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On explaining necessity by the essence of essence

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ABSTRACT

There has been much debate recently on the question whether essence can explain modality. Here, I examine two routes to an essentialist account of modality. The first is Hale's argument for the necessity of essence, which I will argue is – notwithstanding recent attempted defences of it – invalid by its very structure. The second is the proposal that it is essential to essential truth that it is necessary. After offering three possible versions of the view, I will argue that each fails to provide a metaphysical explanation of necessity in terms of essence.

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1. Introduction

Famously, Fine (1994) rejected the reduction of essence to *de re* necessity and proposed that necessity is a special case of essence (9). This proposal has been extensively taken to be of a reductivist project. And if this reductivist project, or, in general, any project that accounts for necessity in terms of essence, is to succeed, it seems to be required that what is essential to a thing is necessary to it. And it also seems that we must be able to obtain this result without assuming modal principles, so as to avoid circularity. While it could be replied that the necessity of essence is analytically true or otherwise conceptually obvious, there are arguments against this idea (Romero 2019, 127–128).

In this paper, I will examine two routes that take off from this point in the dialectics. According to the first route, essence can be shown to entail necessity without the assumption of modal principles. This is the route of Hale's argument for the necessity of essence (Hale 2013). Hale's argument is important because it is one of the few explicit arguments for the thesis. Given its importance, we find some controversy around it in the recent literature. Its

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critics (Casullo 2020, Leech 2021, Romero 2019) argue that it begs the question. But in their recent defence of it, Wallner and Vaidya (2020) argue that it can be made to work. If their response succeeds, Hale's argument is rescued, and the essentialist account of necessity goes a long way forward. My first main goal here is to examine Wallner and Vaidya's response to the criticism of Hale's argument. I will argue that their defence is unsuccessful, and that Hale's argument remains invalid.

A second route rejects one of the fundamental presuppositions: that essence is not a modal posit. According to recent proposals (including Fine 2020, Wallner and Vaidya 2020, Wilsch 2017), it is part of the essence of essence that essentialist facts are necessary, in two possible specific ways to be explained below. Further, according to this line of thought, the essential necessity of essence allows it to be the metaphysical *explanans* of necessity, where the explanation is not in terms of grounding nor reduction. My second main goal in this paper is to show that this second proposal fails to provide a metaphysical explanation of necessity in terms of essence.

2. Hale's argument and its critics

Let us begin with Hale's argument (2013, 133). It, if successful, would show how essential truths imply metaphysical necessity. Let us cite the relevant passage (I added brackets to denote the main theses):

[(1) The supposition that a might have had a different nature] is the supposition that it might not have been the case that $\Phi\alpha$, and might have been that $\Phi'\alpha$ instead. [...] [(2) This is equivalent to the supposition that for some β , it might have been the case that $\beta = \alpha \wedge \neg\Phi\beta \wedge \Phi'\beta$.] But how could this be possibly true? Given that [(3) $\Phi\alpha$ tells us *what it is for a to be the thing that it is*], and that $\neg\Phi\beta$, [(4) β lacks what it takes to be that thing], [(5) it must be that $\beta \neq \alpha$.] In short, the supposition that a thing's nature might have been different breaks down because it is indistinguishable from the supposition that something *else* lacks that nature.

In a 'logic textbook'-form, the argument is this:

- | | |
|---|-----------------|
| (1) a might have had a different nature. | [Supposition] |
| (2) For some β , it is possible that: $(\beta = \alpha) \wedge (\neg\Phi\beta) \wedge (\Phi'\beta)$. | [From (1)] |
| (3) Φ tells us what it is for a to be the thing that it is. | [Definition] |
| (4) β lacks what it takes to be a . | [From (2), (3)] |
| (5) $\beta \neq \alpha$. | [From (4)] |

In other words: the supposition (1) that (say) Bob might have had a different nature, means (2) that there is something (Nob, say) which, possibly, is identical to Bob, and which would not have had Bob's nature, but instead another one. However, because (3) the nature of something is what it is to be

that thing, (4) Nob would have lacked what it takes to be Bob, and, *therefore*, (5) Nob would not be Bob – contrary to the supposition. Then, it is false that there is something that could be Bob while lacking his nature and having a different nature. Hale’s argument is a *reductio* of that.

Let me be clear about how I am interpreting Hale here.¹ I’m interpreting him as arguing in favour of this thesis (throughout, ‘E’ is the essentialist operator):

Essentiality Implies Necessity $E_x(p) \supset \Box(p)$, for any x and p ;

while it may be claimed that Hale was, rather, arguing for this claim:

Essences Are Necessary $E_x(p) \supset \Box E_x(p)$, for any x and p .

But my interpretation is more charitable in this context, as *Essences Are Necessary* is stronger than *Essentiality Implies Necessity*. First, *Essences Are Necessary* entails *Essentiality Implies Necessity*: see the steps (2)–(6) of the proof in 13, below. Second, the converse fails: given *Essentiality Implies Necessity* and assuming $E_x(p)$, it does not follow that $\Box E_x(p)$.

Now, let us remember that this discussion occurs in the context of the Finean paradigm, which rejects the characterisation of essence as a case of *de re* necessity, and instead models essence as real definition. The essence of a thing, then, is what defines what it is to be the thing. In this context, Romero (2019, 126) objected to Hale’s argument that ‘Essences are what it is for something to be what it *is*; it doesn’t follow that they are what it is for something to be what it *must* be’. The thought is that, from the fact that β lacks at a possibility w what it actually takes to be a , it does not follow that β lacks at w what it takes to be a at w . ‘A further premise is needed to infer from this that β lacks (at $[w]$) what it takes to be a at $[w]$ ’ (*ibid.*) So, Hale’s argument is a *non-sequitur* – unless, that is, supplemented with the principle that x being essentially F implies x being necessarily F . Unfortunately, this is precisely what the argument purported to show, and therefore cannot be legitimately used as a premise.

