in this sense I claim that everything has an essence.

Euthyphro: I believe I understand your claim. Still, I wonder what could possibly motivate you to deny the existence of primitives. You, of all people, know that successful philosophical analyses are hard to come by. Our discipline has uncovered few, if any, uncontroversial examples. I myself was tempted to believe that primitives abound! Why do you categorically deny their existence?

Socrates: Let us suppose, for the sake of argument, that there are primitives and attempt to uncover an incoherence in the position. Take an arbitrary primitive p . Will you grant that p bears the property *being primitive*?

Euthyphro: Certainly.

Socrates: And would you characterize the relationship between p and *being primitive* as accidental or essential? That is to say, is p accidentally primitive, or is it essentially primitive?

Euthyphro: I would have to say p is accidentally primitive. Were p essentially primitive, it would have essential properties, which, I take it, would mean that p has an essence. We stipulated at the outset that p does not have an essence.

Socrates: Very good. Perhaps you see where I am going with this. I agree with you that p cannot be essentially primitive, but will also attempt to persuade you that it is essentially primitive. This is the incoherence I mentioned before.

Euthyphro: I can see the structure of the argument. Why believe p is essentially primitive?

Socrates: I note, to begin with, that it is provable that p is necessarily primitive on the

basis of modest modal assumptions.¹ That is to say, it is not a contingent matter of fact that p is primitive.

Euthyphro: Of course. But remember that essence cannot be characterized in purely modal terms (Fine 1994, 1995). Although essential properties hold with necessity, other properties do as well. We might say of you that you are necessarily contained in {Socrates}, but deny that set membership is a part of your essence. So too, it seems, we may grant that p is necessarily primitive but deny that it is essentially primitive.

Socrates: Very good. But I ask you to consider the sorts of examples that threaten modal accounts of essence and to recognize how different they are from the relation between p and *being primitive*.

The examples that overturned modal accounts typically involve irrelevant necessary truths. Necessarily, piety is such that $2 + 2 = 4$. Yet I would have found it deeply unsatisfying, in our previous conversation, if you were to tell me that piety is essentially such that two and two make four. Nothing in the essence of piety, if I may speak this way, demands that arithmetic facts hold at all. Quite similarly, piety is necessarily such that it is actually loved by the Gods. Because the Gods love piety in the actual world (and because ‘actually’ is a rigidifying term), the Gods actually love piety in all possible worlds. Nevertheless, I deny that it is essential to piety that it is actually loved by the Gods.

Compare these examples to the relationship between p and *being primitive*. That p is primitive does not hold due to facts about set membership or due to mathematical truths that necessarily hold of everything. Nor is it a seemingly artificial property with a rigidifying term, thought up by a tricky metaphysician. Rather, we understand what sort of thing p is—metaphysically speaking—in recognizing that it is primitive. We recognize that p is a part of the metaphysical foundation, the entities that themselves lack an essence and figure in the essences of other things. That p is primitive is a metaphysically substantive fact, and it is a fact *about* p . So p is necessarily primitive. And this necessity holds not due to irrelevant modal connections but in virtue of the identity of p —because p is the kind of thing it is.

I maintain that p is essentially primitive. And, if you recall, you yourself noted that p cannot be essentially primitive. Being essentially primitive requires that p have essential properties. If p is primitive, it has no essential properties. We find ourselves in a bind; p both is and is not essentially primitive. This contradiction does not arise due to particularities of p . After all, our selection of p was arbitrary. Such a conflict could arise for any primitive of our choosing.

Euthyphro: And this is why you deny the existence of primitives?

Socrates: It is. And this is a result metaphysicians ought to happily accept (which is not to say they will be happy to accept it). After all, we philosophers posit primitives reluctantly. Many hold that derivative entities are ontologically costly in a way that primitive entities are

¹See Appendix.

not—while varying what they mean by ‘derivative entities’ (e.g., Armstrong 1989, Bennett 2011, Schaffer 2015). When all else is equal, it is far better to make do with fewer primitives than greater. I simply argue that we ought to make do with the smallest possible number of primitives—none at all.

