

# Essence, Modality and Identity

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## Abstract

Many metaphysicians maintain that there is a close connection between essence and modality; if an object  $a$  necessarily bears property  $F$ , then it is metaphysically necessary that  $Fa$  (or, perhaps, it is metaphysically necessary that  $Fa$  if  $a$  exists). Recently, Leech (Forthcoming) has argued that this connection lacks an adequate explanation. In particular, she argues that identity doesn't explain the link between essence and modality. In contrast, I argue that identity provides the resources to undermine Leech's explanatory demand.

Objects bear their essential properties necessarily. If it is essential to Socrates that he is human, then it is necessary that Socrates is human; if it is essential to water that it is a chemical compound, then it is necessary that water is a chemical compound; and if it is essential to knowledge that it is a mental state, then it is necessary that knowledge is a mental state. No essential truths could possibly fail to obtain—they restrict the ways that the world might be.

So goes a standard metaphysical view. Historically, this was associated with modal accounts of essence.<sup>1</sup> The claim that an object  $a$  essentially bears property  $F$  was thought to amount to the claim that  $a$  necessarily bears property  $F$ . And if essence reduces to modality, it is no surprise that the phenomena go hand-in-hand. However, following now-canonical examples of Fine (1994, 1995*b*), many abandoned these types of accounts. There appear to be an abundance of necessary, yet inessential, connections between various sorts of things. It is presumably necessary that Socrates is the entity contained in {Socrates}, yet the essence of the man is unrelated to set theory. And although it is necessary that morally right acts are such that all birds are birds, one learns nothing about the nature of ethics by learning avian tautologies. While some holdouts remain, these types of examples have been largely regarded as conclusive; essence does not reduce to modality.

The connection between essence and modality, however, remains a metaphysical mainstay. Rather than accounting for essence in terms of modality, many argue that modality ought to be accounted for in terms of essence. Each entity generates its own sphere of essential truths—truths which obtain in virtue of the essence of that entity—and a proposition necessarily obtains just in case it follows from some collection of these essential truths.

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<sup>1</sup>It has been claimed that modal accounts of essence were once “so widespread that it would be pointless to provide references” (Correia, 2005, pg. 26). However, see Marcus (1967); Kripke (1980); Plantinga (1974) for defenses of this sort of claim.

The reason it is necessary that water is a chemical compound is that it follows from the essence of water that it is a chemical compound, and the reason it is necessary that the law of excluded middle holds is that it follows from every essential truth whatsoever.

However, there is a growing group of philosophers who challenge this metaphysical orthodoxy: those who maintain that essential truths may be contingent.<sup>2</sup> Their reasons vary, but most maintain that there is an explanatory challenge that has not been (and, indeed, cannot be) met: the explanation of the putative link between essence and modality.

But the orthodoxy has not gone without a fight. Correia and Skiles (2019) suggest that identity provides the link between essence and modality.<sup>3</sup> Roughly, the thought is this: essence itself can be understood in terms of identity, and the necessity of identity then gives rise to the necessity of essence. Suppose, for example, that to be a vixen is to be a female fox—that is, *being a vixen* is the same as *being a female fox*. It is in virtue of this, Correia and Skiles maintain, that *being a fox* is essential to *being a vixen*. And because identity claims hold necessarily, it is necessary that *being a fox* is essential to *being a vixen*.

Quite recently, Leech (Forthcoming) has argued that this approach fails; the need for explanation remains. Here, I argue that it succeeds; identity possesses the resources to discharge Leech’s explanatory demand.