3. Wallner and Vaidya’s strategy, and my criticism

Wallner and Vaidya (2020, 422–425) think, however, that Hale’s argument can be made to work. They start by proposing that (3) – in the context created by (2) – entails not (4), but:

¹Thanks to an anonymous referee for suggesting the following point of clarification.

(4*) β lacks what it *actually* takes to be α .

From (4*), they infer:

(5*) It is not actual that $\beta = \alpha$,

which, by an application of the necessity of distinctness:

ND $\Box \forall x \forall y \Box [x \neq y \supset \Box (x \neq y)]$

takes us to the necessity of $\beta \neq \alpha$ – from which, of course, it follows that it is actually true that $\beta \neq \alpha$. This is what Hale aimed to show. The proposal seems reasonable, and given that **ND** is widely accepted by both essentialists and non-essentialists alike, it seems that Vaidya and Wallner have shown that we can reach the necessity of essence through a sound and non-circular argument.

But I do not think so. Remember that in Hale's argument, β 's lacking α 's nature obtains *at another possibility* ('it might have been the case', said Hale). Let us use, as above we did, ' w ' for that possibility and '@' for the actualised possibility. Remember, also, that $\Phi\alpha$ tells us what it *is* – not what it *must* be – for a to be the thing that it *is* – not what it *must* be. This is because, if essence is to account for necessity, essence cannot *presuppose* necessity, on pain of circularity: this is Hale's (2013, 96) notion of *non-transmissive explanation* (more on this below). Then, if $\Phi\alpha$ tells us what it *is* for a to be the thing that it *is*, we see that what (3) *does* entail, in the context of (2), is:

(4**) β lacks *at w* what it takes to be a *at @*.

This detail is important, because we can now see that (5*) does not follow. That is: (4**) can be true without (5*) being true. If essences are not necessary (or not in every possible case), then Nob lacking one of Bob's properties at another possibility does not mean that Nob and Bob are actually, or even possibly, different – even if that property is part of Bob's essence.² If Bob is actually a philosopher, but Nob is a lawyer at w , it does not follow that Bob and Nob are actually different. It may be that Bob is possibly a lawyer! It may be, that is, that Nob is a possibility of Bob.

²For simplicity, I am referring to essences as if they were properties. But the same argument can be made by referring to essences as what are described by real definitions.

Of course, if essences *are* necessary, then if Nob lacks at w the actual essence of Bob, it must follow that they are distinct. But the necessity of essence is what Hale's argument purports to show: the argument cannot assume it.

Put differently, to rule out the *actual* truth of $\beta = \alpha$, we need:

(6) If (4**), then: either β is not a at w or a is not β at $@$.

But why could not β lack a 's actual nature at some worlds, like w , but not at others? Perhaps β has a 's actual nature at $@$! Nothing in Hale's argument eliminates this possibility. Of course, this means that natures (or at least, some of them) are contingent. But this is precisely what the argument needs to rule out – doing so is equivalent to obtaining its intended conclusion.

Now, Vaidya and Wallner think that 'essential features are not just any old features but the ones that figure in a real definition of a and, hence, fix the actual identity of a ' (423). However, even if a 's actual definition fixes a 's actual identity, more is needed to infer that a 's actual definition fixes a 's identity at w , or that β 's definition at w fixes β 's identity at $@$. Wallner and Vaidya argue that 'fixing' means *determining at every possibility* (425–429), and so, if a thing's essence fixes its identity, then the thing has that essence at every possibility. However, this premise, intuitive as it may be, is simply a rephrasing of the necessity of essence, and so cannot support Hale's argument.

I conclude that Hale's argument remains a *non-sequitur*. But could the argument be repaired so as to non-circularly show the necessity of essence? No. Because, at its core, the argument is structured around three assumptions: that some thing (α , say) is Φ at a world w , that some thing (β , say) is not Φ at another world v , and that Φ is the essence of α . From this, the aim is to infer that $\alpha \neq \beta$. However, these three assumptions will never suffice, because the fact that some things have different properties at different worlds does not entail that they are different things (nor, of course, does it entail that they are identical): one may be a possibility for the other. This logical gap is unbridgeable without the assumption of the necessity of essence. Hale's argument is a *non-sequitur* by its very structure.

4. Explaining necessity by the essence of essence

Perhaps one of the assumptions of the whole debate has been misleading: perhaps necessity cannot be reduced to essence. But if not, why is

it that so many philosophers have found it plausible that necessity facts are explained by essence facts? According to Wilsch (2017, 432), this is even a ‘data-point’, as opposed to a metaphysical hypothesis. So, Wilsch offers his *sophisticated modal primitivism*, according to which, roughly, essence facts explain necessity facts because essence facts are essentially necessary. In Vaidya and Wallner’s view, the assumption that essentialism is a *reductive* thesis is misleading (Wallner and Vaidya 2020, § 3). Against this assumption, they offer a *non-reductive* version of Finean essentialism. As we will see below, these two views share some similarities. For ease of exposition, I will group them under one label: ‘Neo-essentialism’. Let us now investigate whether neo-essentialism can provide a metaphysical explanation of necessity, and in what sense.

Fine (1994) thought of necessity as being a *special case* of essence; this has been interpreted (and reasonably so, in my view), as a reduction. But, though many philosophers do think of the essence-necessity connection as one of reduction, not all of them do so; Rosen (2010) thought of the essentialist project as one of grounding, for example. So, I suggested to think of the controversy as being about what we can call the *fundamentality explanation* of necessity by essence, which I offered as a generalisation of grounding- and reductive explanations, characterised by constraints such as the objectivity of the explanation, its acyclicity, and the requirement that the *explanandum* not be more fundamental than its *explanans* (Romero 2019, 124):

Stepping up from reduction, grounding, etc., to explanation, allows the arguments below be as general as to cover different specific proposals for the first-order explanatory relation between modality and essences.