Euthyphro: You move too quickly for me, Socrates, for I am not yet persuaded by your argument. Sometimes, apparent contradictions can be resolved by recognizing terminological ambiguity. If your use of ‘primitive’ changed between your claim that p is essentially primitive and your claim that it is not, the two statements need not conflict.

Socrates: I deny any such ambiguity. I informed you at the outset what I took ‘primitive’ to mean. At no point did I change my mind.

Euthyphro: Perhaps the ambiguity lies elsewhere. Have you forgotten the distinction between constitutive and consequential essence (Fine 1995)? A property belongs to the constitutive essence of a thing just in case it holds in virtue of being the thing it is. A property belongs to the consequential essence of a thing just in case it logically follows from the thing’s constitutive essence. I may grant that *being primitive* is a part of p ’s consequential essence while denying that it is a part of p ’s constitutive essence. And surely, what concerns us here is p ’s constitutive essence.

Socrates: This distinction is no help. Even if *being primitive* belongs to p ’s consequential essence—and not to its constitutive essence—it must be the case that *being primitive* follows from p ’s constitutive essence. That is, after all, what we take consequential essence to be. This requires p to have a constitutive essence of one kind or another—for that p is primitive does not follow from nothing at all. And if p has a constitutive essence, then it is not a primitive. The problem remains.

Euthyphro: Allow me to try another tack. *Being primitive* is something of an odd property. It is defined in terms of an absence—the absence of an essence. Can absences figure in essences?

Socrates: I see no reason why not. Indeed, a paradigmatic case is that *being a bachelor* is essentially the property of *being an unmarried male*. *Being unmarried* is the property of an absence—the absence of a marriage. Yet this does not prevent it from figuring in the essences of other things.

Euthyphro: Very well, Socrates. Even if I were to grant that p is essentially primitive, this essence may not individuate it. Fine claims that real definitions (which he sometimes treats interchangeably with essences) need not be individuating (1995). Similarly, Dasgupta argues that some entities have essential properties but lack full essences, that is, they lack essences that uniquely identify them (2015). In rejecting the existence of primitives, do you claim everything has a full essence, or are you satisfied with merely partial essences? For nothing you have said leads me to believe everything can be uniquely identified by its essence.

Socrates: This is a good point. At present, I have no argument to the effect that everything

can be identified by its essence. If you wish to refer to those entities with non-individuating essences as ‘things with partial essences,’ you certainly may. In this case, I argue that everything has, at least, a partial essence. However, I do not believe individuation is as important as it is sometimes made out to be, and, as I will explain shortly, many of the metaphysical and methodological implications of my argument do not hinge on whether essences uniquely identify.

Quite plausibly, electrons are essentially negatively charged. In a possible world containing only one electron, it can be uniquely identified by its essential property *being negatively charged*. In the actual world, in which there are many electrons, an electron cannot be uniquely identified by *being negatively charged*. It is difficult to see why the essence of the former electron is more metaphysically significant than the essence of the latter. The difference between them is purely relational—it concerns whether or not something else exists that shares its essential property. And how could a relational difference such as this determine whether or not the essence of an electron is robust?

Euthyphro: This is fair enough. But perhaps, when understood in this way, your claim is not so surprising. I might say p is essentially identical to p and from this conclude that p has an essence. And if we agree that everything is essentially self-identical, have we not already conceded that everything has an essence?

Socrates: I had no idea you already agreed with me! How silly of me to explain my argument in such detail when you were already persuaded of the truth of my conclusion. I take no issue with those who, on independent grounds, deny the existence of primitives. And whether you find this conclusion surprising is something you will have to determine for yourself.

Of course, some would deny that it is essential to p that it is identical to p (e.g., Dasgupta 2015). It may be essential to identity that everything is identical to itself (and, from this, follow that p is identical to p). But, some would argue, one learns nothing about the nature of p in learning that it is self-identical. However, I maintain that even these philosophers ought to believe p has some essence or other, for the reasons we have just discussed.