Before proceeding to the details of Leech’s argument, a brief note on how radical I take her conclusion to be. If she were correct—and essential truths were contingent—the philosophical practice of providing hypothetical counterexamples would be severely undermined.<sup>4</sup> Hypothetical cases typically indicate that a counterexample *could* exist—they need not demonstrate that one *actually does*. For example, Gettier (1963) argues against the claim that knowledge is (essentially) justified true belief by providing hypothetical cases in which agents have justified true beliefs but lack knowledge. The particular cases Gettier describes may well have never obtained; the details are specific enough that, though they certainly seem possible, they may not be actual. If the claim that knowledge is (essentially) justified true belief held contingently, his examples would presumably have no purchase. After all, it may be that in *other* possible worlds—those possible worlds in which his examples obtain—knowledge isn’t essentially justified true belief, but that’s no threat to the claim that in the actual world it is. In order to demonstrate that knowledge isn’t

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<sup>2</sup>Here, I primarily respond to Leech (Forthcoming). See, also, Leech (2018); Gorman (2014); Romero (2019); Mackie (Forthcoming).

<sup>3</sup>Given the current interest in generalized identity (which sometimes also bear the label ‘identification’), I suspect that many metaphysicians find this mode of argumentation appealing. For further discussions of generalized identity, see Correia (2017); Rayo (2013); Cameron (2014); Dorr (2016); Bacon and Russell (2019); Caie, Goodman and Lederman (Forthcoming); Fritz (Forthcoming); Elgin (Forthcoming). Furthermore, I say that Correia and Skiles ‘suggest’—rather than ‘argue’—that the necessity of identity gives rise to the necessity of essence, because they do not explicitly address the modal status of essence in this paper. However, I follow Leech in taking this to be a natural extension of their view.

<sup>4</sup>More precisely, Leech argues that there is no *adequate explanation* for the link between essence and modality—rather than denying that the link exists. However it is natural to read this missing explanation as a reason to maintain that there is no link.

essentially justified true belief Gettier would have needed actual counterexamples: to travel the world and find actual agents who have justified true beliefs and lack knowledge. Those who think that Gettier's hypothetical cases suffice presumably maintain that if knowledge is essentially justified true belief, then it is necessary that knowledge is essentially justified true belief. Of course, this note isn't itself an argument against Leech; radical, revisionist views are sometimes correct. But I think it to be worth acknowledging what the implications of such a view are.

## Essence and the Necessity of Identity

Leech's argument targets the following principle:

(NP): If being (an)  $F$  is an essential property of  $x$ , then being (an)  $F$  is a necessary property of  $x$ .<sup>5</sup>

She takes this principle to be a reasonable characterization of the putative connection between essence and modality: one that many metaphysicians would endorse. I agree. She then argues that those who subscribe to NP owe answers to the following two questions:

- 1) What is essence?
- 2) Why should essence generate necessity?

She maintains that anyone who answers question 1) by appealing to identity will be unable to answer question 2). In order to understand how (or why) some might appeal to identity in order to answer question 1), a bit of background:

The notion of generalized identity is receiving sustained attention by contemporary metaphysicians. A generalized identity is a targeted reading of sentences of the form 'To be  $F$  is to be  $G$ ' in which the 'is' resembles the 'is' of identity in philosophically salient respects. Examples that naturally lend themselves to this reading include:

- i) To be morally right is to maximize utility.
- ii) To be human is to be a rational animal.
- iii) To be made of water is to be made of H<sub>2</sub>O molecules.
- iv) To be even is to be an integer divisible by two without remainder.
- v) To be a béchamel is to be a roux with milk.

Generalized identities exhibit variety; while some are knowable *a priori*, others are sensitive to empirical investigation. These sentences are typically taken to be reflexive, symmetric and transitive—and it is often held (though admittedly without much argument)

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<sup>5</sup>This precise principle was first proposed by Mackie (Forthcoming).

that these sentences are necessarily true if true, and it necessary that all and only  $F$ s are  $G$ s.<sup>6</sup>

Correia and Skiles (2019) argue that essence ought to be understood in terms of generalized identity. In particular, they maintain that statements of essence ought to be understood in terms of statements of conjunctive part, and statements of conjunctive part ought themselves to be understood in terms of generalized identity. Take, for example, the claim ‘Plato is essentially human.’ Presumably, there is more to what it takes to be Plato than to be human. The basic thought is that ‘being human’ leaves out part of the essence of Plato—something which identifies Plato uniquely. If ‘being human’ were conjoined with the appropriate material (the remainder of Plato’s essence), there would be an identity claim: something that would fully determine what it takes to be Plato. More precisely, they subscribe to the following:

**Partial Generic Essence:**

$F$  is essential to  $G$  just in case there is some  $H$  such that to be  $G$  is to be  $F \wedge H$ .