However, as we mentioned, the neo-essentialists think that the relation between essence and necessity is not best conceived of in terms of reduction. Briefly, Wilsch (2017, 429–432) notes that Fine’s argument (Fine 2002) against defining notions of necessity by restricting broader notions of necessity also applies to Fine’s own essentialist account. Basically, ‘we cannot explain why some restrictors would yield genuine notions of necessity while others do not, unless one presupposes the necessity of the restricting propositions’. He also thinks that there is a more fundamental problem for the attempts to define necessity: ‘The case of necessity is akin to the case of normative notions’, he claims, in that ‘It raises both conceptual engineering issues’ and ‘a version of Moore’s open question argument’.

In turn, Wallner and Vaidya (2020, 433) think that necessity does not reduce to essence because a reductive explanation of modality requires a non-modal *explanans*, and because they think of essence as defined by necessity (see below).

However, one may question the neo-essentialists here: Why can't there be a reduction between modal posits? A *prima facie* open option would seem to be this: Necessity and essence are both modal posits, essence is more fine-grained than necessity, and necessity reduces to essence.³

Now, I *do* think that there can be a reduction between modal posits.⁴ But note that if we claim – with the neo-essentialists – that essence is necessary but more fine-grained than necessity *because* it is partly defined by necessity and includes some other aspect in its definition, then one may question whether something (necessity, in this case) can both *define* and *reduce to* something else. The point is that if *x* requires *y* for its definition, it seems that *y* cannot be *reduced* to *x*, thus ruling out the reduction of necessity to essence. This view is based on two theses. First is the principle that I call '*Definition to Fundamentality*'; in other places [forthcoming paper; manuscript] I have used it to argue against other purported reductions of modality. Others have used this principle as well, although with different names – for example, Jaag (2014) argues from *Definition to Fundamentality* that, because dispositional properties are defined by its modal relations to other properties, dispositional properties cannot ground natural modality. The principle looks exceedingly plausible: if *x* is part of the definition of *y*, then *y* is not more fundamental than *x*: nothing is more fundamental than its *definiens* – presumably, because it *requires* its *definiens*. The second principle is also very plausible: if *x* reduces to *y* then *y* is more fundamental than *x*. With both principles on board, we have our consequence that necessity cannot both define and be reduced to essence.

Note that Vaidya and Wallner's argument assumes that a reductive explanation of modality requires a non-modal *explanans*. The assumption is correct if we aim to reduce modality *per se* – that is, if we, as the Humeans, believe that modality is not fundamental. However, for those of us non-Humeans, a reduction of one modal posit to another may still tell us something important about the structure of reality. Their argument does not eliminate that possibility. However, even in this less restricted context, the argument from *Definition to Fundamentality* plus the thesis

³Thanks to an anonymous referee for suggesting that I consider this option.

⁴My own view – which I don't develop in this paper – is that there *is* such a reduction, but that the fundamental modal posit is neither necessity nor essence.

that reduction entails fundamentality in the mentioned way, shows that, as I have explained, if essence is defined in terms of necessity, necessity cannot be reduced to it.

Further, as we saw, Wilsch thinks that Fine's argument against restrictive definitions also applies to Fine's own essentialist view. While we may read Wilsch's argument as concluding that a modal notion has to be presupposed, making the purported reduction circular, one may also use his argument to wonder whether the modal notion in question is of the *right* kind. Note that Wilsch says that 'it remains mysterious why Fine's notion of metaphysical necessity [i.e. the one defined as the logical closure of the set of actual essential truths] is a *genuine* notion of necessity' (430, my emphasis), and so we may question why Fine's notion, although admittedly a modal one, is a modal one of the *right* kind. After all, some other modal notions are clearly not plausible candidates to reduce metaphysical necessity – for example, metaphysical necessity is not plausibly reducible to the necessity of all arithmetical truths: metaphysics very likely exceeds arithmetic.

If the above arguments are correct, metaphysical necessity does not reduce to essence, and so, fundamentality explanation will not be of much help in this case. So, let us set it aside.

The neo-essentialists prefer to phrase their metaphysical explanations in terms of *essentialist explanation*, a notion introduced by Glazier (2017). Let us see what this means.

According to Glazier, it is sometimes legitimate to explain a certain fact in terms of its being essential to a certain thing: If we ask why does the set {Socrates} have Socrates as a member, it is legitimate to answer that it does so *because of* {Socrates}'s *very nature*. Glazier thinks that essentialist explanations are *ultimate*: they give the sensation of being 'ends of the explanatory road', and he analyses the ultimacy of an essentialist explanation as there being no essentialist explanation of its *explanans*.

Importantly, Glazier also argues that essentialist explanation is different from grounding explanation: to explain a fact by its being essential to something is *not* to say that the fact is *grounded* in the essence, or in its being essential (see also Zylstra 2019). Glazier claims that there may be facts which, though not grounded in any others, can be explained in terms of their pertaining to the essence of a certain thing. Further, he notes that the identification of essentialist- with grounding-explanation would entail that some essentialist facts (assumed to be *necessary*) ground some *contingent* facts, even though grounds are widely assumed to *necessitate* what they ground.

So, we have:

Essentialist Explanation p is an essentialist explanation of q iff p is of the form: q because x is essentially such that q (for some x).⁵

Now, it is important to note that there is precedence for this idea of essentially modal essences that do not reduce to mere *de re* necessity. Apart from Vaidya, Wallner, and Wilsch, we have other philosophers, like Hale (2013, chs. 3, 5–6). He rejected any reduction of necessity and took essences to be fundamentally modal, arguing that they form the basic set of necessities, which *organises* or *structures* the whole set of necessities (see Casullo 2020, for criticism of Hale’s project). Fine (2020, 463) also seems to have entertained this idea, where the ‘only one, independently given, notion of essence’ is a *necessitist* one, which satisfies:

Essentiality Implies Necessity $E_x(p) \supset \Box p$

Fine (464) says that necessitist essence, under this proposal, is ‘the primary understanding of definition’. The idea seems to be that essences are *by definition* necessary. Unfortunately, Fine’s brief commentary is insufficient for a systematic development.

