On Shaky Ground? Exploring the contingent fundamentality thesis
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The past decade and a half has seen an absolute explosion of literature discussing the structure of reality. One particular focus here has been on the *fundamental*. However, while there has been extensive discussion, numerous fundamental questions about fundamentality have not been touched upon. In this paper, I focus on one such lacuna that emerges when we consider the interaction between fundamentality and modality, about the modal strength of fundamentality. More specifically, I am interested in exploring the idea that the fundamentalia are only contingently fundamental – or, put in property-terms, that the property of being fundamental is not a (weakly) necessary property (where a property is weakly necessary iff the things that has the property do so in every world in which they exist).[1] Call this claim the *contingent fundamentality thesis*. While I think this thesis is plausible – indeed, as I show later, it lurks in the unexamined shadows/assumptions of some fairly prominent positions – as far as I can tell, nothing has been said about it. Here, I hope to fix this by giving the thesis a proper airing. In this way, this paper represents a first-pass at exploring not only the modal status of fundamentality, but also offers a starting point for examining broader issues about the relationship between fundamentality and modality.

In particular, after fixing some preliminaries (§1), I'll discuss (§2) three reasons for taking the contingent fundamentality thesis seriously. I then evaluate some objections (§3) intended to show that taking fundamentality to be contingent is wrong-headed; I argue that these objections can be dealt with, leaving the contingent fundamentality thesis at least *prima facie* plausible. I then look at how the thesis relates to views about the possibility of contingently existing fundamentalia (§4), pulling some of the various packages apart, and making the case for adopting what I call the *Shifty Shaky* view. I then conclude (§5) by indicating further areas about the thesis ripe for fruitful future exploration.

To be clear: the main aim of this paper isn't to necessarily convince readers of the truth of the contingent fundamentality thesis. Rather, I want to use this opportunity to *explore* the thesis – look at some reasons for thinking it true, some objections to it, and evaluate how it relates to other debates about the nature of fundamentality. In so doing, I hope to prompt further discussion – not only about the contingent fundamentality thesis, but about the relationship between modality and fundamentality more generally.

§1. Preliminaries & Clarifications

A good place to start is by clarifying what exactly the contingent fundamentality thesis is. As I understand it, the thesis isn't meant to be the claim that *every* fundamental entity is contingently fundamental. This is too strong, as it seems there are *some* entities that are necessarily fundamental if fundamental at all – for example, assuming that Ø is fundamental, then it looks necessarily so. Similarly, if God exists, then she will likely be necessarily fundamental.

Relatedly, the thesis shouldn't be necessitated, as in:

NCFT Necessarily, for some x, x is fundamental and possibly, x exists and is not fundamental[2]

[1] For more on weak necessity, see Kripke (1971), Davies (1981), and Wildman (*ms*).
[2] If you think that fundamentality only applies to facts, then replace 'exists' with 'obtains', and if you think properties can be fundamental, then add 'is instantiated'.

This also seems obviously false, since it's extremely plausible that everything that's fundamental in an abstracta only world is necessarily fundamental; similarly for lonely God worlds – everything that's fundamental there looks necessarily fundamental.

For these reasons, the proper formulation of the contingent fundamentality thesis is a possibility claim, along the lines of:

CFT Possibly, for some x, x is fundamental and possibly, x exists and is not fundamental

This gets at the main point – that is, that being fundamental isn't a weakly necessary property. Further, it also allows the contingentist a bit of wiggle room, in that, even if it turns out that all the actual fundamentalia are (weakly) necessarily fundamental, something like the contingent fundamentality thesis can still be true, provided there's something out there in modal space which is contingently fundamental.

A second point that must be addressed concerns clarifying the metaphysical notion of fundamentality. As it happens, this is a fairly difficult task, for there are about as many different conceptions of fundamentality as there are authors writing about it – and there are a lot of authors.