This accounts for why *being a sibling* is essential to *being a brother*; it is because to be a brother is to be a male sibling.

Of course, Correia and Skiles’ theory does not itself account for (NP). It makes no mention of modality at all. But—when coupled with the necessity of identity—it does. Because identity claims hold necessarily, (and because ‘to be a brother is to be a male sibling’ is an identity claim) it is necessary that to be a brother is to be a male sibling. There are no possible situations in which brothers are not siblings. *Et voilà!* (NP) is vindicated.

But here, Leech objects. For why should we accept the necessity of identity?<sup>7</sup> If there is no adequate reason to believe that identity claims necessarily obtain, then this defense of (NP) is, at best, incomplete. In response, some might appeal to the Kripke (1971); Marcus (1947) proof of the necessity of identity:

- |    |                                                                           |                            |
|----|---------------------------------------------------------------------------|----------------------------|
| 1) | $\forall x, y((x = y) \rightarrow (Fx \rightarrow Fy))$                   | Leibniz’s Law              |
| 2) | $\forall x \Box(x = x)$                                                   | Necessity of Self-identity |
| 3) | $\forall x, y((x = y) \rightarrow (\Box(x = x) \rightarrow \Box(x = y)))$ | Instance of 1              |
| 4) | $\forall x, y((x = y) \rightarrow \Box(x = y))$                           | 2, 3, Classical Logic      |

Just as this establishes the necessity of identity of objects, so too a parallel proof establishes the necessity of identity of entities of arbitrary types. But, Leech claims, line 2 is question-begging. The proof builds on the assumption that it is necessary that all objects are self-identical. What explains the fact that this is true? Until such an explanation is provided, “this just moves the bump in the carpet” (Leech, forthcoming pg. 14). In order

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<sup>6</sup>See (Dorr, 2016, pg. 40) for a brief discussion of the modal status of generalized identity.

<sup>7</sup>This charge is especially biting given recent attacks on the necessity of identity. See Kocurek (2018).

to account for the link between essence and generalized identity, we needed to appeal to the necessity of generalized identity. This is viciously circular—no adequate explanation has been given. What she seeks is an explanation of (NP) that does not build upon modal assumptions, and the appeal to the Kripke/Marcus proof fails in that regard.

Some may try a different tack. After all, Kripke does not merely rely upon this proof: he buttresses it with linguistic support.<sup>8</sup> He argues that proper names are rigid designators: they identify the same object in every possible world. So, since ‘Hesperus’ and ‘Phosphorus’ identify Venus in every possible world, and since Hesperus is (actually) Phosphorus, ‘Hesperus is Phosphorus’ is necessarily true. Along these lines, some might argue that phrases of the form ‘To be  $F$ ’ are rigid designators: they identify the same property (relation, etc.) in all possible worlds.<sup>9</sup> And because ‘To be  $F$ ’ identifies the same thing in every possible world, if ‘To be  $F$  is to be  $G$ ’ is true then it is necessarily true.

Leech does not consider this suggestion, but I suspect that her reply would be the same. The bump has been moved in the carpet; the problem has not been resolved. The claim that ‘To be  $F$ ’ is a rigid designator is a *modal claim*: it is the claim that the phrase identifies the same thing in every possible world. Those who demand an explanation of (NP) require an explanation not built upon these types of modal assumptions, and this explanation does not suffice. Alternatively, she may maintain that considerations about rigid designation are, primarily, linguistic considerations—and there is no explanation for why these types of linguistic considerations can account for the link between essence and modality.