Let us now investigate how the neo-essentialists projects are presented, in all of their detail. As I will argue, there are substantive worries about their attempted metaphysical explanations of necessity. I will show this for their attempted essentialist explanation (§§4.1–4.4), and then (§4.5) I will show that the worries can be extended to a possible explanation given with another kind of metaphysical explanation, different from fundamentality- and essentialist explanation: *constraint explanation*, under an essentialist model recently proposed by Bertrand (2019).⁶

4.1. The proposal of Wallner and Vaidya

Wallner and Vaidya think that the relation between essence and necessity is not better thought of in terms of reduction because essences are *modal in themselves*: they think that ‘it is *essential* to Fine’s notion of essence that

⁵It might be interesting to note that, if there are essentialist statements that are only plurally true – like Fine’s ‘Socrates is different from the Eiffel tower’ – then perhaps the x variable should be plural. However, this will not be relevant in what follows. Thanks to an anonymous referee for discussion here.

⁶Recently, Kitcherian accounts of metaphysical explanation have also been proposed (e.g. Kovacs 2020); roughly, they characterise explanation as unification of the beliefs implicated in metaphysical theory. As it has been noted (Brenner et al. 2021, § 6.3), ‘even those who think of metaphysical explanation as partly representational [...] will most likely not find [unificationism] very appealing’. Because the debate I am interested in here is whether there is a *wordly* relation between essence and necessity, I will not consider unificationism here.

essentialist truths hold necessarily' (2020, 432–433). But this, they claim, still allows them to offer a *non-transmissive* essentialist explanation of necessity. The thought is as follows.

Blackburn (1993) argued against an explanation of the source of necessity as follows. Given that the *explanans* is either necessary or contingent, the explanation faces a dilemma. If the *explanans* is necessary, the source of the necessity would be another necessity, the source of which would remain to be explained. If the *explanans*, however, is contingent, it cannot explain a necessity.

Given that essential truths are here thought of as necessary, they would seem to run afoul of Blackburn's first dilemma. Not so, argued Hale (2002), and Wallner and Vaidya follow him. The idea is to distinguish between *transmissive* and *non-transmissive* explanations of necessity. In the first kind of explanation, the explanation of the necessity of a proposition is made in terms of another necessary proposition, appealing to the latter's necessity. But not so in the second kind: in a non-transmissive explanation of necessity, the explanation of the necessity of a proposition is made in terms of another necessary proposition, *without* appealing to the latter's necessity. So, in a non-transmissive explanation of (say) $\Box(p)$, the explanation would be a proposition Φ , which is indeed necessary, but its necessity (i.e. $\Box(\Phi)$) would not be part of the explanation.

I do not think it is obvious that necessity can play no role in the explanation – one may doubt that there truly are non-transmissive explanations (cf. Romero 2019, §IV.1). But let us be open to the epistemic possibility of their existence. How does Wallner and Vaidya's Hlean project use essences for their non-transmissive explanation?

According to them, 'the necessity of essence lies in the very notion of essences'.⁷ This is assumed to be 'a reason *why* essentialist truths *can* explain modal truths'. But, they claim, 'that the modal status of essences explains *why* essences *can* explain necessities, does not entail that the modal status of essence explains the necessity' (437–438). They compress their view into four theses (438):

⁷As an anonymous reviewer noted, Wallner and Vaidya do speak sometimes of 'the *notion* of essence', which could raise the question whether they mean the *concept* or *mental representation* of essence, as opposed to *essence itself* or at least to the *operation semantically corresponding* to the piece of syntax that is the 'E'-operator. I'd say that's just an unfortunate phrasing of their view. At various places they make it clear that they do mean *essence*, e.g.: '[...] the fact that essences (or essentialist truths) are essentially necessary just means that essences – by their very essence – are modal posits' (433). We could also question the relation between essence and essential truth. A natural assumption to take on board here is that the essence of anything (be an object or an operation) is given by the plurality of the corresponding essential truths.

E1 The necessity of essence lies in the very notion of essence:⁸

$$E_E[E_x(p) \supset \Box(E_x(p))].$$

E2 Essentialist truths can explain modal truths.

E3 It is the case that *E2* because *E1*.

E4 But *E3* does not entail that it is the necessity of essence that does the actual explaining.

Note that *E1* says that *Essences Are Necessary* is essential to essence.⁹ And *E4* is postulated so as to have the explanation in *E2* be non-transmissive in Hale's sense. But what is the explanation mentioned in *E2*? And how does it work?

Perhaps through their *axiomatic solution*. The thought is that, because they 'take essences to be ideologically primitive and metaphysically fundamental', they can specify their behaviour axiomatically. This would be the relevant axiom: 'It is built into the very notion of essence that essences are necessary *and* that essences explain necessity' (440). Note that this claim is stronger than *E2*, which only claims that essences *can* explain necessity, but stops short of claiming that (1) this 'ability' is *essential* to them, and that (2) it is *exercised*. So, the real postulate in Vaidya and Wallner's account should be (using ' $A \implies B$ ' for '*A* explains *B*')

E2* Essences are essentially such that they explain necessity:

$$E_E[E_x(p) \implies \Box(p)].$$

And *E3* and *E4* should be modified accordingly:

E3* It is the case that *E2** because *E1*:

$$E_E[E_x(p) \supset \Box(E_x(p))] \implies E_E[E_x(p) \implies \Box(p)]$$

E4* But *E3** does not entail that it is the necessity of essence that does the actual explaining.

⁸They write: 'It lies in the notion of ' E_x ' that $E_x(p) \supset \Box(E_x(p))$.'