That said, the standard notion – or at least the one that most of the literature works with – roughly defines fundamentality in terms of metaphysical grounding. According to this standard conception, x is fundamental iff x exists/obtains and there is no y such that y grounds x. This account of fundamentality is discussed by, for example, Correia & Schnieder (2012), Rosen (2010), deRossett (2010), and Audi (2012).[3]

A close, albeit distinct characterization comes from Schaffer (2009, 2010a, 2010b, 2010c, 2013), who also defines fundamentality in terms of 'grounding', but might be better described as defining it in terms of *ontological dependence*. For Schaffer, x is fundamental iff x exists and there is no y such that x depends on y.[4]

I take it that something along one of these two lines is what most have in mind when they talk of fundamentality. Yet these two certainly don't exhaust the options! In fact, fundamentality has also been characterized in terms of: the 'familiar theological metaphor: the fundamental entities are all and only those entities which God needs to create in order to make the world how it is' (Barnes 2012: 484), truthmakers (Cameron 2008a, Heil 2003); structure (Sider 2011); what holds 'in reality' (Fine 2001); metaphysical explanation (Jenkins 2013); and the 'ineliminable' (Raven *forthcoming*). It's also been taken as a primitive, hyperintentional notion (Wilson 2014, forthcoming).[5]

Given this plethora of options, settling upon the 'right' conception of fundamentality looks like a daunting task, and one that, to be frank, falls well beyond the scope of this paper. Thankfully, little of what I go on to say hinges upon adopting any particular conception – from what I can tell, the following discussion remains much the same regardless of how you understand fundamentality. With that in mind, I'll make do with a rough-and-ready characterization, which underlies both the standard and the Schafferian conceptions, that x is fundamental when it sits at the bottom of a hierarchy of ground/dependence, 'grounding'

[3] This account has also been criticized for being too broad, since there might be some entities that are ungrounded but not properly fundamental; see e.g. Dasgupta (2014a, 2014b).

[4] See e.g. Steinberg (2015) for a discussion of how Schaffer's idiosyncratic notion of 'ground' relates to both standard notions of ground and ontological dependence.

[5] In fact, Wilson invokes several of these conceptions when she spells out her primitive notion: 'The fundamental is, well, fundamental: entities in a fundamental base play a role analogous to axioms in a theory—they are basic, they are 'all God had to do, or create'. As such—again, like axioms in a theory—the fundamental should not be metaphysically defined in any other terms, whether these be positive or negative' (2014: 560).

derivative things but being itself ungrounded. This is the notion of fundamentality that I'll be working with. And this isn't because I think this is the only viable conception or account of fundamentality – far from it! Rather, I hope that in formulating my characterization of fundamentality in such generic terms, I leave sufficient space for those with more specific notions to engage with the following discussion, modifying and adapting the details as required.

A third matter that must be addressed concerns what sorts of entities are (eligible to be) fundamental. And, much like with our previous question, *lots* of answers have been given; specifically, metaphysicians have suggested that 'is fundamental' can apply to truths (Williams 2010, Sider 2011), facts (deRosset 2010, Rosen 2010, Fine 2012, Audi 2012, Raven *forthcoming*), states of affairs (Armstrong 1997), concrete and abstract objects (Schaffer 2009, 2010c, Cameron 2008a), properties and relations (Lewis 1986, Armstrong 1997), and logical operators/quantifiers (Sider 2011). In fact, one of the major differences between the standard and the Schafferian conceptions of fundamentality concerns what entities can be fundamental. Schaffer allows his notion of 'grounding' to apply to entities of any category – e.g. material objects, facts, properties, and events –that are at the bottom of his partially ordered hierarchy of being. Meanwhile, those who favour the standard conception tend to split Schaffer's hierarchy into one characterized by ontological dependence, which relates entities of any kind but doesn't necessarily result in a partial ordering, and a hierarchy characterized by metaphysical grounding, which mono-categorically applies to facts, and generates a partial ordering thereof.[6] On this conception, 'is fundamental' primarily applies to facts – specifically, those facts that sit at the bottom of the grounding hierarchy, serving as grounds for other facts, but which are not grounded in anything. Entities from other categories are then said to be only derivatively fundamental, in that they feature in fundamental facts (alternatively, if they feature in fundamental facts of the form [x exists]).

