Necessity by accident
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Abstract: Are contingent necessity-makers possible? General consensus is that they are not, as contingencies are thought to lack the requisite modal strength to do the job. However, the central aim of this paper is to show that received opinion on this matter is incorrect – contingent necessity-makers are in fact possible. More specifically, I show that, for every contingent Q that is a partial ground for some necessary P’s truth, there is a plurality Γ, consisting of Q plus some (possibly empty) Δ, that is a full ground for P’s modal status. This result impacts debates about the foundations of modality, including providing a direct counter-example to the contingency horn of Blackburn’s dilemma.

Keywords: necessity; contingency; foundations of modality; Blackburn’s dilemma; grounding

The notion of a necessity-maker – that is, something that explains some fact’s necessity, rather than its truth – is relatively under-explored. One important but unresolved question here concerns the potential modal status of necessity-makers; supposing that Q is a necessity-maker for some necessity P, could Q be a contingency? Or, put more generally, are contingent necessity-makers possible?

This question is intimately bound up with Blackburn’s dilemma about the source of necessity. In brief: take any explanation of the form, ‘□P because Q’. Assuming such an explanation is true, the explanans Q must itself be either contingent or necessary. But neither option is satisfactory, according to Blackburn. For if Q is necessary, we must then explain Q’s necessity, meaning we’ve a ‘bad residual must’ that we can’t eliminate. Meanwhile, if Q is contingent, then we’ve ‘strong pressure to feel that the original necessity has not been explained or identified, so much as undermined.’ Consequently, either the explanans ‘shares the modal status of the original, and leaves us dissatisfied, or it does not, and leaves us equally dissatisfied’ (Blackburn 1987: 54).

Discussion of Blackburn’s dilemma has primarily focused on blunting the necessity horn. This is in part because general consensus has it that contingencies ‘lack the modal strength to be necessity-makers’ (Lange 2008: 122). Thus, as Hale puts it, ‘if there can be any explanation of necessities at all – either of particular necessities, or of the existence of necessities in general – it can only be in terms of necessities’ (2013: 131).1

The central aim of this paper is to show that, contra received opinion, contingent necessity-makers are possible. To be more specific, I here argue that, for every contingent Q that is a partial ground of some absolute necessity P’s truth, there is a contingent plurality Γ, consisting of Q plus some (possibly empty) Δ, that is a necessity-maker for P.

With this in mind, the paper has the following structure. I begin (§1) by spelling out the requisite preliminaries and background assumptions. This is followed (§2) by a general argument, designed to show that the modal status of numerous necessities are fully explained by contingent matters. This leads to a pair of sections (§3 and 4) anticipating some objections to the argument, and, where necessary, suitably modifying it. Finally, I conclude (§5) by briefly noting how these results impact some broader questions in the metaphysics of modality.

However, before I move on, two clarifications are in order. First, it should be clear that the central question of this paper is not whether there are any instances where a necessary P’s truth is explained by a contingent Q; there are a multitude of such cases – for example, the truth of (Socrates is wise or ¬(Socrates is wise)) is fully explained by the contingent fact that Socrates

1 See e.g. Hale (2002) and Cameron (2010) for general discussion of Blackburn’s dilemma, and Hale (2013), Hanks (2008), and Lange (2008) for arguments to the effect that the contingent horn cannot be blunted. Morato (2014) is an exception, offering a story wherein contingent truths in one world ground necessities in other worlds; however, I have elsewhere (Wildman ms) argued that this account is problematic.
is wise. Rather, the main question is whether there are cases where the modal status of a necessary P is explained by a contingent Q.