⁹At this point, it's natural to wonder about the essentialist operator taking itself as its subscript (thanks to an anonymous referee for this). Given that, as we've seen, Wallner and Vaidya explicitly talk about the essence of essence, and that Wilsch (whose theory we also examine below) also assumes that operators have essences – for example, Wilsch 2017, 441, where he considers a purported explanation of the necessity of the laws in terms of the fact that $E_L(Lp \supset \Box p)$, where ' L ' is the 'it is a law that'-operator – it is fair to assume, in the context of this debate, that the essence operator can take operators, including itself, in its scope. It also seems that we can give a pretty transparent intuitive understanding of this formalism. We may assume that an operator is to be defined by means of certain axioms that detail its nature by detailing its behaviour and interaction with other operators and perhaps logical particles. And for objectual terms, the essence operator means, as always, that the preajcent proposition defines the referent of the term. Then, for both objects and operations, the essence operator applies to propositions that define them. So, for an operator O and each such axiom A , ' $E_O(A)$ ' would mean precisely that A is one of the defining axioms of the operator.

Then, they present two questions that may be raised by the critics:

CQ1 Why or in virtue of what do essences have this alleged necessity-conferring capacity?

CQ2 What is this necessity-conferring capacity? or: How do essences explain necessity?

And they answer *CQ1* with *E1*, and they answer *CQ2* with *E2**. And they note (footnote 21 and 442) that their answers to *CQ1* and *CQ2* should not be thought of as grounding-theoretic explanation – thus, neither as fundamentality explanation, which we reviewed above. Rather, they are to be taken as *essentialist explanations*. How is Glazier’s essentialist explanation applied to Wallner and Vaidya’s proposal?

As we saw in their answers to the questions *CQ1* and *CQ2*, ‘Essences are capable of explaining necessity because it is essential to essences that they are capable of explaining necessity’ (442; see also their footnote 21). The thought is that the essence of essence Glazier-explains its explaining necessity, or its capability to do so.

4.2. Problems with the proposal of Wallner and Vaidya

So far, so good. What we now would like to see is the mentioned explanation.

Note that they claim that their axiomatic solution (i.e. *E2**) licenses a ‘non-substantive answer’ to *CQ2*. That is: to the questions of *What is this necessity-conferring capacity? or: How do essences explain necessity?*, their answer is: ‘*They simply do! It just is the business of essences to explain necessity*’ (440).

Nonetheless, I am *not* posing *CQ2* here: I am prepared to accept their introduction of a notion of essence *defined* by its *necessity*, and by its *capacity* to explain necessity, and even by its *explanation* of necessity. But I am asking how is this alleged essential capacity *exercised*: I am requesting to see this explanation that essences essentially provide.

Unfortunately, Vaidya and Wallner do not provide an explicit presentation that would satisfy my request. It cannot be, for example, that the essential necessity of essence fills the gap in Hale’s argument, so that Hale’s argument provides the explanation. With *E1*, there is no gap between essence and necessity: essence *is* necessary, and then ‘we are not in need of such a deductive argument for the necessity of essence in the first place’ (430; see also footnote 12 and 438).

I suppose, however, that the proposal could conceivably be that there is no substantive explanation *of necessity by essence*. That is: not only essences are essentially necessary (*E1*) and essentially such that they

explain necessity ($E2^*$), but also, this explanation that they essentially provide is non-substantive, or even ineffable (perhaps even essentially so). My quarrel with this conceivable option is that it is not explanatory at all, and seems completely unmotivated beyond the drive to claim that essences do explain necessity. If there is an explanatory connection between essence and modality, we would like it to be specified further than by claiming that *it's there*. What is the explanation that essences essentially provide? So, I will now speculate how could this project be brought to fruition under the theoretical constraints that they explicitly endorse.

Perhaps the thought is this. According to $E1$, it is essentially true of essence that it entails its own necessity. Perhaps this suffices for the explanation. How? Well, if $E_x(p)$, and given the factivity of essentialist claims, it follows from $E1$ that $\Box(E_x(p))$. The factivity of essentialist claims follows from the logic of essence (Fine 2000), also from essentialist intuitions (e.g. Kment 2014, 157), and also from to Glazier's (2017) essentialist explanation – which would make sense of Vaidya and Wallner's appeal to it.¹⁰ Indeed, we need something stronger: the *necessary* factivity of essence:

$$\Box(E_x(p) \supset p),$$

i.e. not only that $E_x(p)$ implies p , but that this implication is necessary. Given the uncontroversial validity of the modal axioms T and K , this implies both the factivity of essence and that $\Box(p)$.

Let us put the derivation more explicitly:

(1) $E_E[E_x(p) \supset \Box(E_x(p))]$.	[$E1$]
(2) $\Box[E_A(\phi) \supset \phi]$.	[Necessary factivity of essence]
(3) $E_A(\phi) \supset \phi$.	[From (2), axiom T]
(4) $E_x(p) \supset \Box[E_x(p)]$.	[From (1), (3)]
(5) $\Box[E_x(p)] \supset \Box(p)$.	[From (2), axiom K]
(6) $E_x(p) \supset \Box(p)$.	[From (4), (5)]

From the reasonable principle of the necessary factivity of essence and the definition of essence as necessary, plus logical principles, the argument infers that essences imply necessities: (6). It is valid and, further, seems explanatory. Not too shabby!

¹⁰An anonymous referee suggested that, because essence is *truth in virtue of*, it analytically follows that every essential proposition is true. However, I believe that one can reasonably expect non-existent objects to have an essence – *being my brother* is part of what defines my merely possible big brother, for example, but that does not mean that my merely possible big brother *is* my brother, because that would entail that there is such a thing as my merely possible big brother and that he's actually my brother; but there is no such a thing. So, I don't take it as obvious that essence is factive. But this matter deserves more discussion than can be given here.

Sadly, however, if this argument were to be the explanation of the necessity of p in terms of p 's being essential to x , the explanation would be *transmissive*, simply because the *necessity* of the factivity of essence is required for the argument to work.

Suppose that we remove this assumption – that is, (2). The argument would be constituted by (1) and (3)–(6). However, without (2), the axiom K cannot be applied so as to give us (5). But without (5), (4) does not entail (6): without the necessary factivity of essence, the argument becomes a *non-sequitur*.