While settling what the exact range of possible satisfiers for the 'is fundamental' predicate are is important, for present concerns I would prefer to remain as ecumenical as possible; in particular, I'd like to avoid making any clearly controversial assumptions about which sort of fundamentality statements are (or are not!) acceptable. Thankfully, we can skirt around the issue (and avoid stepping on anyone's toes) by employing some terminological place-holders. Thus, when talking about the fundamentalia – be they facts, things, properties, or what have you – I'll employ category neutral terms like 'entity'. This allows those of us who are undecided about what kinds are eligible for being fundamental to continue discussing fundamentality's modal strength, while also leaving ample room for those who have a horse in the race to slot in their preferred fundamental kinds where applicable. Further, when it matters, I'll try to make it clear how to extend/apply the relevant point to whatever category is desired.[7]

One final point that must be discussed concerns whether being fundamental comes in degrees. Some have argued that entities can be more or less fundamental (and similarly more or less derivative). In contrast, others favour a 'fundamentalist' view, according to which fundamentality is instead an all-or-nothing thing.[8] Which conception one favours – either fundamentality as quantitative or as non-quantitative – will entail reading the central question in a slightly different manner. First, if we understand fundamentality as purely binary (thus we adopt the latter, 'fundamentalist' view), then we can read the following discussion as concerning whether entities that are fundamental are necessarily so. But if we allow for

[6] See e.g. Fine (1995), Correia (2005), Schnieder (2006), and Lowe (2010) on ontological dependence, and Rosen (2010), Fine (2012), Raven (forthcoming) and Audi (2012) on grounding.
[7] See fn2 for such an example.
[8] See Barnes (2012: 875-9) for a useful comparison of the two views, and McDaniel (2013) for an excellent discussion of degrees of being.

degrees of fundamentality, then we've options: one *can* understand the matter as concerning all entities and their respective degrees of fundamentality (e.g., supposing that x is fundamental to degree n, could x be more or less fundamental?). Alternatively, one can focus just on the absolutely fundamental entities – those entities that possess fundamentality to the highest possible degree – and read the following as concerning whether these elite entities are necessarily elite (e.g., suppose that x is absolutely fundamental, could it be non-absolutely fundamental?). More generally, regardless of what one thinks about degrees of fundamentality, there's a sensible version of the contingent fundamentality thesis in the vicinity.

So, we've said something about how best to formulate the contingent fundamentality thesis, what fundamentality is, what kinds of things are eligible for being fundamental, and what fundamentality is like (in particular, whether it comes in degrees). And, as I hope I've made clear, I am here trying to stay as inclusive as possible. This is partially because I want to avoid any unnecessary disagreements. But, more importantly, this is also because I think that, regardless of one's position on these issues, the question of fundamentality's modal strength is one that's worth exploring. This is a (radically under-explored) point that *everyone* should say *something* about; that alone justifies adopting as neutral a position as possible.

§2. For contingent fundamentality?

For all that, we might wonder why we should care about the contingent fundamentality thesis. What reasons are there for taking this particular view about the modal strength of fundamentality seriously?

The first reason for taking contingent fundamentality seriously is that structurally similar claims have been offered in other debates. For example, priority presentism is the view according to which (i) only present entities fundamentally exist, and (ii) past and future entities exist, but are grounded in present entities (Baron 2015, Lopez de Sa *ms*). So, on this view, Caesar might have been fundamental at the moment when he crossed the Rubicon, but he is derivative now.[9] This temporally variable fundamentality thesis closely parallels the contingent fundamentality thesis.[10] Similarly, several – in particular, Cameron (2007), Miller (2009) and Nolan (2005) – have argued for the contingency of composition, a view that nicely complements the contingent fundamentality thesis.

A second reason is that some individuals have apparently committed themselves to it. Specifically, priority monism is the view according to which the cosmos, the whole all concrete objects are part of, is the one and only concrete object that is not grounded in (or depends upon) any other object. This isn't to say that the smaller parts don't exist – they do! However, they do so derivatively, being grounded in the fundamental cosmos. Thus, in a quip, priority monism says that priority goes from (biggest) whole to part, not the other way around.[11]

In a recent discussion, Schaffer has suggested that the priority monist can allow for big-to-bigger embedding: take the cosmos c, which is actually fundamental, and embed it in a larger whole, c'. In the embedded worlds, c is grounded in c'. Consequently, things can cross the 'categorical divide' between 'fundamental and dependent' (2013: 81) – i.e., being

[9] Or, in terms of facts, [Caeser crossed the Rubicon] was, but is no longer, fundamental. Admittedly, while a rather important man, it's not likely that Caesar is (or was) a fundamental entity. But this doesn't take away from the point that priority presentism is committed to there being a host of entities which are fundamental at one time and derivative at another.

