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Can a Necessity Be the Source of Necessity?

James L. D. Brown

University of Sheffield

Abstract

This paper asks whether a necessity can be the source of necessity. According to an influential argument due to Simon Blackburn, it cannot. This paper argues that although Blackburn fails to show that a necessity cannot be the source of necessity, extant accounts fail to establish that it is, with particular focus on Bob Hale's essentialist theory and Christopher Peacocke's 'principle-based' theory of modality. However, the paper makes some positive suggestions for what a satisfactory answer to the challenge must look like.

Keywords: Necessity, Modality, Essentialism, Bob Hale, Christopher Peacocke.

1. Introduction

There are many things that are true. Of these things, some are necessarily true, in the sense that they could not have been otherwise. For instance, it is not only true that 2 + 2 = 4, or that all red things are coloured; these things could not have been otherwise. But what, if anything, explains why these things are not simply true, but necessarily so? What makes necessary truths necessarily true? What is the source of necessity?

Since Dummett (1959: 327) posed the question over six decades ago, metaphysical inquiry into the nature of modality has boomed. Once considered to be in bad taste, modal notions are now seen as an invaluable theoretical resource, their use commonplace throughout philosophy. Given such prominence, the question of how necessity fits into our wider conception of ourselves and the world around us becomes all the more pressing. For instance, how does necessity fit into the world as described by the natural sciences? How can we know about necessity if it is outside the causal order? And how does necessity relate to hyperintensional notions like essence, dependence, and ground?

If we can explain where necessity comes from, then we might think that we would be better placed to answer these questions. However, some see such inquiry as fundamentally misguided. According to an influential argument due to Blackburn (1993), any attempt to account for the source of necessity is doomed to failure. For either its source is itself necessary, inviting circularity or regress, or it is

contingent, undermining the necessity being accounted for. Consequently, the argument concludes, necessity has no source, and we need an understanding of modality that squares with this conclusion.

This paper examines the first horn of Blackburn's dilemma, namely whether a necessity can be the source of necessity.[1] I argue that while Blackburn fails to show that a necessity *cannot* be the source of necessity, extant accounts fail to establish that a necessity is in fact the source of necessity. The plan is as follows. First, I outline Blackburn's argument in more detail (section 2). Second, I examine whether *essences* could be the source of necessity, focusing on Hale's (2013) essentialist theory of modality (section 3). While I argue against Hale's theory, the structure of the theory shows that a necessity can in principle be the source of necessity. I then propose an additional, general constraint on any successful solution to dilemma (section 4). Finally, I examine Peacocke's (1999) 'principle-based' theory of necessity as a putative example of an account that meets the proposed constraint (section 5). However, I argue that the considerations offered in favour of the view underdetermine whether the theory successfully answers Blackburn's dilemma.

2. Blackburn's Dilemma

Blackburn (1993) argues that any attempt to explain the source of necessity is doomed to failure. Schematically, suppose that any attempt to explain some necessity takes the following form:

(1) $\Box p$ because q.[2]

A dilemma arises when we ask whether q is necessary or contingent. On the first horn, suppose q is necessary. If we were simply looking to explain the necessity of some particular proposition p, then invoking another necessity q might be unproblematic. However, by invoking a necessity to explain the source of necessity *in general*, the explanation appears either viciously circular or apt to generate a regress. This is because the necessity of q is left unaccounted for; in Blackburn's words, "there will be the same bad residual 'must'" (1993: 53). On the second horn, suppose q is contingent. In this case, it could have been the case that not-q. But then it seems that p could have been otherwise, thus undermining its necessity: "if that's all there is to it, then twice two does not have to be four" (Blackburn 1993: 54). Given that q must either be necessary or contingent, all options have been exhausted. Hence, Blackburn concludes, necessity has no source.

Instead, Blackburn proposes an expressivist or 'projectivist' theory of modal discourse according to which claims about necessity express a certain kind of unimaginability or inconceivability. In a quasi-realist spirit, this view does not deny that there are necessities, or that modal explanations "*within* the modal sphere" (Blackburn 1993: 54) cannot be genuinely explanatory or render our modal notions intelligible in new ways. But it does deny that our beliefs about necessity are explained in terms of our representing a certain kind of worldly fact. A virtue of Blackburn's account is that it provides an explanation for why necessity has no source. Blackburn provides a deflationary metaphysics of necessity that allows us

[1] In this paper, I am concerned exclusively with *metaphysical* necessity.
[2] Cameron (2010: 137f) raises some worries about whether an explanation of the source of necessity must take this form. However, I will ignore those complications here and follow Blackburn's lead.

to legitimately attribute necessity without incurring any substantive metaphysical commitments that stand in need of explanation. On this understanding, there is no metaphysically robust property of necessity whose source needs accounting for. To make a necessity claim is to express a non-descriptive modal commitment, and to try and explain its metaphysical 'source' is to misconstrue the discourse as describing modal reality.

Whatever the fate of Blackburn's positive view, one need not embrace it as a consequence of the dilemma. One might instead maintain that necessity has no source because it is metaphysically primitive. On this view, necessity is part of the basic fabric of reality and cannot be explained by anything more fundamental. Blackburn does not appear to take such an approach seriously. In part, this seems to be due to scepticism about whether the primitivist really succeeds in character-ising a distinct view (1993: 57f). After all, the projectivist will agree that facts about necessity are irreducible and not explicable in terms of more fundamental facts. So what is added by saying that one is a 'realist' about those facts? We can-not mean, for instance, that modal properties exist in space or are casually respon-sible for our apprehension of modality. So the primitivist faces a challenge to frame the ontological debate in a way that distinguishes their view from the pro-jectivist's. However, Blackburn hardly shows that this cannot be done. Perhaps modal properties are indispensable in an overall explanatory account of how the world is. But however this debate plays out, the important point for our purposes is that, like the projectivist, the primitivist denies that necessity has a source. This is because the primitivist claims that there is nothing that makes (fundamental) necessary truths necessary. Their necessity is simply a brute fact.