Euthyphro: So some, at least, may be surprised by your result. I can feel the force of your argument, but allow me to see if I can dissuade you. I grant that p is necessarily primitive, that this is a metaphysically robust fact, that this fact holds in virtue of the identity of p , and that the relationship between p and *being primitive* is unlike the necessary connections that threatened modal accounts of essence. Nevertheless, may I not insist that *being primitive* is a purely modal property—one that holds necessarily of p but is unrelated to its essence?

Socrates: I am grateful you grant so much. To an extent, I place the burden on you at this point. The characteristics you mention satisfy my standards for essence. If you have another conception of essence—one according to which properties may be necessary, be metaphysically robust, hold in virtue of the identity of the entity in question and be unlike the examples that threaten modal accounts of essence and yet be inessential—I would like to

hear it. Until one is provided, I do not know how I could persuade you that *being primitive* satisfies your standards for essence. However, one response concerns other commitments you may have. Do you, like some, believe modality is reducible to essence, such that a proposition is necessarily true just in case it follows from some essential truths or others?

Euthyphro: Suppose I do.

Socrates: Well, then, that p is primitive follows from essential truths, for we have already demonstrated that it is necessarily primitive. If there are no essential truths about p , then there must be other essential truths that entail that p is primitive. What are these sorts of truths? What are these other entities whose essences entail that p is primitive?

Euthyphro: I am unsure. The most obvious contender is p , but perhaps another suffices. Could it be that the fact that p is primitive follows from the essences that p figures in?

Socrates: It could not. First, it may be that p does not figure in any essences at all. That p is primitive guarantees only that p lacks an essence—it does not guarantee that p figures in the essences of other things. And if p does not occur in the essence of anything, it cannot be that the fact that p is primitive follows from the essences of other things. More importantly, even when p does figure in essences, these essences need not necessitate that p is primitive. Plausibly, water is essentially the chemical compound H_2O . From this, it follows neither that hydrogen is primitive nor that it is not. If p belongs to the essence of an entity, that essence need not specify whether p is primitive.

Consider another example. Because our candidate p is primitive, every property F is inessential to p . The property of *being not essentially F* is, presumably, one p bears necessarily. If necessities flow from essences, this too must follow from some essential truth or other. If it follows from the essence of p , then p has an essence and is not primitive.

Perhaps one natural view is that entities are endowed with a kind of totality essential property. That is to say, if an entity e had essential properties F_1, F_2, \dots, F_n , there would also be a property F_{n+1} , which consists of F_1 - F_n being the only essential properties that e has. Let us call this fact e 's totality essential fact. For primitive p , such a totality property would be *being the only essential property that p bears*. Such a position quickly appears bizarre, but it too lacks the resources to deny that p has any essential properties.

Euthyphro: But perhaps a distinction we previously discussed could be put to some use. I agree that the totality fact you mention commits us to the claim that p has an essence, but we may be considering the wrong entity. The totality essential fact may lie elsewhere.

As you well know, philosophers who endorse the reduction of modality to essence allow for necessary truths to flow from the essences of a plurality of things (e.g., Fine 1994, Correia 2006 & 2012, Lowe 2012, Oderberg 2007). For example, the conjunction 'Socrates is human and Euthyphro is human' is presumably necessary yet follows from neither of our essences alone. Rather, it flows from the plurality of our essences: from the two taken together.

Perhaps there is a totality essential fact concerning a plurality of things—that the only

essential properties of those entities are what they are. If such a totality fact made no mention of p , it would follow that p lacks any essential properties. The necessity that p is primitive would thus arise from an essence of something other than p .

Socrates: If the essence of p does not entail that it is primitive, I do not see how such a plurality would. Considering entities in a plurality does not contribute any new essential properties the individuals lack. Rather, it provides a basis for necessities that result from the interactions of the essential truths the entities have, such as the conjunction you mentioned above.