[10] Further, if we assume that individual moments correspond to possible worlds, priority presentism *entails* the contingent fundamentality thesis.

[11] Schaffer (2010c: 44) also claims priority monism is compatible with priority relations going from the cosmos to mereological atoms, then upwards from there to all the non-cosmos wholes; Steinberger (2015), however, raises some potent objections to this.

fundamental is, at least for cosmoi, a merely contingent property. Interestingly, *shrinking cases* also deliver the same result: take *r*, the sub-region of the cosmos that corresponds to my dog Ohle. In the actual world, *r* is derivative. However, there are (quite small!) worlds where *r* exhausts the whole of cosmos. And, in these worlds, since there is nothing larger than *r* – i.e., nothing that *r* is a proper part of – *r* is itself fundamental. Thus we've another case where fundamentality is a merely contingent property.

And there's no problem squaring Schaffer's apparent commitment to contingent fundamentality with his explicit endorsement of the necessity of monism (see e.g. Schaffer 2010c: 56), provided we read the necessity of monism as being phrased in *de dicto*, not *de re*, terms – that is, every possible world *w* is such that, at *w*, the cosmos at *w* is fundamental, where 'the cosmos' is here used as a non-rigid definite description, picking out whatever thing happens to be the cosmos at *w*. This is perfectly compatible with some particular object *a* being the cosmos at *w'* (and hence being fundamental at *w'*) but being a mere sub-region of the cosmos in (and hence derivative at) *w''*.

Of course, priority monism does not entail contingent fundamentality – a priority monist could readily deny contingent fundamentality, perhaps because they endorse a kind of mereological essentialism, such that objects essentially stand in the mereological relations that they in fact do. This would block embedding cases – *c* essentially isn't a proper part of anything, so whatever exists in the embedded world isn't *c* – as well as shrinking cases – *r* essentially is a proper part of the cosmos, so the entity that is the mini-cosmos in the shrunk worlds isn't *r*. But that doesn't take away from the fact that *the* priority monist – Schaffer – seems to endorse contingent fundamentality, which is enough to indicate that it's worthy of consideration.

Interestingly, the contingency of fundamentality is also compatible with priority pluralism, according to which there are at least two fundamental entities, neither of which are the cosmos. In fact, it can help the pluralist handle *de re* modal objections to their position. Suppose that Quarky is one of the actual fundamental entities. Assume that gunky worlds seem possible – that is, it's possible that the material world is such that every object has proper parts. In the gunky worlds, Quarky looks derivative, grounded in its (infinite series of) proper parts. So, goes the objection, because Quarky fails to be fundamental in the gunky worlds, Quarky isn't actually fundamental after all. However, if fundamentality is contingent, this argument doesn't go through: that Quarky isn't fundamental in gunky worlds says nothing about its fundamental status in the actual world.[12]

This highlights a third reason for taking contingent fundamentality seriously: the thesis might prove useful, in the sense that it can be helpful when it comes to deflating or avoiding objections to various positions, as in the previous paragraph.

Taken together, this trio motivate at least giving the contingent fundamentality thesis the time of day. But that's not to say that we've said enough to secure its truth! After all, there might be good reasons for dismissing it as implausible. With that in mind, the next section looks at several possible objections one might raise against the contingent fundamentality thesis.

§3. Fundamentally mistaken about contingent fundamentality?

[12] Cameron (2007: 13) makes a similar point, but in a different context. Further, Schaffer seems to suggest that pluralists should take fundamentality to be contingent, when he says that 'the pluralist who treats, say, a given electron as [fundamental] can grant that it may be divisible into small constituents, and then it would no longer (by her lights) be [fundamental]' (2013: 81). One interesting area I hope to explore in future work is how contingent fundamentality relates to Schaffer's (2010c) modal objection to priority presentism.