Second, one initially plausible source of contingent necessity-makers is linguistic conventions – indeed, Hale says it is ‘far from clear’ how a non-conventionalist, contingentist explanation of necessities might run (2013: 128). Roughly, the conventionalist says that our linguistic conventions ground the meanings of our expressions, which in turn ground the analyticity of certain propositions. And, as all analyticities are necessary, we can trace the resulting necessity back down to our (contingent) linguistic conventions. Despite the initially attractive nature of this sort of approach, I will avoid it here – the contingent necessity-makers I detail below have nothing to do with linguistic conventions. I do so in order to avoid the problems that this conventionalist approach faces; most significantly, the most linguistic conventions can do is determine what our sentences say, not whether what they say is true, which undercuts the idea that conventions are necessity-makers.²

§1. Preliminaries

Following recent trends, I use ‘ground’ to express a metaphysical form of (constitutive, non-causal) explanation. As I understand it, grounding is distinct from supervenience, entailment, truth-making, and ontological dependence, and is irreflexive, asymmetric, transitive, and factive.³ So characterized, grounding forms a strict partial order – a hierarchy of ground – with the (more) fundamental serving to metaphysically explain the (more) derivative.

Moreover, we can distinguish between full and partial grounding, the former of which I’ll express using the connective ‘≺’, while reserving ‘≺’ for the latter. And while full ground will remain undefined, we can define partial ground in the following manner:

\[ A ≺ C \iff \text{there is some (possibly empty) } \Delta \text{ such that } A, \Delta ≺ C \]

The added Δ can’t be arbitrary, but must be relevant to the grounded fact. This relevance constraint renders grounding non-monotonic. Further, full ground imposes a sufficiency constraint: if some facts constitute a full ground of some other fact, then their obtaining must be sufficient (in some appropriate sense) for the grounded fact’s obtaining. Thus a fact’s full grounds is bound ‘from below’ by the sufficiency constraint, which forces us to put enough into a given collection of facts that they are jointly sufficient for the fact to be grounded. [And] it is bound ‘from above’ by the relevance constraint, which prevents us from enlarging the collection of facts that is to be the ground in arbitrary ways. (Krämer & Roski 2015: 65)

Additionally, both full and partial ground are also many-one, in that they may take any number of arguments on the left-hand-side, but only one on the right.⁵ This is required for certain intuitive grounding claims. For example, A and B jointly fully ground the conjunctive (A ∧ B) but, given irreflexivity, the only way to properly capture the grounding claim is by treating it as ‘A, B ≺ (A ∧ B)’

² The exception being propositions about conventions, which are non-necessary (and hence irrelevant for present purposes). For more against linguistic conventionalist approaches, see Quine (1936), Lewy (1976), Yablo (1992) and Hale (2013: 117-31); meanwhile, for a defence of conventionalism, see Sidelle (1989).

³ For broadly similar treatments of ground, see e.g. Audi (2012a, 2012b), Skiles (2015) and Fine (2012a). However, note that Audi takes grounding to an explanation backing, rather than an explanatory, relationship. This point does not affect the present discussion.

⁴ Fine (2012a) calls this partial strict ground. A consequence of this definition is that all full grounds are also partial grounds, and all partial grounds are part of some full ground. For similar definitions of partial ground, see Correia and Schnieder (2012: 21), Litaland (2013: 20), Raven (2013: 194), Rosen (2010: 115), and Skiles (2015).

⁵ Strangely, Fine (2012a) defines partial ground as a one-one relation; however, the concept seems just as much many-one as full grounding, especially given that, since all full grounds are also partial grounds, the truth of ‘A, B ≺ (A ∧ B)’ seems to entail the truth of ‘A, B ≺ (A ∧ B)’.
B). Consequently, there are facts which are fully grounded in a plurality consisting of several facts, though there is no single fact that alone serves as the full ground.

And while this sketch ignores several important controversies about the details of grounding’s nature, it represents a fairly standard way of approaching the notion, which suffices for present purposes.\(^5\)

With this characterization of grounding in hand, it is possible to define ‘necessity-maker’ and ‘contingent necessity-maker’:

\[
\Gamma \text{ is a necessity-maker for } A \iff \Gamma \prec \square A
\]

\[
\Gamma \text{ is a contingent necessity-maker for } A \iff \Gamma \prec \square A \text{ and, where sentences } S_1, \ldots, S_n \text{ are the members of } \Gamma, \neg \square(S_1 \land \ldots \land S_n)\]

This means we’ll have a positive answer to our overarching question if we can show that some \(\Gamma\) both contingently obtains and serves as a necessity-maker for some necessity \(\Lambda\).