If p lacks any essential properties, then any plurality of entities containing p provides the same essential truths as that plurality would without p . After all, p has no essential truths to contribute. So, if the essences of some plurality containing p entails that p is primitive, then the essences of that plurality without p would also entail that p is primitive, for it contains precisely the same essential truths that provide the basis for the entailment. And I cannot see how the essences of a plurality of entities not containing p could entail that p is primitive.

Euthyphro: What of the totality truth we mentioned before?

Socrates: This requires revising standard conceptions of the reduction of modality to essence, such that there is an essence of a plurality that is not essential to any of its members. Perhaps such a revision could be made, but even then some worries would remain. If all pluralities bear an essential totality fact—of those being the exhaustive essences of the plurality—what are we to say of the plurality containing simply p ? After all, from a mathematical perspective nothing prevents us from considering pluralities consisting of a single entity. In this case the plurality would contain such a totality essential fact. But because p is the only member of that plurality it would bear the essential totality fact, and so would have an essence.

In any case, I worry that this line of thought is misguided. Recall, from our previous discussion, that the hallmark of essence concerned the identity of a thing—with what makes it the thing it is. It seems to me the claim that p is primitive concerns the identity of just one thing: p . There are no other entities whose essences—that which makes them the things that they are—are relevant to what it takes to be p .

Euthyphro: So tell me, Socrates, what depends on the absence of primitives, which you have argued so forcefully for? What philosophical debates turn on whether primitives exist?

Socrates: There are two sorts of implications I foresee. The first directly targets ongoing philosophical debates, while the second arises only with additional suppositions. An instance of the first sort concerns a contentious position in meta-ethics: normative non-naturalism. There are many positions that fall under the label ‘non-naturalism.’ According to one, normative properties, such as goodness, lack essences.² ³ This is no idle conten-

²For essentialist construals of the naturalism vs. non-naturalism debate, see Chappell (forthcoming) and, in places, Scanlon (2014).

³My emphasis on goodness is largely historical. The original characterization of naturalism and non-

tion but has been employed in arguments against the non-naturalist. Dasgupta (2017), for example, objects that the non-naturalist cannot metaphysically explain why properties like goodness and rightness have normative authority. What makes it the case that I should do that which is good? One potential reply is that it lies in the essence of goodness that agents should do what is good. But, Dasgupta notes, this reply is unavailable to the non-naturalist who denies that the property of goodness has an essence.⁴ This sort of non-naturalist faces worries anew. If, as I have argued, everything has an essence, it follows that the property of goodness has an essence. Such a non-naturalist must contend not only with Dasgupta’s explanatory challenge but also with the abundance of essences.

Or consider the debate between bundle and substratum theories. A bundle theorist maintains that particulars are nothing more than bundles of properties instantiated at a particular location. The substratum theorist, in contrast, maintains that there are bare particulars—entities that are not themselves properties that instantiate properties at locations. There are many objections to substratum theory, but one is that bare particulars lack an essence.⁵ I am unsure if the substratum theorist need be committed to the claim that particulars lack essences. However, those who make such a claim do so in error. It follows from the fact that everything has an essence that bare particulars (if such things exist) have an essence.

Or consider the directionality of time. While some philosophers argue that the directionality of time can be reduced—for example, to statistical mechanics and the history of entropy (Albert, 2003)—others maintain that the directionality of time is primitive. Lipman (forthcoming), for example, claims any description of the passage of time “is bound to be metaphorical” (24).⁶ There is no essence of the passage of time to provide. I maintain that this is mistaken. The passage of time—like everything else—has an essence.

Euthyphro: And what of the second sort of implication?