The first objection is that priority claims are metaphysical theses, and metaphysical theses are, if true at all, (metaphysically) necessarily true.[13] Obviously, this would render the contingency of fundamentality a non-starter. However, there's no reason to think that all metaphysical claims have such modal force. Perhaps the most famous example of a metaphysical thesis that is only intended to be contingently true is Lewis's doctrine of Humean Supervenience. In this sense, the would-be contingent fundamentalist is in good company.[14]

A more potent objection comes from the tight link between the structuring relations that characterize fundamentality and essence. For example, one might think that Socrates's existence grounds the existence of {Socrates}, and that, if so, this explanatory link must somehow emerge from {Socrates}'s essence; it should, as Fine puts it, 'be part of the nature of singleton Socrates that its existence is determined in this way from the existence of Socrates' (2015: 279). More generally, it's very plausible to say that it is part of the essence of derivative entities that they depend upon whatever it is they in fact do derive from.[15]

But this seems to conflict with contingent fundamentality. For suppose that Tommy the Atom is in fact fundamental, but only contingently so – possibly, Tommy's existence is grounded in the existence of Quarky. If we grant the ground-essence connection, then Tommy *essentially* is grounded in Quarky. And, given that essentiality entails necessity, it follows that Tommy is necessarily so grounded. Yet, if Tommy is necessarily grounded in Quarky, he can't be fundamental since being non-derivative is, at minimum, a necessary condition for being so. Consequently, assuming the ground-essence connection, it looks like we must reject contingent fundamentality.

An immediate contingentist response is to simply reject the ground-essence connection; however, such connections look extremely plausible, and it would be better to avoid such drastic measures if at all possible.[16] With that in mind, a more measured response is preferable. Is there one?

What's problematic for the contingentist is if the relational property *being derivative from Quarky* is essential to Tommy; for this would entail that, in every world where Tommy exists, he's derivative (and hence not fundamental). But what wouldn't be a problem is if Tommy was essentially such that, *if Quarky exists, Tommy is derivative from it*. Tommy's essentially – and hence necessarily – possessing this conditional property doesn't prevent him from being fundamental in worlds where Quarky isn't around.[17] It does preclude Tommy being fundamental in worlds where Quarky also exists, but that's fine – all we need to protect contingent fundamentality is a world where Tommy exists and is fundamental!

More generally, the contingentist can accommodate the ground-essence link by conditionalizing the relevant properties, such that x essentially is such that if y exists, then *x* depends upon it. Possessing these conditional essential properties preserves the ground-essence link (it's still part of Tommy's essence that he's derivative from Quarky *whenever it's around*), but is also perfectly compatible with *x* being fundamental in worlds where y

[13] See e.g. Schaffer (2013: 84, 2010c: 56) and van Inwagen (2002: 28).

[14] A related version of the objection says that the fundamental claims are necessary because they're a priori. However, I take it that not all fundamentality claims are *a priori* – empirical investigation certainly plays a role in determining what is or is not fundamental. Further, as Kripke (1980) and Evans (1985) have shown, that something is a priori doesn't mean it's necessarily true.

[15] Trogdon (2013) also argues for the grounding-essence link.

[16] Though c.f. Fine (2012), Rosen (2010), and Skiles (2015) for some doubts about the essence-ground link.

[17] Note that the use of conditional relational properties is just for convenience; the same point can be made using only relations. This ensures that sparse modalists about essence can make use of this manoeuvre too. For more on sparse modalism about essence, see Wildman (2013, *forthcoming*).

doesn't exist.[18] The upshot is that the essence-ground connection alone doesn't tell against contingent fundamentality.[19]

Admittedly, this conditionalizing move won't be available to those who think that (i) the fundamental entities must be ontologically independent, and (ii) that an entity is ontologically dependent on whatever appears in facts about its essence. However, I see little reason to accept the latter – instead, I'd suggest that an entity ontologically depends on those things that both appear in facts about the entity's essence *and* exist. This leaves room for contingent dependence (and hence contingent fundamentality), and is, I think, a close, contingentist friendly, surrogate for (ii).