And so, Leech concludes,

“The essentialist account of modality, which takes (at least) metaphysical modality to have its source in the essences of things, faces the challenge to explain why we should agree that essence gives rise to necessity, that is, to defend something like (NP). One promising option seemed to be to appeal to an account of essence given in terms of generalized identity, and in turn to appeal to the necessity of generalized identity. I have argued that this response to the challenge is threatened by circularity.”(Leech, Forthcoming, pg. 20)<sup>10</sup>

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<sup>8</sup>See Kripke (1980).

<sup>9</sup>One complication arises from the fact that, some argue, ‘To be  $F$ ’ does not strictly denote—see Dorr (2016); Correia (2017). I take it that Dorr and Correia could maintain that ‘To be  $F$ ’ is the nominalized equivalent of a rigid designator without impacting the form that this response takes.

<sup>10</sup>Leech offers several further arguments than the one I discuss. For example, she discusses the proposal that it is provable that ‘To be  $F$  is to be  $F$ ’ on Correia and Skiles’ system of logic, and appealing to  $\mathbf{K}$ —the weakest normal modal logic—according to which the results of theorems necessarily obtain. I omit these discussions because my objection, rather than concerning possibilities Leech does address, concerns one she does not.

## Identity and Metaphysical Explanation

Contra-Leech, I maintain that identity possesses the resources to discharge the explanatory demand. I say ‘discharge’ rather than ‘meet,’ because the first part of my reply is the denial that there is an explanatory demand to be met. This denial is not unmotivated—it is initially based upon the following:

1) The link between essence and modality is *itself* an identity claim.

1) is based upon the particular view of modality I accept. This could be framed in several ways, but it is summed up as the following schema (with applications for every proposition  $p$ ):

### **The Identification of Modality with Essence (TIME):**

For it to be metaphysically necessary that  $p$  is for it to follow from essential truths that  $p$ .

This is itself a generalized identity: an identification of modality with essence. I note, to begin with, that it avoids Fine’s counterexamples that plagued modal accounts of essence. Although it is necessary that Socrates is contained within {Socrates}, it need not follow that it is essential to Socrates to be contained within {Socrates}. All that is required is that ‘Socrates is contained within {Socrates}’ follows from some essential truths or other (presumably, it follows from the essence of {Socrates}). Of course, not all those who accept (NP) will accept the identification of modality with essence. But my aim is not to show that everyone has the resources to evade Leech’s explanatory trap, but rather to demonstrate that it may be evaded.<sup>11</sup>

TIME provides a reason to endorse (NP). If it holds, it is no surprise that objects bear their essential properties necessarily. After all, if it is an essential truth that  $Fa$  (i.e., if it is essential to  $a$  that  $Fa$ ), then it will follow from essential truths that  $Fa$ —in particular,  $Fa$  follows from itself. But I have no doubt that Leech would find the appeal to TIME unsatisfactory. I suspect she would claim that, once again, the bump has been merely moved in the carpet (and not moved particularly far, at that). After all, what explains why TIME is true? Until an explanation of *that* has been provided, we remain without a satisfactory explanation of (NP).

But here’s the trick:

2) Identity claims lack (metaphysical) explanations.

Because identity claims *in general* lack explanations, there is no explanation to be had of TIME. But rather than a flaw, this is a feature. The missing explanation is no reason to

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<sup>11</sup>Although my proposal differs from the Correia/Skiles line Leech replies to, I take it that her worry is intended to apply to my sort of view as well.

deny that TIME is true—any more than the missing explanations for *other* identity claims is a reason to deny that *they* are true.