So accepting Blackburn's argument need not commit one to projectivism about modality. Moreover, as well as primitivism, one could also accept the con-clusion of the argument if one accepted an error-theoretic or fictionalist view of necessity. Because such views deny that there really is any such thing as necessity, these views will deny that there is such a thing as the source of necessity. In any case, because the purpose of this paper is to examine the prospects of accounting for the source of necessity in light of Blackburn's challenge, I will not explore any of these views in more detail (though we will return to the question of whether primitivism can explain the source of necessity). Our task is therefore not to find a way to accommodate Blackburn's conclusion, but to find a way to reject it. While this paper will focus on the necessity horn of the dilemma, it is worth briefly examining why the contingency horn of Blackburn's dilemma is not as sharp as it might first appear.

Consider again the schematic explanation that $\Box p$ because q. Suppose that q is contingent; for example, perhaps q appeals to facts about our linguistic conven-tions. According to Blackburn, this undermines the necessity of p. From the claim that q might have been false, Blackburn concludes that p cannot be necessary. However, this inference is problematic for two reasons. First, even if q is false, p might be true (and necessary) for some other reason. Second, the inference relies on the S4 principle $\Box p \rightarrow \Box\Box p$, which proponents of the contingency horn may very well reject. By rejecting this principle, they can reject Blackburn's claim that the contingency of the explanans undermines the necessity of the explanandum. On this view, q does in fact explain $\Box p$, but it still might have been the case that $\Box p$ is false. So the dilemma itself is not obviously fatal for the contingency theorist. That said, standard varieties of contingency theories, such as conventionalism,

encounter serious problems of their own.[3] As such, I will not discuss them further here. For the remainder of this paper, I will focus on the necessity horn, asking: can a necessity be the source of necessity?

3. Hale's Essentialist Theory of Necessity

In this section, I examine Hale's (2013) response to Blackburn's dilemma.[4] First, I outline his *structural* solution (section 3.1). Second, I outline his *substantive* solution (section 3.2). Third, I argue that his substantive solution fails to answer the dilemma (section 3.3). Fourth, I consider two objections to my argument (section 3.4).

3.1. Hale's Structural Solution

In order to embrace the necessity horn of Blackburn's dilemma, we need an explanation of the source of necessity in which the explanans is necessary without this engendering any kind of problematic regress or circularity. To see how this is possible, we can first note that from the truth of

(1) $\Box p$ because q

and the truth of

(2) $\Box q$

it does not follow that

(3) $\Box p$ because $\Box q$.

Rather, we might understand (1) to mean

(4) $\Box p$ because of *the plain fact* that q.

Thus, even if q is necessary, its necessity need not play any role in explaining the necessity of p. It might simply be the truth *simpliciter* of q that explains p's necessity. If it is the truth *simpliciter* of q that explains p's necessity, then it seems that we have a way of answering Blackburn's challenge. Because the necessity of q does not figure in the explanation of p's necessity, there is no "bad residual 'must'" that engenders circularity or regress.

To explain the difference between (3) and (4), Hale (2013: 96) distinguishes between *transmissive* and *non-transmissive* explanations of necessity. A transmissive explanation is one in which the necessity of the explanandum is explained by the necessity of the explanans. An example might be where the necessity of the conclusion of an argument is explained by the necessity of its premises. While transmissive explanations are perfectly fine as explanations of particular necessities, they cannot explain the source of necessity in general; rather, they stay *within* the modal sphere. By contrast, a non-transmissive explanation is one in which the necessity of the explanandum is explained by the truth *simpliciter* of the explanans.

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[3] For classical objections, see Quine (1939) and Dummett (1959). For a defence of the contingency horn using a possible worlds approach, see Morato (2014). For critique, see Wildman (2017). And for an alternative defence of the contingency horn, see Wildman (ms).

[4] Hale first develops this response in his (2002). While his initial discussion is more explicitly framed as a response to Blackburn's dilemma, I will focus on his (2013) as it will be informative to situate his response in relation to his broader views on necessity. In any case, the arguments from his initial discussion appear more or less unchanged in the latter.

A successful non-transmissive explanation will therefore ground the necessity of the explanandum in something non-modal, and thus *outside* the modal sphere.

Hale's distinction shows that, *pace* Blackburn, a necessity can be the source of necessity, at least in principle. I call this a 'structural' solution to the necessity horn of Blackburn's dilemma because it tells us how the dilemma can be answered without yet providing any substantive account of what q might be. So, granting the structural solution, it remains to be seen whether there is any plausible substantive solution to the dilemma. With this in mind, let us now examine Hale's substantive account of the source of necessity.

3.2. Hale's Substantive Solution

The substantive solution offered by Hale is a kind of *essentialist* account. It claims that necessity has its source in the *natures* or *identities* of things, where the nature of a thing is what makes that thing what it is and what fundamentally distinguishes it from other things.[5] Assuming natures exist, it is highly plausible that facts about natures are necessarily true. So an essentialist account of the source of necessity sits firmly on the necessity horn. However, it is also plausible that necessities can be grounded in plain facts about natures rather than in facts about their necessity. If correct, this would give us a suitably non-transmissive explanation of the source of necessity.

The account is best understood through examples. For instance, consider the following logical truth:

> (5) A conjunction of two propositions p and q is true only if p is true and q is true.