There is one potential draw-back to this conditionalizing move: it might turn out that it's part of Tommy's essence that, if the world was populated with some weird ectoplasmic goo, then Tommy is derivative from it.[20] But, one might sensibly object, this simply isn't part of Tommy's essence – Tommy is in no way related to this weird goo! However, note that we only said this *might* be part of Tommy's essence. Nothing said so far commits the conditionalizer to gooey-Tommy worlds, and hence to including such a property in Tommy's essence (indeed, we might take our vitriolic response as a good reason for thinking there are no such worlds). In other words, not all conditional properties will make it into to Tommy's essence. Of course, we'll need some reason for including/excluding the relevant ones, but that's a task at least partially to be determined by our epistemology of essence. And, until we can show that *no* conditional properties make it in, there's space to maintain the conditionalizing reply. So it seems we can preserve the ground-essence link and still be contingentists about fundamentality.

A third objection to contingent fundamentality concerns negative explanations.[21] Grant, for the sake of argument, that tables are derivative, but possibly fundamental. Now, go to any world where tables don't exist. What explains the fact that there are no tables? The standard answer is something like the fact that there are no table-wise arrangements of simples. But, given that tables are possibly fundamental, this isn't a complete explanation – after all, it might be that, even though there are no table-wise-arranged simples, some *fundamental* tables exist. Consequently, given contingent fundamentality, our explanations for the non-existence of entities is compromised.

One line of reply is to say that it's part of what it is to be a table that it be composed of tablewise-arranged simples – so, every table-world is also a table-arranged-simples-worlds – but still maintain that tables are possibly fundamental – that is, there are some worlds where tables exist and are fundamental, along with some worlds where tables are derivative. This would block the above objection, but at the cost of denying the idea that mereological structure mirrors priority structure, since it allows for mereologically complex objects to be fundamental.[22]

An alternative response is to say that this is a specific instance of the more general problem of explaining negative facts, which is a complicated matter for *anyone*, contingentist or not. This looks enough to take the wind out of the objection's sails, leaving it a problem – we need to say something to explain why there are no tables – but not a problem particular to contingent fundamentality.

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[18] This existential conditionalization move isn't available for someone who doesn't allow for contingently existing fundamentalia, like either of the two 'Fixed' views discussed in §4.

[19] A similar move blocks an objection from the *internality* of dependence/grounding: if we conditionalize the relevant dependence/grounding claims to those worlds where both the grounds and the ground exist, then we can preserve internality while allowing for contingent fundamentality.

[20] Thanks to Alex Skiles for useful discussion on this and the following point.

[21] Thanks to Tobias Wilsch for helpful discussion regarding this objection.

[22] Such a move would likely appeal to priority monists.

We can make the final objection clearest via the theological metaphor. When she makes the world, what happens is that God sits down and then brings the fundamentalia into existence – everything then emerges from this fundamental basis. And, included within this derivative explosion, are the modal facts. But, if the modal facts emerge from the fundamentalia, then it's nonsense to ask about the modal status of the fundamenta – the fundamental comes before modal matters even get going. On this conception, the fundamental are like Dasgupta (2014b)'s *autonomous facts*: they are the scaffolding that supports everything else. Or, to draw another metaphor, the fundamental are like axioms in a theory; asking about their modal status within said theory is to fail to understand the role they play in fixing what is or is not true therein. Thus the objection is that the notion of contingent fundamentality rests upon a complete misunderstanding of how fundamentality works.

I must confess that I have a hard time wrapping my head around this objection. For one, those who are happy to advance it must commit themselves to modal gaps – that is, there are certain facts/propositions/things which are entirely amodal. That is, for lack of a better term, really *weird*. Further, it seems like we can make sense of contingent fundamentality: I can ask, of some object that is actually fundamental, 'could this thing have been derivative?' Nothing seems to have misfired there. For these reasons, I'm happy to set this objection aside, and progress onwards with exploring contingent fundamentality. To steal a line from Luther Ingram, if doing so is wrong, I don't want to be right.

The general upshot of this section is that the notion of contingent fundamentality doesn't look *entirely* off-base. Admittedly, the above represent just a small sampling of the various objections one might offer against the idea. But their dismissal, combined with the points made in the previous section, give us a *prima facie* motivation for adopting the position.

With that in mind, the next section examines how contingent fundamentality interacts with another point of intersection between modality and fundamentality: namely, the matter of whether contingently existing (or obtaining) entities can be fundamental.