With these preliminaries out of the way, we can now move on to the argument.

\section*{§2. For contingent necessity-makers}

Take the broadly logical necessity, \(\square(Socrates \text{ is wise } \lor \neg(Socrates \text{ is wise})).\)\(^6\) As it is plausible that at least part of the explanation for a fact’s being necessarily true is that it is in fact true, it seems equally plausible to assume that this fact is partially grounded in the non-modal disjunction, \((Socrates \text{ is wise } \lor \neg(Socrates \text{ is wise})).\)

This disjunction is fully – and hence also partially – grounded in its true disjunct, that Socrates is wise. So, by the transitivity of partial ground, that Socrates is wise partially grounds that \(\square(Socrates \text{ is wise } \lor \neg(Socrates \text{ is wise})).\) Then, applying the definition of partial grounds, it follows that there is some (possibly empty) \(\Delta\) that we can add to Socrates’s being wise to get \(\Gamma\), which fully grounds that \(\square(Socrates \text{ is wise } \lor \neg(Socrates \text{ is wise})).\)

This proves that \(\Gamma\) is a necessity-maker. But is it contingent? Well, one of the conjuncts of the conjunction of \(\Gamma\)’s members – namely, ‘Socrates is wise’ – is only contingently true. Consequently, the conjunction of \(\Gamma\)’s members is also only contingently true. That is, the contingency of ‘Socrates is wise’ infects upwards, rendering the conjunction ‘Socrates is wise \& \Delta’ contingent.

So, by the definition of contingent necessity-maker, \(\Gamma\) is a contingent necessity-maker for the broadly logical necessity, \(\square(Socrates \text{ is wise } \lor \neg(Socrates \text{ is wise})).\) And, more generally, there is at least one contingent necessity-maker.

Alternatively, take the complex necessity, \(\square\diamond(\text{my dog Ohle is hungry}).\) Plausibly, this is fully grounded in the plurality consisting of the possibility, \(\diamond(\text{Ohle is hungry}),\) and the S5 principle – i.e., that, for all \(X,\) if \(\diamond X\) then \(\square \diamond X.\) This entails that the possibility, \(\diamond(\text{Ohle is hungry}),\) is a partial grounds for the necessity.\(^7\)

Now, this possibility is fully – and hence also partially – grounded in the contingent fact that Ohle is hungry and the fact that the accessibility relation is reflexive. So, by transitivity, the

\(^6\) See e.g. Correia and Schnieder (2012), Trogdon (2013), Wilson (2014), and Bliss and Trogdon (2014) for further discussion.

\(^7\) The limiting case is when \(\Gamma\) consists of a single sentence \(S;\) then the ‘conjunction’ will consist of \(S\) alone.

\(^8\) Prior (1967) thought this fact isn’t necessary, since, for him, necessitation fails for sentences containing contingent existents. However, given that (i) Prior’s account faces significant difficulties – see e.g. Menzel (1991) for more discussion – and (ii) standard accounts do treat this as a (broadly logical) necessity, I’ll here assume that it is a necessity after all.

\(^9\) Because there is some \(\Delta\) – namely, the S5 principle – which we can ‘add’ to \(\diamond(\text{Ohle is hungry})\) to get a full ground for the necessity.
plurality consisting of Ohle’s being hungry and accessibility’s being reflexive is a partial grounds for □ threaten (Ohle is hungry). By the definition of partial ground, there is some Δ (in this case, the S5 principle) which we can ‘add’ to this plurality to get a full ground. So the plurality consisting of Ohle is hungry, accessibility is reflexive, and the S5 principle is a necessity-maker for □ threaten (Ohle is hungry).

And, more importantly, this necessity-maker is contingent: the conjunction of Ohle is hungry, accessibility is reflexive, and the S5 principle is only contingently true, because, despite however frequently he begs for food, Ohle is only contingently hungry. Consequently, this plurality is a contingent necessity-maker for □ threaten (Ohle is hungry). And, more generally, there are some contingent necessity-makers.