As a logical truth, (5) is necessarily true. But what makes (5) necessarily true? What is the source of its necessity? Hale (2013: 132) proposes the following:

> (6) □[A conjunction of two propositions p and q is true only if p is true and q is true] because conjunction *just is* that binary function of propositions the value of which is a true proposition iff both its arguments are true propositions.

Here, we have an explanation of a necessity in terms of the nature of an entity that the necessity is about, namely conjunction. Although conjunction has its nature necessarily, its necessity plays no explanatory role in (6). It is simply the plain fact of the explanans that accounts for the necessity of the explanandum. Thus, we have a non-transmissive explanation of necessity.

Another example (Hale 2013: 146):

(7) Anything red is coloured.

Although (7) is not a logical truth, it is highly plausible that it is necessary. So what is the source of its necessity? Hale proposes the following:

> (8) □[Anything red is coloured] because part of what it is to be red is to be coloured.

Again, we have an explanation of a necessity in terms of the nature of the entity that the necessity is about, namely the property of being red. Again, although the

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[5] See also Fine (1994) and Lowe (2008). I will use 'essence', 'nature', etc., interchangeably. 'Thing' is interpreted broadly to cover objects, properties, relations, or any other ontological category.

property of being red has its nature necessarily, this fact plays no explanatory role in (8). Thus, we have another non-transmissive explanation of necessity.

Generalising from these examples, we arrive at the following essentialist view of the source of necessity (Hale 2013: 150):

(9) $\Box p$ because it is true in virtue of the natures of $X_1,\ldots,X_n$ that p.

Hale argues that because (9) provides a fully general explanation of why there is necessity that does not appeal to modal notions in its explanans, we have a suitably non-transmissive explanation of the source of necessity.[6]

The general view provided by (9) still leaves a lot of scope for disagreement, because it is silent about which things have which natures. Thus, one could accept (9) even if one rejected (6) and (8). In any case, my focus here will be on the general account rather than any particular example. In the next section, I will argue that (9) fails to provide a sufficiently general account of the source of necessity.

3.3. The Necessity of Natures

When we ask of necessity, 'what is its source?', we are not asking for an explanation of some particular necessity or class of necessities. If necessity is taken to be philosophically problematic in some way such that we want to explain its source in terms of some less problematic domain, then an explanation that accounts for some but not all necessity will hardly do. Rather, we are asking for an explanation of necessity *in general* or of necessity *as such*.[7] However, Hale's essentialist account fails to provide such an explanation. Instead, it provides an explanation for the source of a particular kind of necessity: necessity grounded in natures. And this fails to account for at least one kind of necessity: the necessity *of* natures. As such, Hale's theory fails to adequately answer Blackburn's challenge. Or so I will argue in the remainder of this section.

It is highly plausible that things have their natures necessarily. If, for instance, what it is to be Aristotle is to have a certain biological origin, then there is no possible situation in which something could be Aristotle and lack that origin; it would simply be something else. So Aristotle, if he has this nature, has it necessarily. Necessities about natures stand in no less need of explanation than other

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[6] Hanks (2008) argues that Hale's explanations of necessity are transmissive explanations in disguise. He claims that if an explanation is genuinely non-transmissive, then it should not matter to the success of the explanation whether the explanans is necessary or contingent. But it *does* matter to the truth of (6) and (8) that the explanans is necessary. So, Hanks concludes, they must be transmissive. I think we ought to reject Hanks' criteria for non-transmissive explanations. Just because the explanation [p because q] presupposes the truth of r, it does not follow that r (partly) explains p. Plausibly, for example, any physical-causal explanation of why some event occurred presupposes the falsity of external world scepticism. But the falsity of external world scepticism does not figure in the explanation of every physical event. Thus, we should reject Hanks' criteria for non-transmissive explanations and reject his conclusion that Hale's explanations are in fact transmissive.

[7] One might reject this and instead maintain that Dummett's question should be read as asking for *a* source of necessity, where this might not apply to all necessity. This seems to be Hale's view; see also Wildman (ms). Given that Dummett's formulation asks for "its [i.e. *necessity's*] source" in the abstract singular, I think it is clear that Dummett is concerned with the source of necessity *as such*. Exegesis aside, however, I respond to the alternative reading in more detail below (section 3.4).

necessities. So the question arises as to how to explain such necessities assuming Hale's essentialist account. If Hale's account fails to explain the necessity of natures, then it fails to offer a fully general explanation of the source of necessity.

To see why the problem arises, consider what happens when we try to explain the necessity of natures from within Hale's framework. Recall that we characterised the essentialist view in full generality as follows:

(9) $\Box p$ because it is true in virtue of the natures of $X_1,\ldots,X_n$ that p.

If (9) is to provide a fully general account of the source of necessity, we should be able to substitute any necessary proposition for p. So what if p is a proposition about the nature of some entity X? If (9) ranges over all necessities, the necessity of p must then be explained by the nature of some entity or other.[8] What might this entity be?

There are two possibilities. If p is a proposition about X's nature, then p's necessity must be explained either by X's nature, or some other nature. However, Hale (2013: 158) sees both options as problematic:

> Any true proposition about the nature of a thing—that it is true in virtue of X's nature that ø(X), say—is indeed necessary. But its necessity cannot be explained. It cannot be explained by appealing once again to the nature of that very thing, for that would be viciously circular; it cannot be explained by appealing to the natures of any other things, for that would both undermine the claim that ø(X) is true in virtue of X's nature, and be viciously regressive; and it cannot be explained in any other way.[9]

Instead, Hale (2013: 158f) maintains:

> The point of the essentialist theory is not, then, to provide a reductive explanation of any necessities. It is, rather, to locate a base class of necessities—those which directly reflect the natures of things—in terms of which the remainder may be explained. The kind of explanation it offers, then, is not one which provides, as it were, an entry point into the class of necessities from outside—for no such 'external' explanation of necessity is possible—but one which exhibits the class of necessities as structured in a certain way, by identifying some necessities as basic or fundamental, and the rest as dependent, inheriting their necessity, ultimately, from necessities in the base class.