§4. Contingent fundamentality and contingent fundamentalia: shifting and shaking

The *necessitarian thesis* says that the things that are fundamental necessarily exist – i.e., for all x, if x is fundamental, then x necessarily exists. In contrast, the *contingentist thesis* says that at least some of the fundamentalia contingently exist – that is, for some x, x is fundamental and possibly, x does not exist.[23] So the necessitarian thesis makes necessary existence a necessary, but not sufficient, condition for being fundamental, while the contingentist thesis allows for some necessarily existing fundamentalia; it just denies that necessary existence is a necessary condition for being fundamental.

So, how does commitment to either the necessitarian or the contingentist thesis interact with the contingent fundamentality thesis? There are four possible combinations. The first holds that the fundamentalia consist entirely of necessary existents, and that the fundamental necessarily existing entities are necessarily fundamental. In other words, this position accepts the necessitarian thesis, but denies contingent fundamentatliy. The second package also accepts that only necessary existents can be fundamental, but denies that being fundamental is a necessary property. Thus this view accepts the necessitarian thesis, but also accepts the contingent fundamentality thesis. Meanwhile, the final pair of packages both allow for contingently existing fundamentalia – that is, they accept the contingentist thesis – though they differ with regards to contingent fundamentality. The first denies contingent fundamentality, and holds that while the fundamentalita (can) include contingent existents,

[23] These theses are phrased in terms of existence, but they can be readily altered to accommodate those who, like Williamson (2013), think that all objects necessarily exist by e.g. changing 'exists' to 'is concrete'.

whatever is fundamental is so in every world in which it exists. In contrast, our final package agrees that some fundamentalia contingently exist, but also claims that the grounding structure of the world is similarly fundamental – that is, this position endorses the contingent fundamentality thesis, and takes being fundamental to be a non-necessary property.

We can make the various positions a bit clearer by thinking about them as four options emerging from the two distinctions. To apply some labels: the first distinction is between *fixed* vs *shifty foundations* – the fixer says that there aren't any contingent fundamentalia, the shifter says there are. Meanwhile, the second is between *firm* vs *shaky foundations* – the firmer says fundmentality is weakly necessary, while the shaker says it isn't. We can represent the various combinations with the following table:

Fixed Firm Necessary fundamentalia that are necessarily fundamental	*Fixed Shaky* Necessary fundamentalia that are contingently fundamental
Shifty Firm Contingent fundamentalia that are (weakly) necessarily fundamental	*Shifty Shaky* Contingent fundamentialia that are only contingently fundamental

Are there any reasons to prefer any one of these package views over the others? Let's start with *Fixed Firm*, which adopts the necessitarian thesis but denies the contingent fundamentality thesis. As far as I can tell, there's nothing logically inconsistent about this view. However, that's damning with faint praise, for the view faces some major problems. In particular, it is hard pressed to account for modal variation: if the fundamental entities are the same in every world – which is what this view is committed to – how can the various worlds differ concerning what exists/what these things are like?[24] Suppose that A and B are the fundamental entities. On this view, they both necessarily exist and are necessarily fundamental. So, they exist and serve as the metaphysical foundation for every world. But let C be some merely contingent existent. C must be derivative from some combination of A and B. So, in worlds where C exists, it is grounded in (e.g.) A. But given that A is necessary, every world is an A-world. So why isn't every world also a C-world? We might try to explain the A-but-not-C-worlds by appeal to the existence of some blocker D in those worlds, but that won't help because D must also be derivative from some combination of A and B, and unless we want to say that D is necessary (which, if it's a blocker for C, entails C can't possibly exist), we're stuck with the same problem as regards the existence of D. Without a satisfactory story to tell here, this package looks like a non-starter.[25]

Similar points apply to *Fixed Shaky* that accepts the necessitarian thesis along with the contingent fundamentality thesis. Like its predecessor, this view too faces some significant difficulties. For one, it is unclear how it is any better placed with regards to resolving the modal variation explanatory challenge: while this view allows that the priority ordering of the worlds vary, this looks irrelevant when it comes to e.g. explaining the variable existence/qualitative nature of contingent entities like C. But there's another problem specific to this view: the things that are eligible for being fundamental all necessarily exist, so all of them are available at all the worlds. However, the view also requires modal variation

[24] I suspect that worries along these lines are what motivate many to reject the necessitarian thesis in the first place.