Both arguments have the same underlying form. Take any necessity □ P. Assuming that at least part of the explanation for P’s being necessarily true is that it is in fact true, P will be a partial ground for □ P. Now, suppose that there is some contingent Q which is a partial ground for P. By the transitivity of partial grounds, it follows that Q is a partial grounds for □ P. Then, by the definition of partial grounds, there is some (possibly empty) Δ which we can add to Q to get a full ground for □ P. However, Q’s contingency entails that ‘Q ∧ Δ’ is only contingently true. Consequently, the plurality consisting of Q and Δ satisfies the right-hand-side of our definition, and is a contingent necessity-maker for □ P.

Put more formally:

(1) P ≺ □ P
(2) Q ≺ P
(3) Q ≺ □ P
(4) □ Q
(5) Q, Δ ≺ □ P
(6) □ Q (Q ∧ Δ)
(7) (Q, Δ ≺ □ P) ∧ (□ Q (Q ∧ Δ))

Given our definition, (7) amounts to the claim that there is a contingent necessity-maker.

As the argument applies to any contingent Q which is (at least) a partial ground for some P’s necessity, there are as many contingent necessity-makers as there are such Q’s. Further, the argument is schematic: it can be run using any sense of necessity, provided that the sense of possibility employed is the necessity’s dual.

That said, there are a few points worth clarifying. First, Δ’s modal status is irrelevant – whether it is necessary or contingent, ‘Q ∧ Δ’ will always be contingently true.

And second, availability of ‘competing’ neccessary necessity-makers isn’t a problem. For example, it is natural to think that the Law of Excluded Middle alone is a necessity-maker for all necessities of the form □ (P ∨ ¬P).10 Consequently, LEM is a (necessary) necessity-maker for □ (Socrates is wise ∨ ¬ (Socrates is wise)). However, as Schnieder (2011: 458) has pointed out, explanation is not exclusive; that something can be explained in terms of non-contingent factors does not exclude it’s being explainable in terms of contingent ones too (or vice versa). So LEM might be a full ground for □ (Socrates is wise ∨ ¬ (Socrates is wise)), and, at the same time, so too might the plurality consisting of Socrates is wise and Δ.

But this highlights a third issue, concerning Δ’s content. For suppose that, as it turns out, the only Δ we could ‘add’ to Q is itself a necessity-maker. In that case, taking the two together

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10 We might not be able to use LEM itself as a ground for disjunctions since the LEM is a universal quantification, and, as such, is grounded in its true instances. If so, we can replace all instances of it with the fact that LEM is a law; nothing of substance for the present discussion changes. For more on the complex explanatory relationship between instance and laws, see Hoeltje et al (2013: 516–7).
would violate grounding’s relevance constraint. Consequently, the plurality consisting of Q and Δ is not a full ground for □P.\textsuperscript{11}

Thankfully, there’s good reason to think there will be plenty of Δ’s that aren’t necessity-makers in their own rights. Take the Ohle case. There, the Δ – the S5 principle that, for all X, if ØX then □ØX – is not a full ground for □Ø(Ohle is hungry). That’s because the principle takes the form of a conditional, and we need to satisfy the antecedent in order to generate the consequent. In other words, we need to secure the truth of ‘Ø(Ohle is hungry)’ in order to get use the principle to get us to the necessity. To do this, we can go via the (contingent!) fact that Ohle is hungry and the (necessary) fact that accessibility is reflexive. Thus the trio of Ohle’s being hungry, accessibility being reflexive, and the S5 principle fully ground □Ø(Ohle is hungry), but none of them are themselves full grounds – not Ohle’s being hungry, the reflexivity of accessibility, nor, most importantly, the S5 principle. And, more generally, for necessities of the form ‘□Ø(P)’, the relevant contingent necessity-maker in worlds where ‘P’ is true will be a plurality consisting of P, accessibility’s being reflexive, and the S5 principle.\textsuperscript{12}

Meanwhile, take the Socrates case. I already admitted that, plausibly, the LEM is a full ground for □(Socrates is wise ∨ ¬(Socrates is wise)), so it can’t serve as Δ. However, one plausible candidate Δ is that, in all other worlds, either Socrates is wise or it’s not the case that Socrates is wise (i.e., that @ accesses world w1, where Socrates is wise, and world w2, where it’s not the case that Socrates is wise, and so on, for all worlds distinct from the actual world). This relational fact cannot be a full ground for □(Socrates is wise ∨ ¬(Socrates is wise)) since it has an ‘actuality gap’ – it says nothing about what is the case in the actual world. And the only way to fill this gap (and hence get a full ground) is by taking it in combination with the (contingent!) fact that Socrates is wise.