However, in the context of attempting to solve Blackburn's dilemma, this is a striking admission. For as we saw in section 2, regardless of the plausibility of primitivism, it entails that necessity has no source.[10]

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[8] I will assume for simplicity that the explanans cites facts about the nature of a single entity, though the foregoing applies *mutatis mutandis* where the explanans cites facts about the natures of several entities.

[9] Hale's argument here is very quick, and there are reasons to doubt its soundness (Wallner 2020). I address these difficulties in section 3.4 below.

[10] Wilsch (2017: 448) claims that all necessary truths can be explained in terms of their sources while also claiming that necessity is "a primitive feature of the world". However exactly we understand this view, the important point for here is that not all necessary truths can be explained by natures. Because Wilsch (2017: 439) also claims that every necessity "is ultimately explained by essence-truths", the argument of this section also applies to his 'sophisticated primitivism'.

Hale does not take there to be anything problematic in this approach. In part, this is because he has independently argued that reductive explanations of necessity are doomed to fail (2013: 69ff). However, assuming those arguments are sound, he only argues against a certain kind of reductive view of modality, namely combinatorial views. So for all that has been said, there may be some other satisfactory reduction of modality.[11] In any case, Hale surely presents us with a false dichotomy. Even if we reject a reductive view of modality, this does not force us to be primitivists about modality. The most natural way to take Dummett's question is as a question about grounding, or that in virtue of which things are necessary. And if modal facts are grounded in but not reducible to non-modal facts, then this will provide a non-reductive account of the source of necessity. So it is doubtful that Hale has shown that all options other than primitivism are off the table.

In any case, Hale's primitivism is striking because Hale clearly intends his view to provide a solution to Blackburn's challenge.[12] Responding to Blackburn's challenge was the reason for introducing the distinction between transmissive and non-transmissive explanations. If we accept a primitivist view of modality, then there is simply no motivation for appealing to non-transmissive explanations. For if we have reason to posit a metaphysically primitive class of necessities, then appealing to the necessity of this class in the explanation of other necessities will engender neither a regress nor circularity. So the structural solution is rendered completely unnecessary. The primitivist can simply say that all explanations of necessity are transmissive but bottom out when they reach the brute necessities.

Moreover, Hale's official non-transmissive view leads to an implausible disunity of the grounds of necessity. For we have one class of necessities grounded in a non-modal domain of facts, and another that lack any ground. If the first were grounded in the second class of necessities, then we would have a unified story about what grounds necessities; namely, the non-fundamental necessities are grounded in the fundamental necessities, and the fundamental necessities have no ground. Instead, we have a disunified view where the first class of necessities are so in virtue of non-modal facts about natures, and the second class of necessities are fundamental.[13]

Further, if we accept that necessities about natures are metaphysically primitive, the question arises as to whether there are other kinds of necessity that are metaphysically primitive. No part of Hale's view implies that there could not be other kinds. So for all that has been said, there may be many other kinds of necessity unaccounted for by Hale's theory. Perhaps Hale's theory would be simpler than such an opposing theory that admitted other kinds of basic necessities, but such a consideration hardly settles the matter.

3.4. Two Objections

Before proceeding to draw some more general lessons from our discussion, two objections need to be addressed. The first objection concerns Hale's argument

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[11] Most obviously in this context, one might try to reduce necessity facts to essence facts. See Wildman (2021) for discussion of this approach.
[12] This is most evident in the presentation of his views in his (2002).
[13] Even if one does not find such disunity inherently implausible, it certainly seems *less* plausible than the unified alternative in this particular case.

against an essentialist explanation of the necessity of natures. The second objection concerns the proper explanatory demands of an explanation of the source of necessity. I take each in turn.

To recap, Hale (2013: 158) argues against essentialist explanations of the necessity of natures as follows:

> Any true proposition about the nature of a thing—that it is true in virtue of X's nature that ø(X), say—is indeed necessary. But its necessity cannot be explained. It cannot be explained by appealing once again to the nature of that very thing, for that would be viciously circular; it cannot be explained by appealing to the natures of any other things, for that would both undermine the claim that ø(X) is true in virtue of X's nature, and be viciously regressive; and it cannot be explained in any other way.

This argument motivated Hale's primitivism, which I argued failed to explain the source of necessity. The problem, however, is that Hale does not explain why it is viciously circular to explain the necessity of some *X*'s nature in terms of *X*'s nature, nor why it is viciously regressive to explain it in terms of some other nature. Moreover, upon closer examination, we see that Hale's argument can be resisted. It might therefore seem that Hale is simply wrong to think that his account cannot explain the necessity of natures, and thus wrong to posit any primitive necessities in his theory. In what follows, I argue that although the argument that Hale presents us with fails, the dilemma can nonetheless be defended. I remain neutral on whether Hale himself would accept these arguments.

Let's begin with the first horn of Hale's dilemma. The kind of necessities under discussion are claims about natures of the form 'it is true in virtue of X's nature that ø(X)'. For example:

(10) It is true in virtue of the nature of Aristotle that he is human.

We have seen how (10) might explain the necessity of Aristotle's being human on Hale's account. But how might the necessity of (10) itself be explained? Suppose we try to explain its necessity in terms of Aristotle's nature. We would then get the following explanation:

(11) □[It is true in virtue of the nature of Aristotle that he is human] because it is true in virtue of the nature of Aristotle that [it is true in virtue of the nature of Aristotle that he is human].