The view that identity claims lack metaphysical explanations has a long and rich history. Take, for example, the following:

“Identity is utterly simple and unproblematic. Everything is identical to itself; nothing is ever identical to anything else except itself. There is never any problem about what makes something identical to itself; nothing can ever fail to be. And there is never any problem about what makes two things identical; two things never can be identical.” (Lewis, 1986, pg. 192-3)

“Identities are excellent stopping places for explanation; they do not cry out for explanation in their own right. Indeed, there is something odd about questions like ‘Why is Hesperus Phosphorus?’. Unless this is understood as a request for being reminded of the reasons for *believing* that Hesperus is Phosphorus, it is hard to know what would count as a satisfying answer. It is tempting to respond by citing some metalinguistic facts, as if one had been asked why ‘Hesperus’ refers to the same thing as ‘Phosphorus’. But of course that is a quite different question. And this also applies to questions like ‘Why is it that to be a vixen is to be a female fox?’ Once we set aside the “remind me of reasons to believe” reading, and metalinguistic questions about the word ‘vixen’, it is hard to see what an answer would even look like.” (Dorr, 2016, pg. 41).<sup>12</sup>

“Where  $x$  is a possible individual from a possible world  $w_1$  and  $y$  is a possible individual from a possible world  $w_2$ , if  $x = y$  then there is no fact about their qualitative character...in virtue of which this is so...For surely there is no qualitative fact about  $x$ , other than the fact of its possible existence, in virtue of which  $x = x$ ...It follows by Leibniz’s law that if  $x = y$ , then  $y$  is also such that there is nothing in its qualitative character that makes  $x$  identical with it. (Salmon, 1987, pg. 153).

“But such talk [about what identity consists in] has to be used and interpreted with extreme care. For it is sometimes read as implying that an identity criterion is supposed to tell us what *makes* an object  $x$  equal to (or different from) object  $y$ ...Everyone agrees—or should agree—that such an analysis of the relation of identity of objects of a kind can never be had.” (Horsten, 2010, pg. 416).

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<sup>12</sup>Some may suspect that the reason that ‘To be a vixen is to be a female fox’ lacks an explanation is because it is analytic, rather than because it is a generalized identity. I suspect that Dorr’s point holds equally well for ‘To be made of water is to be made of the chemical compound  $H_2O$ ’, which is not plausibly analytic.

Philosophers have different reasons for denying that identity can be metaphysically explained, but much is drawn from the difficulty of providing any satisfactory explanation.<sup>13</sup> It is hardly clear how one ought to go about explaining what makes it the case that Hesperus is Phosphorus—and this difficulty generalizes to many cases philosophers have considered.

And so, the view at issue is this: the link between essence and modality is itself an identity claim. Identity claims lack metaphysical explanations, so this particular claim lacks a metaphysical explanation. In a sense, this might seem to concede Leech’s point—she is quite right that an explanation is missing—but its bite is gone. The ‘missing explanation,’ as it were, is no reason to deny that TIME is true, any more than the difficulty in explaining why Hesperus is Phosphorus is a reason to deny that ‘Hesperus is Phosphorus’ is true.

There are three potential responses that I can foresee. The first is to deny that identity claims lack metaphysical explanations. If identity claims can generally be explained, then TIME has an explanation as well. The request for an explanation can (and ought) to be met precisely because *all* identity claims have explanations.

To those tempted by this response, I challenge them to find explanations of why Hesperus is Phosphorus (and of why to be a vixen is to be a female fox). I suspect they will find it to be just as challenging as finding a metaphysical explanation of TIME. Until these explanations are provided, there is no reason to think that the difficulty in explaining TIME is particularly problematic. It’s in the same boat as every other identity claim.

The second potential response is to admit that identity claims *often* lack explanations, but to claim that TIME *in particular* demands one. Philosophers tempted by this response need not explain what makes Hesperus the same as Phosphorus—after all, it may be one of those identity claims that lacks an explanation. Still, they might claim, TIME is the type of principle which warrants explanation.