More generally, when it comes to necessities of the form ‘□(P ∨ ¬P)’, we can say that the relevant contingent necessity-maker at a given world w is a plurality consisting of whichever of P or ¬P is true at w, plus the fact that, for all worlds w distant from w, either P or ¬P in w. This (necessary) relational fact fixes how things are in all the non-w-worlds, while the (contingent) fact that P/¬P serves to fix how things are in w. Only together do they fix how things have to be in all the worlds.

Of course, there will likely be multiple ways of filling out Δ which deliver the desired results. Indeed, one interesting future task here concerns specifying what Δ consists of in the various cases. But whatever Δ turns out to be, if it isn’t itself a full ground for the relevant necessity, then the resulting plurality of Q and Δ will be a (non-degenerate) contingent necessity-maker.

Two more small points of clarification before moving. First, suppose that Q is an actual contingent necessity-maker for P. Consider a world w, where P obtains but Q does not. Is P still grounded in Q in w?\textsuperscript{13}

As grounding is factive, the answer is ‘no’. While Q is a ground for □P in the actual world, Q isn’t a ground for anything in w. So what is P’s necessity-maker in w? That depends on what sort of necessity P is. If P is a necessary disjunction (like our original example), then it will be the true disjunct plus some (possibly empty) Δ; so in worlds where Socrates is not wise, the necessity-maker for □((Socrates is wise ∨ ¬(Socrates is wise)) is a plurality consisting of the fact that ¬(Socrates is wise) plus Θ, where Θ may (or may not!) be the same as Δ. And the same goes for P’s with different logical forms: in worlds where Q isn’t around to do its duty, some other facts will step-in to serve as the relevant necessity-makers.

\textsuperscript{11} A slightly weaker version of this objection claims that while Q and Δ are a full ground for □P, the resulting contingent necessity maker is somehow degenerate or ‘cheap’. The reply given above applies equally to this worry.

\textsuperscript{12} More shortly about worlds where P is false.

\textsuperscript{13} In contrast, Morato (2014), argues that Q would still be a partial ground for P. However, see [REDACTED] for further discussion.
Meanwhile, take our second case. In the worlds where Ohle is hungry, there is a clear contingent necessity-maker. But what about worlds where he isn’t so? What serves as the relevant necessity-maker here?

One answer is the (complex) relational fact that every accessible world is such that they can all access a world where Ohle is hungry. Of course, this is a necessary necessity-maker, but that’s no bother: again, explanation isn’t exclusive. That this necessary necessity-maker is there doesn’t preclude the existence of a contingent necessity-maker too.

Finally, it is worth noting that, if we know that Q is a partial ground for P’s necessity, we can avoid the first few steps on the initial argument. This gives us the following simpler variation:

\[(1’) Q < □P\] Assumption
\[(2’) \Diamond \neg Q\] Assumption
\[(3’) Q, \Delta < □P\] (3), df. of <
\[(4’) \Diamond (Q \land \Delta)\] (4), modal logic
\[(5’) (Q, \Delta < □P)) \land (\Diamond \neg(Q \land \Delta))\] (5), (6), ∧I

The result remains the same: there is a contingent necessity-maker.

The general upshot of the above is that some necessities have contingent necessity-makers. Of course, not everyone will be happy with this conclusion (or about how I got there). To that end, the proceeding two sections anticipate some potential objections.

§3. Against P ≺ □P
The first and most threatening objection targets the assumption that the non-modal P is a partial ground for the necessity □P. Were this assumption to go, then the argument wouldn’t get off the ground.