Hale claims that this explanation is circular. On the face of it, however, it is not clear why (Wallner 2002: 5f). For (11) provides a non-transmissive explanation of a particular necessity in the general form of (9). So it seems wrong to claim that the first horn of Hale's dilemma is viciously circular.

Is this simply an oversight on Hale's part? Unfortunately, Hale does not fully spell out his reasoning, so it is not clear. However, some of what he goes on to say suggests a different reading of the argument. In the text that immediately follows the above passage, he writes (2013: 158):

> It is important to distinguish between propositions *about* the nature of X and propositions *true in virtue* of the nature of X. A proposition of the latter sort may not mention X's nature. For this reason, it can be explanatory to point out that it is true in virtue of the nature of X. [...] Saying 'It is true in virtue of the nature of conjunction that a conjunction is true only if both its conjuncts are true' explains why a conjunction is true only if both its conjuncts are. [...] However, *that* it is

true in virtue of the nature of conjunction that a conjunction is true only if both its conjuncts are admits of no further explanation. And if that is true (as I believe it is), it is necessarily so. But that necessity likewise admits of no further explanation.

Interestingly, Hale's main target here is not whether we can explain the necessities of natures, but whether we can explain plain facts about natures. This suggests that the problem with (11) is with the explanans taken by itself, namely:

> (12) It is true in virtue of the nature of Aristotle that [it is true in virtue of the nature of Aristotle that he is human].

In effect, (12) says that Aristotle has this nature because his nature is such as to have this nature. Plausibly, this does seem to be circular. For it is not informative to explain the nature of something in terms of its nature being such that it has that nature. But even if it turns out that (12) is not circular, in any case it seems false. Facts about what is true in virtue of the nature of Aristotle are not themselves true in virtue of the nature of Aristotle. Rather, if we were to give an essentialist explanation of such facts, then they would be explained by the *nature of Aristotle's nature*, assuming such a thing exists, rather than Aristotle's nature. In other words, Aristotle's nature determines facts about *Aristotle*, not his nature. Moreover, as Hale points out, it is not clear that we should expect *anything* to explain why it is true in virtue of the nature of Aristotle that he is human. Given the factivity of explanation, we can then infer the falsity of (11) from the falsity of (12), and *mutatis mutandis* for any other attempt to explain the necessity of X's nature in terms of X's nature.

Turning to the second horn of Hale's dilemma, it is not immediately clear why explaining X's nature in terms of another nature must be viciously regressive. For instance, we might think that the necessity of natures is explained by the nature of natures (Wallner 2020: 6ff). This would provide a non-transmissive explanation of the necessity of natures that would not engender a regress because the nature of natures, itself being a nature, would explain its own necessity. So the explanation of the necessity of (10) could be given as follows:

> (13) □[It is true in virtue of the nature of Aristotle that he is human] because (i) for any proposition p true in virtue of the nature of X, it is true in virtue of the nature of natures that p is necessary and (ii) it is true in virtue of the nature of Aristotle that he is human.

In many ways, this looks more promising than the first horn of the dilemma. And Hale does not provide any reason to think that (13) must engender a vicious regress. However, I think there is independent reason to doubt that (13) vindicates an essentialist account of the source of necessity.

It is first worth noting that (13) takes a somewhat different form to the essentialist explanations of necessity offered by Hale. In the explanations offered by Hale, the necessity of p is explained by the fact that p is true in virtue of some nature(s). By contrast, the necessity of the explanandum in (13) is explained by the fact that its necessity is logically entailed by the explanans; necessity is only conferred to the explanandum by mentioning necessity in the explanans. Putting aside worries about whether non-transmissive explanations of necessity are entitled to mention modally loaded entities within the explanans (see Wildman 2021), and putting aside worries about whether there is such a thing as the nature of natures (see Lowe 2008), the form of explanation in (13) has a very different structure to the form of explanation in (9). So while it might be true on this picture that

all necessities are grounded in natures, the way in which necessities about natures are so grounded is very different. And this faces the disunity of grounds problem I raised against Hale's official view in the previous section. So to sum up, while Hale's presentation of the dilemma can be resisted, there is nonetheless good reason to doubt the viability of an essentialist explanation of the necessity of natures.[14]

A quite different objection to my argument against Hale is that I have mischaracterised the criteria for giving a general explanation of necessity. Consider the following remarks from Hale (2013: 96):

> An explanation of necessity in general need neither be, nor provide for, an explanation of each and every particular necessity. What is required, rather, is to explain why there is any necessity at all—we may, and I shall, take this to amount to the requirement to explain why, assuming it to be so, there is at least one necessary truth, i.e. why $\exists p \Box p$. Naturally, this requirement cannot be met by any explanation which makes essential appeal to the necessity, as distinct from the truth simply, of its *explanans*.

The last sentence is important, because it explains why Hale believes that this characterisation of the explanandum still requires a non-transmissive explanation. However, I think we should reject this conception of what needs to be explained when we ask for an explanation of the source of necessity.