I meet this explanatory demand with one of my own. Why is it that some identity claims warrant explanation while others do not? What makes it the case that TIME is a principle which, if true, has an explanation for why it is true, when there is no such explanation for why ‘To resemble is to be similar to’ is true? What I ask for is an explanation for the explanatory demand: a reason why a particular generalized identity is the type of thing which ought to be explained—when others hold without explanation.<sup>14</sup> Until *that*

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<sup>13</sup>Another line of reasoning is brought out in Dasgupta (2016)—who defends a version of metaphysical rationalism according which everything *which is apt* for an explanation has an explanation—but facts about essence are not apt for explanation. I take it that this view could be altered such that facts about identity are not apt for explanation while remaining in the spirit of Dasgupta’s rationalism.

<sup>14</sup>Perhaps Leech would appeal to the controversiality of TIME to account for the explanatory demand. It might be argued that *uncontroversial* identity claims need no explanation, but *controversial* ones do. And the very fact that Leech has published her paper is evidence that TIME is controversial. I suspect that the argument from controversiality applies most directly to epistemic explanation—which I address in the following section. It is not clear why controversy over a topic would indicate that it may be metaphysically explained. However, I also note that there are many controversial identifications which resist metaphysical explanation. For much of human history, humans were unaware that water is the chemical compound  $H_2O$ . But this controversy need not imply that there is an explanation of what makes water the same as  $H_2O$ .



explanatory challenge is met, I deny the need to explain why TIME is true.

The third response, and the one I find the most promising, is to claim that metaphysical explanation is not at issue. It may be, Leech might reasonably claim, that TIME cannot be metaphysically explained (and that this inexplicability is not to be held against it). Nevertheless, metaphysical explanation is not the only kind of explanation there is. We may ask what reasons there are to believe that Hesperus is Phosphorus, even if we admit there is no metaphysical explanation as to why Hesperus is Phosphorus. So too, it seems, we may ask what reasons there are to believe that TIME holds, even if we admit there is no metaphysical explanation as to why it holds.

This is a fair challenge. As I argue below, it can be met.

## Identity and Epistemic Explanation

The remainder of this paper consists in the development of an epistemic explanation of TIME. It is not—and is not intended to be—a metaphysical explanation. As I say above, I deny there need be an explanation of that sort. But there is a reason to hold that TIME is true. What I sketch below is a positive conception of modality. It is a view I take to be true—and one which vindicates (to at least some degree) TIME.

There are numerous varieties of modality.<sup>15</sup> Quite plausibly, there is a notion of physical necessity, logical necessity, epistemic necessity, deontic necessity, metaphysical necessity, and many more. The relation between these varieties is hotly contested. I maintain that it is this: *they are varieties that result from holding the truth-values of different propositions fixed*. Physical necessity is the type which results from holding fixed the laws of physics. If every possible world in which the laws of physics obtain is such that  $p$  is true, then it is physically necessary that  $p$ .<sup>16</sup> Epistemic possibility is the type which results from holding fixed the facts about what agents know. If every possible world in which what  $S$  actually knows to be true is true is a world in which  $p$  is true, then it is epistemically necessary (for  $S$ ) that  $p$ . And, in a parallel manner, deontic modality is that variety which results from holding fixed propositions in which agents act as they may. I have even heard it suggested that logical necessity is that which results from holding fixed the logical truths.<sup>17</sup> But why does holding fixed the truth-values of *these* propositions result in a type of modality? What about holding fixed the truth-values of others?

I can see no principled reason for why some propositions should generate a type of modality while others should not. And so, I propose that any collection of propositions gives rise to a variety of modality. There is a type of modality resulting from holding fixed the truth of ‘roses are red’ and ‘violets are blue’—as well as one from holding fixed the

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<sup>15</sup>See Fine (2002) for an argument that metaphysical, natural, and normative necessity cannot be reduced to each other.

<sup>16</sup>Likewise for physical possibility: if there is at least one possible world in which the laws of physics obtain in which  $p$  is true, then it is physically possible that  $p$ .

<sup>17</sup>My thanks to Arif Ahmed for pressing me on this point.

truth of ‘water is wet’ and ‘fire is hot.’ For an arbitrary collection of propositions  $pp$ , let us represent the type of necessity that they generate (i.e., the type in which we hold fixed all of the  $pp$  as true) with the indexed modal operator:  $\Box^{pp}$ .<sup>18</sup> ‘ $\Box^{pp}q$ ’ holds just in case every possible world in which all of the  $pp$  are true is a world in which  $q$  is true as well.