It may be thought that the premise could be strengthened. Perhaps it is essential to essence that it is necessarily factive. Instead of (2), consider:

(2') $E_E[\Box(E_A(\phi) \supset \phi)]$. [Essential necessary factivity of essence]

However, in order to infer (3) from this, we need the factivity of essence – which is (3) itself!

We may consider accepting (1), (2') and (3) as basic assumptions, instead of deriving (3) from (2). But having *both* the essential necessary factivity of essence along with the factivity of essence as primitive assumptions of the explanation is clearly *ad hoc*, and robs the purported explanation of much of its attractiveness.

No other possible amendment to this argument is obvious. But if the argument – which constitutes the alleged explanation – requires an appeal to the necessity of essence, the explanation must be transmissive, and so, it is ruled out by Vaidya and Wallner's own Hlean strictures.

At this point, one may start to question the importance of non-transmissiveness. The original argument seems very elegant, and its only two assumptions are very reasonable. Could we just simply let go of the requirement of non-transmissiveness? I would not recommend so, as that would bring back Blackburn's dilemma: if the *explanans* is necessary, its necessity again requires explanation. A transmissive explanation of necessity does not complete its explanatory task. We would like a metaphysical explanation of necessity to explain every necessity.

We want $E_x(p)$ to explain that $\Box(p)$. We attempted to carry out the explanation through an argument in KT modal logic, one that showed that $E_x(p)$ implies $\Box(p)$, given the background principles $E1$ and the necessary factivity of essence. But, for all of its attractiveness, this is not how the alleged essential explanatory power of essence is exercised. Is there another way?

Well (as an anonymous referee kindly noted), Wallner and Vaidya distinguish between being an explainer and *being an explainer of the explanation*. For example, after schematising their view into the theses *E1–E4*, Vaidya and Wallner claim that ‘The upshot is that “ $\Box E_x(p)$ ” explains (“ $E_x(p)$ ” explains “ $\Box(p)$ ”)’ (438). That is,

Upshot $\Box E_x(p) \implies [E_x(p) \implies \Box(p)]$.

However, this ‘does not entail that “ $\Box E_x(p)$ ” plays a role in the explanation of “ $\Box(p)$ ”, i.e. *Upshot* does not entail: $\Box E_x(p) \implies \Box(p)$.

It is very unclear what is the relation between *Upshot* and the *E-*, or *E**-, theses. Further, *Upshot* is never mentioned again. But suppose we take this discussion into account. If so, one may wonder whether not only the explainers, but also *the explainers of the explanation* are needed to derive what is explained. Then, the explainer of the explanation is $\Box E_x(p)$, and we would like to know whether that is also needed to derive what is explained, i.e. $\Box(p)$, from the explainer: $E_x(p)$ – but without this making it the case that $\Box E_x(p)$ explains $\Box(p)$ (which is what *E4* says). This last requirement is reasonable, because if the explanation of $\Box(p)$ appealed to $\Box E_x(p)$, the explanation would again be transmissive.

Perhaps the thought is that the explainer of the explanation – $\Box E_x(p)$ – is needed to derive what is explained: $\Box(p)$. But how would that derivation go? This is what I can think of:

(1) $\Box[E_x(p) \supset p]$	[Necessary factivity of essence]
(2) $\Box[E_x(p)]$	[Explainer of the explanation]
(3) $\Box[E_x(p)] \supset \Box(p)$	[From (1), axiom <i>K</i>]
(4) $\Box(p)$.	[From (2), (3)]

Again, the argument is valid, but if this constituted the explanation, the explanation would be transmissive – *twice over*: because now the necessity of not only the factivity of essence, but of essence, is assumed, and plays a role in the explanation, contravening *E4* and non-transmissiveness.

Or could it be that the necessary factivity of essence is not part of the explanation – not a premise of the argument – but, rather, an explainer of the explanation – an explainer of the argument? But, as we saw above, without the necessary factivity of essence as a premise, the argument breaks down: there would be no remaining argument, no remaining explanation, to explain.

Further, this discussion also relates to the complex debate about the grounding of grounding facts (see Bliss and Kelly 2016, § 4.1, for an

overview), where some have defended that if x grounds y then x grounds why x grounds y , others defending that the grounding fact needs metaphysical laws, or essences, and so on. No stable consensus seems to exist, as of today, on this matter. Now, though grounding is not the only sort of metaphysical explanation, one may hypothesise that, in general, the notion of *explainers of explanations* is obscure in this way, with the puzzles about grounding being merely an expression of the general situation.

At this point, I can't think of another way to pursue the idea that *E1*, plus acceptable premises, will help us to an argument that constitutes the explanation of necessity by essence. So, let us move on to a completely different kind of strategy.

First, for brevity, let an '*essentiality*' be the content of any essentialist attribution, i.e. any proposition p such that $E_x(p)$, for some x . Essentialities are propositions belonging to the essence of something. Then, the claim here would be that every essentiality is necessary: for every p , if $E_x(p)$, then $\Box(p)$. This is, of course, *Essentiality Implies Necessity* – which, as we saw, was considered by Fine, and which Hale's argument attempted to show.

Then, instead of deriving it from *E1* and the necessary factivity of essence, as in the argument above – which, as we saw, makes the explanation be transmissive – Wallner and Vaidya may directly postulate *Essentiality Implies Necessity* as a further axiom of essence, so that it is part of the constitutive nature of essence. With this principle, *E1* is no longer needed (because it claims that the *stronger* claim *Essences Are Necessary* defines essence), and there is some hope of providing a Glazier-style explanation of necessity. Such an explanation would be compatible with both *E4* and *E4**, because it is not the necessity of essential truth that does the explaining, but the fact that *it is part of the essence of essence* that every proposition essential to something is necessary. Let us see an example.

Suppose that:

- (1) Socrates is necessarily human.

Starting with the assumption of (2),

- (2) Socrates is essentially human,

and because essentialities are necessary, the essentialists explain (1) through essentialist explanation based on the essence of essence, which gives us (3),

(3) Socrates is necessarily human because he is essentially human.