To begin with, it seems false that a transmissive explanation would fail to adequately explain why $\exists p \Box p$. After all, there is a sense in which any necessity would explain why it is true that $\exists p \Box p$, as we can explain the truth of an existential generalisation simply by citing a true instance of the generalisation. However, perhaps this is too quick. For instance, imagine if I were to explain why there is something rather than nothing by citing the fact that I exist (Cameron 2010: 143). This seems to presuppose the very thing I was trying to explain, namely that something exists, and so we face the threat of regress or circularity. However, the comparison is instructive. Suppose that, like Parfit (1998), we are astonished that anything exists at all. Suppose then that we are offered a non-circular and non-regressive explanation for why some particular thing or class of things exists. However, suppose also that the explanation entailed the brute inexplicable existence of other things. If we were astonished by the idea of things brutely existing, would this explanation quell our initial astonishment? Perhaps slightly, but I doubt that we would take this explanation to provide a satisfactory answer to the general question of why anything at all exists. Similarly, if we are philosophically motivated to inquire into the source of necessity, we should not be content with an account that explains the source of some necessities but leaves others without a source. Our motivation is to find the source of necessity in general, not some particular kind of necessity, and so all the questions and puzzlement remain about the necessities unexplained by the account.

To reemphasise, my argument here is not that primitivism as such is implausible or problematic (though I have argued that Hale's particular version of primitivism is). My argument is that positing primitive necessities amounts to denying that necessity has a source. Of course, we can ask why $\exists p \Box p$ in the way Hale suggests, and perhaps Hale's account can answer this. However, this simply

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[14] Thanks here to Jonathan Payton for extensive discussion on these points.

changes the question, as it fails to answer what motivates the original question about the source of necessity. As such, we should reject essentialism as an attempt to explain the source of necessity in terms of a necessity.

4. The Reflexivity Constraint

In the previous section, I argued that Hale's essentialist theory of the source of necessity fails as a solution to Blackburn's dilemma. However, understanding why Hale's theory fails points towards a solution. In this section, I propose an additional constraint on Hale's structural solution that must be met in order to satisfactorily answer Blackburn's challenge.

Recall again the basic structure of an explanation of the source of necessity:

(1) $\Box p$ because q.

We are assuming that q must be necessary if it is to adequately explain why $\Box p$. However, q's necessity cannot feature in the explanans, as this would lead either to circularity or a regress. In Hale's terminology, we need a non-transmissive explanation, or

(4) $\Box p$ because of the plain fact that q.

However, I argued that Hale's essentialist theory fails to explain the source of necessity in general because there is an implicit restriction on which necessities can be substituted for p in (4). Specifically, on Hale's theory, p only ranges over necessities grounded in natures. This excludes necessities about natures.

The solution to this problem is therefore to remove any restriction on which necessities can be substituted for p. If (4) can explain *all* necessities, then we will have a suitably general account of the source of necessity and an adequate solution to Blackburn's dilemma. Given that the explanans q is necessary, this means that our solution to the challenge must entail the following:

(14) $\Box q$ because of the plain fact that q.

In other words, the plain fact that q must be able to explain its own necessity. Call this *the reflexivity constraint*. To clarify, the claim is not that any necessary proposition must (or can) explain its own necessity. Rather, the claim is that the particular proposition q must explain its own necessity, where q is a proposition about source of necessity. In Hale's account, for instance, this would amount to the requirement that the necessity of facts about natures are explained in terms of (plain) facts about natures. On this view, the diagnosis for why Hale's substantive solution fails is that it fails to respect to reflexivity constraint, as the necessity of natures cannot be explained by plain facts about natures.

Adopting the reflexivity constraint shows that, at least in principle, it is possible to answer Blackburn's dilemma without running into the same problem as Hale. As before, however, it is one thing to show that the dilemma can be solved in principle, and quite another to provide a substantive account that does in fact solve it. In the next section, I examine whether Peacocke's (1999) 'principle-based' theory of necessity might provide a substantive solution to the dilemma along these lines. However, our new structural solution is significant in itself. For instance, Cameron (2010: 146, original emphasis) claims that "[w]hen our goal is to give an explanation of the necessity of p, for all necessary propositions p, it seems we have *no choice* but to make appeal to some contingent proposition at some stage as the explanation for the necessity of some proposition if we want to

avoid circularity or regress". However, the reflexivity constraint shows that we do have a choice. If the source of necessity can explain its own necessity, then we have provided an end to the regress that is non-circular and placed firmly on the necessity horn of Blackburn's dilemma.

5. Peacocke's Principle-Based Theory of Necessity

According to Peacocke (1999), necessity is explained in terms of certain 'Principles of Possibility' that specify the truth conditions for modal claims. In this section, I examine whether this theory can solve Blackburn's dilemma. First, I outline Peacocke's view (section 5.1). Second, I explain how it might be understood to provide a non-transmissive explanation of necessity that respects the reflexivity constraint (section 5.2) Finally, I raise some doubts about the view, arguing that the considerations offered in its favour underdetermine whether it successfully solves the dilemma (section 5.3). As with Hale, my primary concern here will be whether the account can provide a satisfactory answer to Blackburn's dilemma rather than whether and to what extent it is independently plausible.

5.1. The Principles of Possibility

Peacocke aims to explain the nature of modality in terms of a set of principles that specify the truth conditions for modal claims. For Peacocke, not only is the metaphysics of modality explained in terms of these principles; our knowledge of modality is explained by our implicit grasp of the very same principles. The resulting view is somewhat complex and much of this complexity will not be relevant for our purposes. Accordingly, I will try to keep the presentation of the view as simple as possible while noting that it is in many ways an oversimplification. But this should not affect the arguments that follow.

The notion of necessity is explained in terms of the non-modal notion of an *admissible assignment*. Specifically, it is explained in terms of 'The Characterization of Necessity' (Peacocke 1999: 150):

The Characterization of Necessity. A thought or proposition is necessary iff it is true according to all admissible assignments.

First, then, we need to understand the notion of an *assignment*, followed by the notion of *admissible*.