Socrates: Let us grant, for the moment, Fine’s contention that ontological dependence ought to be understood in terms of essential containment (1995). One thing ontologically depends on another just in case the latter figures in the essence of the former. If *being a bachelor* ontologically depends on *being male*, this is because *being male* figures in the

naturalism, which continues to hold sway over the debate, arose in Moore (1903). Moore primarily addressed the property of goodness. However, others address the property of rightness (e.g., Nowell-Smith 1954) and the relation of being a reason for (e.g., Scanlon 2014). Similar arguments arise for these positions as arise for non-naturalism about goodness.

⁴Note that such a non-naturalist presumably claims that the good has no essence at all, rather than one that does not identify it uniquely. If a non-naturalist allowed for an essence that does not uniquely identify the good, she could claim that it lies in the essence of the good to be action guiding, so long as something else is essentially action guiding as well.

⁵For example, see Sider, who discusses the objection that bare particulars “have no intrinsic nature” (390).

⁶I interpret this claim as the denial that the direction of time has any essence at all, rather than merely one that identifies it uniquely. After all, if the directionality of time had an essence, we could provide a non-metaphorical description of it, even if such a description failed to identify it in particular.

essence of *being a bachelor*. And if water ontologically depends on hydrogen, this is because hydrogen figures in the essence of water. If everything has an essence, then everything ontologically depends on something or other. There is no ontological bedrock that depends on nothing and on which all else depends. This poses a problem for philosophers who suppose there is such a bedrock. Maudlin, for example, claims the laws of physics do not ontologically depend on anything at all (2007). Similarly, Lewis maintains that the distribution of (perfectly natural) properties at individual space-time points does not ontologically depend on anything else (1986). If things ontologically depend on the contents of their essences, and if everything has an essence, these claims are mistaken. Of course, such philosophers might respond by denying that ontological dependence ought to be understood in terms of essential containment, but this is a formerly unappreciated cost of these positions.

Euthyphro: I can now see the impact this has for my initial contention—and for others who posit metaphysical primitives. If we use the term ‘primitive’ as you—to describe entities lacking an essence—such claims are false. In describing entities that we take to perform heavy explanatory work, we owe a characterization of what these essences are. For those who countenance merely partial essences—those that do not individuate—these properties need not identify those entities uniquely. For those who hold that partial essences are all part of full essences, these properties must individuate.

Socrates: I believe this is so. However, the implications for metaphysics are even more significant than the implications for metaphysicians are. Entities may be structured in one of three ways:

- i) There are primitive entities: those that do not have essences and form the basis of the essences of other things.
- ii) There is an infinite chain of essence. All entities have essences, and there is no ultimate basis.
- iii) There are circular essences. Through a chain of some length or other, an entity has an essence in terms of other entities that have essences in terms of the first.

These possibilities employ the notion of essential containment. If, for example, water is essentially a chemical compound, then we might say *being a chemical compound* is contained within the essence of water. And if *being a chemical compound* is essentially a property, then we might say *being a property* is contained within the essence of *being a chemical compound*. And so there are entities (perhaps infinitely many entities) that stand in a relation of essential containment to one another. Perhaps there are entities that lack an essence that contains anything (i).⁷ Or, perhaps, there are entities whose essences contain themselves, either mediately or immediately (ii). Maybe, for example, there is some entity

⁷One possibility, which I set aside, is that some entities have essences but that these essences do not contain anything. I do not know how to comprehend what such an entity would be. Any way of articulating this essence would provide it with content—it would specify what features were essential to the entity in question. But once such an articulation was provided, we may understand those very features as being essential to the entity in question.

e whose essence contains e' whose essence itself contains e . Or, perhaps, there is an infinite series of entities that each essentially contain another without end (iii).

To see why these alternatives are exhaustive, let us consider the set E of entities, and the binary relation R on e , such that ' $R(e, e')$ ' asserts that e' is contained within the essence of e . Let us select an arbitrary entity $e_n \in E$. Now, if there is no e_m such that $R(e_n, e_m)$, then e_n is primitive in my sense of the term, and option (i) is true. If there are no primitives, then there must be such an e_m . But, of course, e_n was selected arbitrarily, so such an argument also requires that there exist an e_o such that $R(e_m, e_o)$ — e_m must also contain something within its essence. This possibility may be carried out indefinitely. If, at some point, we arrive back at e_n , then option (ii) is true. If, instead, this process proceeds through infinitely many distinct entities, then option (iii) is true.