Again: (1) is taken to be Glazier-explained in (3), assuming (2) and that every essentiality is necessary. That is: it is because Socrates is essentially human (2), and because the content of an essential truth is always necessary, that he is necessarily human (3).

Before evaluating this proposal, it is important to see that this is basically Wilsch's strategy (Wilsch 2017, 437), which we now review.

4.3. The proposal of Wilsch

Our second neo-essentialist project is Wilsch's (2017) *sophisticated modal primitivism*, according to which there are *sources of necessity*: primitive phenomena, different from necessity itself, which feature necessity in their real definition. Essence would be a prime example of a source, according to Wilsch. The sources' essences, which contain necessity,

feature the sources they characterise. The contents of modal essences, therefore, are *connection-principles* that describe the relationship between a source and necessity. Connection-principles establish explanations between source-truths and necessity-truths (436).

Such explanations are established through Glazier's essentialist explanation and explanatory deductive reasoning. In the case of essence, the explanation goes like this: every essentiality is necessary because (i) it is part of the essence of essence that every essentiality is necessary, and (ii) essences explain their contents.

More precisely, we begin with the following postulate:

$$W1 \ E_E[E_x(p) \supset \Box(p)],$$

which claims that *Essentiality Implies Necessity* defines essence. Then, we proceed through Glazier's essentialist explanation to *Essentiality Implies Necessity*:

$$E_x(p) \supset \Box(p),$$

which implicitly generalises for every x and p . Then, given any particular case of a thing that is essentially such that p , we logically infer that $\Box(p)$. This inference is plausibly explanatory, according to Wilsch. So, according to Wilsch (437), that $E_x(p)$ explains that $\Box(p)$.

4.4. Problems with this second essentialist explanation

According to this interpretation, the neo-essentialist camp is very unified: ultimately, they share the strategy of proceeding from the claim that *Essentiality Implies Necessity* defines essence to the Glazier-explanation of necessity. This strategy seems to both be attractively elegant and comply with the Haelean strictures against transmissiveness. Sadly, however, there is a problem.

As we have remarked quite a few times, according to the neo-essentialists, essence has an essence. And part of its essence is that essentialities are necessary. So, it is possible to specify essence's essence by specifying what it is for something to be essentially such and such, i.e.:

$$E_x(p) \equiv_{rdf.} \varepsilon[p],$$

where ' ε ' stands for what essential truths do, according to the essence of essence, and ' $\equiv_{rdf.}$ ' means that both sides are equivalent by *real* definition. Therefore, the left- and right-hand sides of the definitional equivalence denote the very same aspect of reality, because the right-hand side gives the real definition of the left-hand side. For example, assuming that the individual essence of Socrates is being the son of Phaenarete and Sophroniscus, this should be true:

Socrates is $F \equiv_{rdf.}$ The son of Phaenarete and Sophroniscus is F .

Now, because essence is essentially necessary, it follows that:

Essence $E_x(p) \equiv_{rdf.} \varepsilon'[p]$ and x is necessarily such that p .

Again, we assume that ' ε' ' is substituted so that both sides of the equivalence in *Essence* are understood as denoting the very same aspect of reality: $\varepsilon'[p]$ describes what it is for p to be essential to x , save for its being necessary to x . For example, suppose that essences 'fix the actual identity' of a thing (Wallner and Vaidya 2020, 423). Then, *Essence* says this:

$E_x(p) \equiv_{rdf.}$ being such that p fixes the identity of x , and x is necessarily such that p .

However it is filled in, *Essence* must include the necessity of p , because (again) essence is essentially necessary. But this entails a problem for the

alleged essentialist explanation of necessity by essence. Let me illustrate the problem for our sample explanation; it obviously generalises.

Remember that the *explanandum* was:

(1) Socrates is necessarily human.

Then, with the assumptions of (2),

(2) Socrates is essentially human,

and of *W1*,

W1 $E_E[E_x(p) \supset \Box(p)]$,

the essentialists explain (1) through essentialist explanation based on the essence of essence and deductive reasoning, which gives us (3),

(3) Socrates is necessarily human because he is essentially human.

We can now see the problem. If we now consider *Essence*, (2) in the essentialist explanation is the very same fact as:

(4) Socrates is necessarily human, and ε [Socrates is human].

And then (3) is:

(5) Socrates is necessarily human because ε [Socrates is human] and Socrates is necessarily human.

The problem is that (5) has the form: p because $q \wedge p$, where $p = \langle \text{Socrates is necessarily human} \rangle$ and $q = \langle \varepsilon[\text{Socrates is human}] \rangle$. But how could $p \wedge q$ be the metaphysical *explanans* for p ? I'm not asking for $p \wedge q$ to be a 'metaphysical cause' of p – that is already taken for grounding and associated with fundamentality explanation. I'm asking where's the explanatory connection. There sure is a logical connection, but metaphysical explanation is different. The problem here is that a proposition hardly ever, if ever, explains itself, and mentioning *another* proposition, which by assumption is not a causal or fundamentality *explanans*, seems only to be beside the point.

It may be argued that there is an explanatory connection because, even though both sides of ' \equiv_{rdf} ' denote the same aspect of reality, there may be opacity. However, the fact that there is some conceptual or semantic phenomenon does not alleviate the present worry, as the question was not about a *semantic*, but a *metaphysical* kind of explanation. If the alleged explanatory connection reduced to a mere representational fact – one having to do with language or concepts – then, nothing would stop us from creating *other* representations, according to which the explanatory arrow were reversed, or even non-existent.

My conclusion is that this proposed explanation of necessity by essence fails to provide a real explanation.¹¹

4.5. An attempted constraint explanation of necessity by essence and its problems

In fact, we can extend this argument to a *third* model of metaphysical explanation, different from fundamentality- and essentialist explanation: Bertrand's (2019) *constraint explanation*. The general idea is that constraint explanations work *from the top down*, citing general principles as opposed to citing causes or grounds.