Assignments apply to concepts, here understood as Fregean senses that combine to compose thoughts, which are the contents of propositional attitudes. More specifically, an assignment *s* maps every atomic concept to a *semantic value* of the "appropriate category" (1999: 126). Thus, objects will be assigned to singular concepts, functions from objects to truth values to predicate concepts, and so on. The semantic value of a thought is then determined functionally by the semantic values of the atomic concepts that make up that thought. Thus, for instance, the thought expressed by the statement that Berlin is a city is composed of the singular concept BERLIN, whose semantic value is the city Berlin, and the one-place predicative concept CITY, whose semantic value is a function from objects to truth values. The semantic value of the thought that Berlin is a city is then the semantic value of CITY when BERLIN is its argument, namely the truth value True. For any assignment *s*, we can then define its *corresponding specification* as the set of thoughts that are true according to *s* (1999: 127).

Drawing on Putnam (1969), Peacocke (1999: 128) argues that we should not identify properties and relations with the semantic values of predicative and relational concepts. For this reason, an assignment will also assign a *property value* to such concepts. Like before, an assignment will assign property values of the appropriate category. Thus, monadic properties will be assigned to one-place predicates, binary properties to two-place predicates, and so on. By contrast, the semantic value of a predicative concept C according to an assignment s is the extension of the property value of C in s. From this, we can extend the notion of a specification to include not only the set of thoughts that are true according to an assignment, but also the set of singular propositions that are true according to an assignment, where these are composed of semantic values of singular concepts and the property values of predicative concepts. Hence, the Characterization of Necessity specifies the conditions under which both Fregean thoughts and singular propositions are necessary.

With the notion of an assignment explained, we can now explain the notion of *admissibility*. An assignment is admissible in this sense when it respects certain principles. These are the 'Principles of Possibility'. Peacocke supplies two such basic kinds of principle. The first and most important is the Modal Extension Principle (1999: 136):

> **Modal Extension Principle**. An assignment s is admissible only if: for any concept C, the semantic value of C according to s is the result of applying the same rule as is applied in the determination of the actual semantic value of C.

The idea is that every concept is associated with a rule whose application determines the actual semantic value for that concept. There are two kinds of cases. The first case concerns concepts that are (*de jure*) rigid. In this case, the rule determines some particular object that the concept refers to. Any admissible assignment for a rigid concept C must accordingly have C's actual semantic value (1999: 136). Thus, any admissible assignment for the concept BERLIN must be the city Berlin, as the actual rule for determining the semantic value of BERLIN always fixes Berlin as its semantic value. The second case concerns concepts that are not rigid. In this case, the rule that determines the actual semantic value of a concept is applied to the semantic values of other concepts. A simple example Peacocke (1999: 132) uses to illustrate this case is the concept BACHELOR. We can suppose that the rule that determines the actual semantic value of BACHELOR is that it is the intersection of the extension of the concepts UNMARRIED and MAN. Any assignment that does not apply this rule in determining the semantic value of BACHELOR is thereby inadmissible.

The Modal Extension Principle provides a necessary condition for admissibility, but it is not sufficient. The second kind of principle that Peacocke argues is also necessary for admissibility are "constitutive principles" (1999: 144). By talk about what is constitutive, Peacocke means talk about what it is for a thing to be the thing that it is, or its nature. He discusses a number of putative constitutive principles without claiming to account for them in their entirety. For our purposes, we can capture these various principles with the following general principle:

> **Constitutive Principle**. An assignment s is admissible only if it respects what is constitutive of the objects, properties, and relations s mentions.

Lest the Modal Extension Principle and the Constitutive Principle appear problematically disunified, Peacocke (1999: 148) notes that it is highly plausible that the rules that determine the actual semantic values of our concepts are constitutive of those concepts. So we might think of Peacocke's theory as a kind of essentialist theory of necessity. We will see, however, that the Modal Extension Principle plays a crucial role in avoiding the problems faced by an essentialist theory like Hale's.

To complete the account, Peacocke (1999: 149) then provides a final principle that provides a sufficient condition on an assignment's being admissible:

> **Principle of Constrained Recombination**. An assignment is admissible if it respects the set of conditions on admissibility given hitherto.

We began by stating that a thought or proposition is necessary just in case it is true in all admissible assignments. Now that we have provided necessary and sufficient conditions for what counts as an admissible assignment, we have completed our account of necessity. Despite Peacocke's sophisticated apparatus, we might think of his account as supplementing an essentialist account like Hale's. Given that something like the Constitutive Principle is common ground, we might ask whether adopting the Modal Extension Principle in addition the Constitutive Principle can help to answer Blackburn's challenge.

5.2. Blackburn's Dilemma Revisited

Can Peacocke's principle-based account of necessity solve Blackburn's dilemma? While Peacocke doesn't directly address Blackburn's challenge, I think there is a natural way of reading his account such that it embraces the necessity horn of the dilemma. Recall that we are after an explanation of the source of necessity that takes the following form:

(1) $\Box p$ because q.

On Peacocke's view, this will amount to:

(15) $\Box p$ because p is true according to all admissible assignments.

If, as Peacocke maintains, *true according to all admissible assignments* does not contain any modal content, then the necessity of p is explained in terms of the plain non-modal fact that q.

But of q, we can still ask, is q necessary? In other words, if p is true according to all admissible assignments, is this necessarily true or not? If Peacocke's account cannot explain this necessity, then like Hale's it will fail to provide an account of the source of necessity in general. Assuming the necessity horn, we thus need to explain necessities of the following form:

(16) $\Box[p$ is true according to all admissible assignments].