Theoretically, several of the three possibilities could hold. Perhaps there are infinitely long chains of essences and circular essences as well. The argument I present is intended to eliminate the first possibility. This is so regardless of whether all essences individuate. I myself am more drawn to the second possibility than to the third. I suspect the world is essentially 'gunky,' but I have no new argument against circular chains of essences. Option (i), however, must go.

Euthyphro: But why must these be the only three alternatives? Is there not a fourth option—perhaps *being e* is essential to an entity e . This may be the most plausible view of what e 's essence is.

Socrates: I do not believe this alternative is distinct. The property of *being e* strongly resembles the property *being identical to e*, which we formerly discussed. As I said, there are some who take it to be essential to identity that everything is identical to itself (and on that basis conclude it is essential to identity that e is identical to e), while denying that it is essential to e that it is self-identical. Such philosophers, at least, would not avail themselves of such a move.

In any case, the claim that *being e* is essential to e strikes me as clearly a circular essence. It is one that explicitly and directly concerns the entity whose essence it is. If *being the chemical compound sodium chloride* is essential to salt, then sodium is contained within the essence of salt. And so if *being e* were essential to e , then e would be contained within its own essence. This is a paradigmatic case of circular essences. Perhaps some find it a particularly appealing circular essence, and I have no argument against that here. Nevertheless, it is an instance of possibility (iii).

The ontological question can be posed quite succinctly: what exists? Quine noticed that an accurate answer is even more concise: everything (1948). Metaphysicians, however, are unconcerned with every particular case. The presence of blue T-shirts receives scant attention in the literature. Rather, metaphysicians are particularly concerned with the fundamental: with the most basic building blocks of reality. A more restricted such ontological question, then, is the following: what is primitive? On at least one understanding of 'primitive,' the answer can be given as concisely as—and substantially more informatively

than—Quine's: nothing.

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Appendix

Assume a B modal system and grant the following suppositions:

- i. $Prim(x) =_{df} \neg Def(x)$.⁸
- ii. $\Box(Def(x) \rightarrow \Box Def(x))$ ⁹

Proof that $Prim(p) \rightarrow \Box Prim(p)$:

- | | | |
|-----|---|----------------------------|
| 1. | $\neg(Prim(p) \rightarrow \Box Prim(p))$ | Supposition (for Reductio) |
| 2. | $Prim(p) \wedge \neg \Box Prim(p)$ | From 1 |
| 3. | $Prim(p) \rightarrow \Box \Diamond Prim(p)$ | B axiom |
| 4. | $\Box \Diamond Prim(p)$ | From 2 and 3 |
| 5. | $\Diamond \neg Prim(p)$ | From 2 |
| 6. | $\Diamond Def(p)$ | From i and 5. |
| 7. | <u>$Def(p)$</u> | |
| 8. | $Def(p) \rightarrow \Box Def(p)$ | From ii |
| 9. | $\Box Def(p)$ | From 7 and 8. |
| 10. | $\Diamond \Box Def(p)$ | From 7-9 |
| 11. | $\Diamond \Box \neg Prim(p)$ | From i and 10 |
| 12. | $\neg \Box \Diamond Prim(p)$ | From 11 |
| 13. | \perp | From 4 and 12. |
| 14. | $Prim(p) \rightarrow \Box Prim(p)$ | From 1-13 |

⁸That is, assume that being primitive is, by definition, not being defined.

⁹This is uncontroversial. When Fine attacked the connection between definition and modal logic he accepted that definitions hold with necessity. Instead, he argued that there are other necessary connections as well. That definitions are necessary is not taken to be a contingent fact about the world. Every metaphysically possible world is such that definitions hold with necessity.