The selection of the propositions that are held fixed impacts the modal logic governing that variety of necessity. For example, if one (or more) of the  $pp$  is actually false, then then the **T** axiom ( $\Box^{pp}q \rightarrow q$ ) will fail. After all,  $\Box^p p$  is universally true—but  $p$  may well be false.<sup>19</sup>

The vast majority of the varieties of necessity are philosophically unimportant. I can think of no use for the type of necessity resulting holding fixed the truth of ‘The Washington Nationals won the World Series.’ But it is a variety of necessity nonetheless. Its uselessness reflects the philosophical unimportance of the Washington Nationals—not the infelicity of that variety of necessity.

There is, then, a type of necessity which results from holding fixed the facts about essence: from holding fixed the truth-value of ‘Plato is essentially human,’ ‘Knowledge is essentially a mental state,’ and all the rest. There is nothing special about the essential truths in this regard. Because every collection of propositions generates a variety of necessity, the essential truths generate a variety of necessity.

However, an important question remains. It may be, of course, that the essential truths generate *some variety of necessity of other*. But is that variety the same as metaphysical necessity? One method to establish that it is is straightforward: take the necessity generated by the essential truths and to dub it ‘metaphysical necessity.’ But there is no guarantee that this variety aligns with ‘metaphysical necessity’ as metaphysicians have previously used the term.

There is, I maintain, but one way to find the answer: to check. If the two varieties are the same, then they ought to yield the same verdict in the same cases. If a proposition  $p$  were metaphysically necessary but didn’t hold in all possible worlds that hold fixed the essential truths, that would be a reason to deny that this variety is the same as metaphysical necessity. Conversely, if proposition  $p$  were true in all possible worlds that hold fixed the essential truths but were not metaphysically necessary, that would also be a reason to deny that this variety is the same as metaphysical necessity. If none of these examples arise, there is no reason to deny that this variety is metaphysical necessity.

How to the cases play out? It seems metaphysically necessary that Socrates is human, and it seems to follow from the essence of Socrates to be human. It seems metaphysically

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<sup>18</sup>The use of the superscript is intended to distinguish this indexed modal operator from that appearing in Fine (1995*b,a*), which employs the indexed modal operator  $\Box_F$ . Fine’s operator is different from mine. ‘ $\Box_F p$ ’ is intended to be read as ‘It lies in the essence of  $F$  that  $p$ , while ‘ $\Box^{qq} p$ ’ is to be read as ‘It is  $qq$ -necessary that  $p$ ’ (i.e., that the type of necessity resulting from holding fixed all the  $qq$  true is one such that necessarily  $p$ ).

<sup>19</sup>This can be conceived of as the source of failure of **T** for deontic logic. If we hold fixed the propositions about agents acting as they may, it may be deontically necessary that  $S \phi$ s. Nevertheless, it may be actually false that  $S \phi$ s if  $S$  does not act as  $S$  ought to.

necessary that water is a chemical compound, and it seems to follow from the essence of water that it is a chemical compound. Further cases may (and should) always be considered. But until trouble arises it is reasonable to proceed under the assumption that this variety of necessity—that variety resulting from holding fixed the essential truths—is metaphysical necessity. The type of reason is fallible and abductive. But it is a reason nonetheless. We ought to endorse the connection between essence and metaphysical modality because the cases of metaphysical necessity align with the necessity generated by the essential truths.

Leech attacks the connection between essence and modality with an explanatory demand. This demand takes two forms based upon the type of explanation that may be at issue. The demand for a metaphysical explanation cannot be met—but, I have argued, this is no theoretical cost to bear. The demand for epistemic explanation can be met, and is best met by verifying individual cases. For now, at least, the link between essence and modality survives.

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