This objection can take three forms. The NEUTRALITY version of the objection rejects the assumption because, according to the objector, there is no direct grounding connection between P and □P – the two are, on this view, grounding-neutral to one-another. But, by itself, NEUTRALITY isn’t much of a threat. Frankly, it is implausible that there is no direct grounding connection between P and □P – the two facts are just too intimately connected for there to not be some sort of grounding link between them.

Alternatively, the closely related COMMON version of the objection holds that both P and □P are grounded in some deeper fact – for example, in some fact about the essences of the entities P involves – and that the two sharing this common ground explains how they are ‘intimately’ though not directly grounding-related to each other.

However, that P and □P share a common ground doesn’t entail that they lack a direct grounding connection – generally, A can be a ground for B even when A and B are both grounded in some common C. For example, [the ball is red] grounds [the ball is coloured] even though [the ball is crimson] is a common ground for both. In this way, the onus is on the COMMONer to prove that P and □P are not directly grounding connected; until such an argument is advanced, we can set this version of the objection aside.

This leads to the third, BACKWARDS, version of the objection, according to which the assumption gets the grounding link precisely backwards; that is, the assumption says that P is a partial ground for □P, but in fact □P is (at least!) a partial ground for P.

In reply, I offer three points. Individually, they are potentially resistible — a die-hard BACKWARDSer can certainly try to push back against them. However, taken as a package, they put

14 The COMMONer might try to re-run their objection using immediate grounding, but the same reply goes through: just take the case of A ∨ B < (A ∨ (A ∨ B)). Thanks to Michael Clark for discussion on this point.
significant pressure on BACKWARDS, pressure which is sufficient to shift the burden of proof into their court (and hence render my assumption plausible).

First, there is a widely accepted, tight analogy between necessity and universal quantification over possible worlds. And, as universal quantifications are grounded in their true instances, [for all worlds, P] is partially grounded in P’s being the case in the actual world. So, by analogy, it is natural to think that □P is partially grounded in P’s truth. In this way, the analogy gives us a prima facie reason for thinking that grounding flows from the un-boxed to boxed, not the other way around.

And this point is even stronger if one thinks that ‘□’ isn’t merely analogous to a universal quantification over worlds, but rather one and the same thing. For on this worlds-based conception of modality, my assumption immediately follows, since the boxed-fact just is the universally quantified fact.

Of course, this isn’t going to convince all BACKWARDSers. For a host of reasons, they might be inclined to give up on the analogy between (or identification of) necessity and universal quantification over worlds. But the analogy is deeply entrenched. Consequently, being forced to reject the extremely plausible analogous link between necessity and universal quantification would be a point against BACKWARDS (and hence for my assumption).

Second, BACKWARDS runs counter to the basic idea that more logically complex facts are grounded in their simpler constituents. This simple-to-complex rule is repeated throughout the logic of ground:15 for example, conjunctions, disjunctions, existential, and universal quantification are all taken to be grounded in logically simpler facts. Yet BACKWARDS turns the pattern on its head: instead of having the simpler P be grounds for the more logically complex □P, the objector says that the more complex fact grounds the simpler one. In this way, it seems that BACKWARDS’s major claim looks… well, backwards.16

However, the BACKWARDSers can (rightly) point out that what supports positing grounding relations in this manner is the general thought that a truth-functional compound has its truth-value because of the truth-values of its components, and it isn’t clear how this line of reasoning can be extended to cover P and □P.17 But, even so, the general inclination to trace grounding from the simple to the complex provides a (defeasible) point in my assumption’s favour.

Third and finally, BACKWARDS has a motivation problem. That is, it’s hard to see what reasons we might cite for adopting it. From what I can tell, there are two ways this might go.

First motivation: we should plump for BACKWARDS because necessary truth and truth stand in a determinate-determinable relationship. According to this view, necessary truth is a determinate of truth (in the same way that violent murder is a determinate of murder). Then, as determinates ground determinables, it will follow that □P (at least) partially grounds P!