Here is one of Bertrand's stock examples:

Dishes: Imagine five dishes in a sink, one stacked on top of the other, and suppose that exactly these dishes taken together sum to form an object [– a *stack*.] The fact that composition is unique explains the fact that there are not two distinct stacks composed of exactly our five dishes.

This is a metaphysical explanation by constraint if uniqueness is a *constraint* on the composition relation, rather than a *generalisation* from every particular case of composition. Then, 'each instance is unique for the same reason: because the uniqueness constraint limits the ways in which composition might be' (1331).

This is Bertrand's account of metaphysical constraints:

For some (worldly) fact C and entity x , C counts as a metaphysical constraint on x if and only if that C is the case is part of what it is to be x .

Then, Bertrand's constraints are parts of the essences of things. He proposes a model of metaphysical explanations by constraint (1336–1337):

¹¹Note that I have *not* questioned essentialist explanation *in general*. My argument built on the specific proposal that essentialities are essentially necessary. That trivialises the hypothetical essentialist explanation of necessity by essence; but, by itself, does not trivialise other essentialist explanations.

Constraint Explanation (Bertrand's model) Where C is essential to some x , C constraint-explains a fact F if: were F fail to obtain, another fact F^* would obtain which is (i) logically or metaphysically *inconsistent* with C , and (ii) logically or metaphysically consistent with some facts Δ that would then obtain.

Bertrand differentiates his account from essentialist explanation. The first difference is that in Glazier's model, p is explained by the essentialist truth that p is part of x 's essence; in Bertrand's model, the explanans is the *essentiality*, p . Second, while the *explananda* of essentialist explanations must be parts of some essence, understood as 'something very close to Fine's notion of immediate constitutive essence' (Glazier 2017, 2873), Bertrand's *explananda* are not immediate constitutive essentialities – for example, the compositional behaviour of the dishes in the example above is not part of the immediate constitutive essence of composition.

Could essentialists provide a constraint explanation of modality using Bertrand's account of constraint explanation? No. As I will now argue, the problem with the attempted essentialist explanation is also confronted by the possible constraint explanation.

For the essentialists, the metaphysical *explanans* of necessity is essence. And in every constraint explanation, the *explanans* is a constraint on something. And the metaphysical constraints on x , in Bertrand's account, are exactly the essentialities of x (call these 'Bertrand-constraints'). So, the essentialists using Bertrand's account would give a constraint explanation of necessity in terms of the essentialities of something.

With Bertrand's account, there are two options for the *explanans*:

- (i) The essence of *essence*. A Bertrand-constraint on essence is that every essentiality is necessary, as per *W1*. Then, the explanation of why p is necessary would be the Bertrand-constraint on essence that *all essentialities are necessary*. This requires p to be an essentiality or a necessary consequence of one.
- (ii) The essence of some x . The explanation of why is p necessary would be a Bertrand-constraint on x . Then, p would be necessary because it is a Bertrand-constraint on x or a necessary consequence of one.

In each case, the *explanandum* is $\Box p$. In (i), the *explanans* is that all essentialities are necessary and p is an essentiality or follows from one. In (ii), the *explanans* is that p is an essentiality or follows from one.

But then, remember *Essence*: For p to be an essentiality of x is for p to be ε and a necessarily true proposition about x . Then, according to option (ii), the *explanans* of p 's necessity would either be that (ii-a) p is a truth

about x that is ε and necessary, or that (ii-b) p follows from a truth about x that is ε and necessary. In each case, the explanatory value is nil. This is evident in (ii-a). In (ii-b), we need only note that no essentialist ideology, and no account of metaphysical constraints, are required to see that p is necessary if it follows from another necessary proposition (which in our cases of interest, happens to be ε). Essentialist ideology and the essentialist account of constraints do not add any explanatory value to what is already given by logic.

Now, according to option (i), the *explanans* of p 's necessity would either be that (i-a) p is a truth about x that is ε and necessary, and all ε -type and necessary truths are necessary; or that (i-b) p follows from a truth about x that is ε and necessary, and all ε -type and necessary truths are necessary. Again, it is obvious, I hope, that no explanatory value is added by the essentialist ideology and the essentialist account of constraints.

We have considered a possible constraint explanation that proceeds through *W1*. What about *E1*? According to it, it is a Bertrand-constraint on essence that every essentialist truth – i.e. every truth of the form ' $E_x(p)$ ' – is necessary. However, this Bertrand-constraint only directly explains, if at all, the necessity of the essentialists truths. If it is to be used for a constraint-explanation of metaphysical necessities that are not essentialists truths – like \langle Socrates is human \rangle , which is necessary, but, while being an essentiality, is not an essentialist truth –, an explanatory link needs to be established between the necessity of essentialist truths and the necessity of all other necessities. Then, this option takes us back to square one: the problem, examined in §4.2, that we lack a non-transmissive route from *E1* – i.e. the claim that *Essences Are Necessary* is essential to essence – to *Essentiality Implies Necessity*.

5. Conclusion

I have examined the prospects for a metaphysical explanation of necessity. In this first part of the paper, I examined one of the only explicit attempts to show, without the assumption of modal principles, that propositions essential to a thing are necessary. This is Hale's argument, and I argued that it remains invalid: it cannot be made to work with Vaidya and Wallner's strategy, and it is only valid if it assumes the necessity of essence, which renders it circular.

In the later part, I examined the prospects for an explanation of necessity that takes essence to be an essentially modal posit – what I labelled

neo-essentialism. Neo-essentialists abandon the project of reducing, grounding or in general providing a fundamentality explanation of necessity in terms of essence, and think that, instead, an essentialist explanation can be provided. I have argued that no real explanation has been provided, and I extended the argument to a third kind of metaphysical explanation: constraint explanation. I conclude that, so far, the neo-essentialists have not shown that a Finean notion of essence is the metaphysical *explanans* of necessity.¹²

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