And given the reflexivity constraint discussed in section 4, our explanation of (16) will need to take the following form:

(17) $\Box[p$ is true according to all admissible assignments] because $[p$ is true according to all admissible assignments] is true according to all admissible assignments

In support of (17), it is important to see how the Modal Extension Principle applies to all concepts, including ADMISSIBLE ASSIGNMENT. Given the rules determining the actual extension of 'true according to all admissible assignments', this will determine the same extension according to all other assignments. So for any proposition *p* that is true according to all admissible assignments, [*p* is true according to all admissible assignments] will be true according to all admissible assignments, and so will also be necessary, given the Characterization of Necessity.

Peacocke (1999: 152) makes a similar point about how the Modal Extension Principle can be applied to the Characterization itself:

> The Characterization of Necessity above gives the rule which determines the actual extension of 'necessarily'—that is, the propositions or Thoughts to which it can be truly prefixed. The rule for determining the actual extension of 'necessarily' can then be taken as one of the objects of application of the Modal Extension Principle. When it is so taken, we see that it follows from the Modal Extension Principle that in any admissible assignment *s*, the semantic value of *necessarily* will include precisely those propositions or Thoughts which are true under all assignments which are admissible according to s. Hence, according to any admissible assignment, the above Characterization will be true. But this is precisely what it is for it to be necessary, under the principle-based conception.

The theory also explains the necessity of constitutive truths. For instance, suppose it is constitutive of Socrates that he is human. The necessity of this truth is then explained by the fact that the proposition [it is constitutive of Socrates that he is human] is true according to all admissible assignments. And we know this is correct because it respects the Principles of Possibility.[15] Thus, by adopting the Modal Extension Principle, we have a strategy for reflexively explaining the necessity of the source of necessity without circularity or regress.

5.3. A Worry about Explanatory Dependence

I want to finish this section by raising a doubt about whether Peacocke's theory satisfactorily answers Blackburn's dilemma. Recall again:

The Characterization of Necessity. A thought or proposition is necessary iff it is true according to all admissible assignments.

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[15] One might worry that this explanation is circular because the explanation for why the proposition [Socrates is essentially human] is true according to all admissible assignments is that admissible assignments must respect what is constitutive of the objects mentioned in them, such as Socrates' being essentially human. First, however, note that our original *explanandum* is *not* the proposition [Socrates is essentially human], but its necessity. Because no necessity figures in the explanandum, there is no circularity accounting for it. Second, the explanation of why [Socrates is essentially human] is true according to all admissible assignments follows straightforwardly from the *definition* of 'admissible assignment' (together with the fact about Socrates' essence). So the reappearance of facts about Socrates' essence in the explanans is not problematically circular. Third, if we were to attempt to explain the proposition that [Socrates is essentially human] in terms of it being true in all admissible assignments, then this *would* be problematically circular. However, it is no part of the current account to explain essential truths, only their necessity. A different worry is that the Principles of Possibility themselves must be explained modally. For an answer to this objection, see Peacocke (1998: 146ff).

Supposing that this is extensionally correct, the Characterisation itself says nothing about the explanatory dependence of the two sides of the biconditional. So while a proposition's being necessary might be dependent on its being true according to all admissible assignments, it might instead be that the converse holds (or that they are interdependent). That is, it might instead be that a proposition's being true according to all admissible assignments is dependent on its being necessary.

In other words, Peacocke's account is also compatible with the following:

(18) p is true according to all admissible assignments because $\Box p$.

However, if (18) is true, then Peacocke's theory cannot provide an account of the source of necessity. Because the arguments Peacocke gives in favour of his theory only go as far as to support the biconditional, they therefore underdetermine whether necessity has its source in admissibility or vice versa.

Responding to a related objection, Peacocke (2002) points out that the Characterization should be understood as an abductive hypothesis that provides the best explanation of the truth conditions of modal contents.[16] The explanation is defeasible, but we have good reason to accept it in the absence of a better explanation. The problem with this response in the context of this discussion, however, is that even if we suppose that "the Characterization states the rule determining the correct actual application of necessarily to contents" (2002: 671), this is perfectly consistent with both (15) and (18). The question, then, is not about our grounds for accepting the Characterization, but about the explanatory dependence between necessity and admissibility, on which the Characterization is silent. Thus, in order to determine whether Peacocke's account can explain the source of necessity, we must determine whether the Characterization is best explained by (15) or (18). In the absence of an argument that it is best explained by (15), we should not accept Peacocke's account as a solution to Blackburn's dilemma. However, I have not argued that such an argument is not possible or bound to fail. So it remains to be seen whether the necessity horn may be defended in this way.[17]

6. Conclusion

The possibility of non-transmissive explanations shows that, at least in principle, the source of necessity can be a necessity. Explanations of necessity grounded in natures might look like a promising instance of non-tranmissive explanations, but they fail to account for the necessity of natures and thus necessity in general. This problem led us to consider an additional, general constraint on non-transmissive explanations of necessity, namely the reflexivity constraint. This stated that the source of necessity must be able to non-transmissively explain its own necessity.

[16] The response is to Wright's (2002: 658f) objection that if the Characterization needs to be *known* to be necessary, and if the epistemology is also given in terms of the Characterization, then it is impossible to know that the Characterization is necessary without begging the question. As I am not here concerned with the epistemology of necessity, I will leave this unaddressed.

[17] One consideration against (15), however, might be that different kinds of necessity-facts have a disunified grounds if we do not have a satisfactory story to tell about what unites the different Principles of Possibility. Another consideration might be that our notion of necessity is more natural and thus plausibly more fundamental than our notion of admissibility.

I considered whether Peacocke's Modal Extension Principle might provide an example of the reflexivity constraint in action. Although promising in certain respects, I argued that it leaves unanswered whether necessity has its source in the admissibility of assignments rather than vice versa. Thus, while we have seen that there are available strategies for answering Blackburn's dilemma on the necessity horn, the approaches examined here are yet to fully meet this challenge.[18]

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