The problem is this line of motivation delivers the wrong results when we consider necessity’s dual. For it looks wrong to say that ‘possibly true’ is a determinate of ‘true’ – after all, something can be possibly true while failing to be true (e.g., ‘I have a sibling’ is possible true, but not true simpliciter). And given the duality of possibility and necessity, this seems a point against the idea that necessary truth is a determinate of truth. So this motivation is questionable at best.

Second motivation: we frequently say things like, “P is true because it must be so”. Read as an expression of metaphysical explanation, this is tantamount to saying that P is grounded in □P. So, our tendency to accept these claims offers some support for BACKWARDS.

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15 This idea is implicit in the logic of grounding given by Fine (2012a, 2012b), as well as in e.g. Correia (2010, 2014), Rosen (2010), and Litland (forthcoming).

16 One notable possible exception is that determinates, e.g. [the ball is crimson], are standardly taken to ground the relevant determinables, e.g. [the ball is red]. However, it is unclear if this is a violation of the rule, since it is unclear if either is more/less logically complex. See Rosen (2010) and Wilson (2012) for further discussion.

17 See e.g. Schnieder (2011: 458).
Compare, ‘cherry pie is tasty because every cherry pie is tasty’. At first brush, this involves explaining a particular fact – that pie is tasty – by appeal to a relevant universal generalization – every cherry pie is tasty. However, as universal quantifications are grounded in their true instances, metaphysical explanation goes in the opposite direction: that is, pie’s being tasty is a partial ground for every cherry pie’s being tasty. In other words, the ‘because’ in the first claim is an instance of the evidential, not the explanatory, use of ‘because’.

Something similar is happening in the ‘must so’ stories: claims about P being true because it must be so are naturally read as expressing evidential, not explanatory, claims. We ask, ‘Why is P true?’, and we’re told, ‘Because it has to be’. This certainly gives us good evidence for thinking that P is true, though it doesn’t provide an explanation for P’s truth. And since we’re interested in (metaphysical) explanations, such assertions are irrelevant.

When we combine this motivation problem with the previous two difficulties, we’ve laid bare the costs of adopting backwards, at least when compared to my (forward-thinking) assumption. Anyone who rejects my assumption must (i) deny the widely accepted quantification analogy, (ii) admit exceptions to the ‘simple-to-complex’ rule in the logic of ground, and (iii) offer some independent and convincing motivation for their position. These are all costs one must pay once one goes backwards. Of course, this isn’t to say that paying them is impossible – that would be over-selling the case. Yet they remain a burdensome debt none the less.

§4. Against the transitivity of \textless

A second objection is that partial grounding isn’t transitive, thereby blocking the move from (1) and (2) to (3). Suppose that Al and Betty shingle a roof together, with Al shingling the north side and Betty the south. Al and Betty are each partial explanations of the roof’s being shingled. Further, the roof’s being shingled explains why Al remains dry in the rain. But suppose that Al’s sitting under the north side of the roof. If so, he’d be dry even if Betty hadn’t shingled her half of the roof. So it seems that even though Betty’s shingling is a partial explanation of the roof’s being shingled, and the roof’s being shingled is a full, and hence also partial, explanation of Al’s being dry, Betty is not a partial explanation of Al’s being dry.

A first response would be to deny that the roof’s shingled is a full ground for Al’s being dry (though it might be a cause). For recall that full grounding is restrained by a relevance constraint, which prevents us from adding additional, arbitrary elements to what is already a full ground. Since, the north side’s being shingled is a full ground for Al’s being dry, we can reasonably say that the further elements being added – the information having to do with the roof’s south side – aren’t relevant.

Alternatively, instead of appealing to the transitivity of partial grounding, we can make do by using the weaker full-to-partial transitivity principle:

\textbf{FTP} \hspace{1cm} \text{If A} \textless \text{B and B} \textless \text{C, then A} \textless \text{C}

\text{FTP} has intuitive appeal: if A is both relevant to and sufficient for B, and B is relevant but not sufficient for C, then A will also be relevant (though not sufficient) for C. Further, it fits with both our initial examples: that Socrates is wise fully grounds that (Socrates is wise ∨ ¬(Socrates is wise)), and the plurality consisting of Ohle is hungry and accessibility’s being reflexive fully grounds that 0(Ohle is hungry). Finally, it does not entail that partial grounding is transitive.

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18 For more on the evidential and explanatory uses of because, see Morreal (1979) and Schnieder (2010, 2011).
19 Relatedly, one might object that grounding in general isn’t transitive, appealing to Schaffer (2012), who offers some supposed counter-examples to grounding’s transitivity. However, cf. Raven (2013) and Litland (2013) for convincing rejoinders. See also Tahko (2013).
20 If we need evidence for this, we can cite the example’s own conclusion.
21 In fact, FTP is a theorem in Fine’s (2012b) logic of ground.
Adopting FTP, we can re-formulate the general argument to apply to any contingent Q which is a full ground for P’s truth, like so:

(1*) \( P \prec \Box P \)  
(2*) \( Q \prec P \)  
(3*) \( Q \prec \Box P \)  
(4*) \( \Diamond \neg Q \)  
(5*) \( Q, \Delta \prec \Box P \)  
(6*) \( \Diamond \neg (Q \land \Delta) \)  
(7*) \( (Q, \Delta \prec \Box P) \land (\Diamond \neg (Q \land \Delta)) \)  

Assumption  
Assumption  
(1*), (2*), FTP  
Assumption  
(3*), df. of \( < \)  
(4*), modal logic  
(5*), (6*), \( \land I \)  

So, to summarize: we might try to preserve the original argument by defending the transitivity of partial ground, e.g. by denying the would-be counter-examples. Alternatively, we can re-formulate the argument using FTP so as to avoid appealing to the transitivity of partial grounding. Either way, we get the same result: there are some contingent necessity-makers.

§5. Conclusions

The above arguments have shown that the modal status of some necessities are fully-grounded in contingent facts – in other words, there are contingent necessity-makers.

As already mentioned, this result gives us a novel response to the contingentist horn of Blackburn’s dilemma: the existence of contingent necessity-makers proves that contingences can in fact explain, rather than merely undermine, relevant necessities. Similarly, it provides direct counter-examples to recent arguments (from e.g. Hale (2013), Lange (2008), and Hanks (2008)) that contingencies lack the modal chutzpah to be necessity-makers.

Further, a little more than five decades ago, Michael Dummett gave a compelling statement of the two-fold central philosophical problem about necessity: ‘what is its source, and how do we recognise it?’ (1959: 169). Following Hale (2002, 2013), we can read Dummett’s first, ‘source’ problem as demanding an explanation for the existence of (absolute) necessities in general – i.e., an explanation for \( \exists X (\Box X) \). The above results give us an answer: existentials are fully grounded in their true instances, meaning the existential fact that \( \exists X (\Box X) \) is fully grounded in \( [\Box (\text{Socrates is wise} \lor \neg (\text{Socrates is wise}))] \), which is in turn fully grounded in the contingent plurality \( \{ \text{[Socrates is wise]}, \Delta \} \). So, by transitivity, that \( \exists X (\Box X) \) is fully grounded in \( \{ \text{[Socrates is wise]}, \Delta \} \). In other words, this contingent collection of facts is a source of necessity. And while we can only use the indefinite article (because there is more than one ground for the existential), this still means we can rightly say that there are necessities – even absolute necessities! – because of some contingent matters.

This opens up many interesting possibilities regarding the foundations, not only of modality, but of metaphysics in general. Specifically, now that we’ve shown how certain (broadly logical) necessities can be grounded in contingent matters, the idea that the most fundamental layer of reality is composed entirely of contingencies looks a little more plausible. Of course, much work needs to be done to properly support this position – for example, we would have to show that every necessity is either fully grounded in contingent matters or grounded in some other necessity that is so grounded, which looks quite difficult (what’s the contingent necessity-maker for the necessarily having no members?). Even so, the above at least opens up the avenue for a view along these lines.

Regardless, we have here shown that certain necessities are necessary because of some contingent facts – a striking result, in and of itself.23

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22 The reasoning here parallels Hale (2012: 131-2), though he assumes the explanans can only be a necessity.
23 I’d like to thank the academy…
References
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