[25] One could salvage the position by saying there's only one possible world; this avoids the problem at the cost of entailing that there is no modal variation, which is a clear case of throwing the baby out with the bathwater.

regarding their priority ordering – e.g. it says that x is fundamental in w, but derivative in w'. Yet what explains this? What explains the different possible priority structures the worlds have?

We can make this problem more acute by thinking about *Shifty Shaky*, which allows for contingent fundamentialia that are only contingently fundamental. This position can explain variation in priority structure in terms of variation in existence: x is derivative in w' because y exists in w' and, in that world, x depends upon/is grounded in y, while x is fundamental in w because y – the thing that x would depend upon – doesn't exist in w. So Quarky the quark is fundamental in the actual world because there's no gunk for Quarky to depend on, but in gunky worlds, Quarky depends upon – and hence is derivative from – a certain glob of gunk. Packages that are committed to the necessitarian thesis have no recourse to this kind of explanation. For them, everything that is possibly fundamental exists in every world, so we can't explain priority variation in terms of existential variation.

While these problems aren't insurmountable, they suffice to push us away from the two necessitarian views and into the waiting arms of the latter contingentist pair. But what might settle the difference between these two?

It seems to me that the key difference between these two packages will be disagreements over certain cases. For example, suppose that some object o is fundamental in world w, in part because, in w, o is mereologically simple – i.e., nothing is a proper part of o in w. Further, it's natural to read this as an existential claim; that is, as something like, it is not the case that there exist some *xx*s such that they are proper parts of o in w. But nothing said so far precludes o's existing in another world w', wherein the *xx*s exist and serve as proper parts of o. Then, assuming that mereological structure and priority ordering are correlated, we get the result that o is merely contingently fundamental, since it is fundamental in w but non-fundamental in w'. *Shifty Firm* denies that such cases are possible. The closest one can come would be to have a qualitatively similar but distinct object o', which is derivative in w'; however, you'd never get *o* itself, since it is necessarily fundamental. Meanwhile, as we saw above, *Shifty Shaky* embraces such cases.

So, should we allow for such cases? As far as I can see, the best case for rejecting them stems from certain essentialist assumptions – specifically, we think it essential to o that it be mereologically simple, and it is this which blocks the possibility of o-as-dependent-worlds (or at least o-as-mereologically-dependent-worlds). However, the mereological essentialist assumption is questionable. Further, as we saw earlier (§3), the shifty shaker can agree to something like this essentialist assumption in the form of o's essentially having a relevant conditional property like being mereologically simple provided the xxs don't exist.[26] Consequently, we've *prima facie* reasons for being shift shakers over shifty firmers. Of course, there is more to be said here, but this suffices for a first pass.

§5. Conclusions

As stated at the outset, the aim here was to prompt further discussion of the so-far-neglected question of fundamentality's modal status, which I have tried to initiate by exploring the contingent fundamentality thesis. In particular, I've focused on clarifying the essential ground work and specified my interpretation of the core thesis, offered a few points in favour of it, replied to some initial objections, and made a first pass at seeing how it relates to another pointin the intersection of modality and fundamentality.

But this is just a rough, exploratory survey of a small part of the terrain – there are many further points to evaluate with regards to contingent fundamentality. We might, for

[26] It might be necessary to complicate the property, adding conditions beyond the mere existence of the xxs to include e.g. that they are arranged in such-and-such a manner. Such complications can be easily added without undercutting the main point.

example, wonder how it relates to debates about the necessitation of grounding relations.[27] Additionally, assessing what the contingentist can say about the modal freedom of fundamentalia would be interesting.[28] The standard assumption seems to be that we're free to combine the various fundamental entities in whatever way we like – that is, they are modally independent – but exactly how to square this with contingent fundamentality looks potentially problematic. Finally, it would be nice to have a proper argument for adopting the contingent fundamentality thesis, something that I've not given here (alternatively, formulating more objections/arguments against the thesis looks like a potentially fruitful area too).

However, these are all projects for another day. For now, I hope that I've convinced some of my readers that the contingent fundamentality thesis – and, more generally, the matter of fundamentality's modal strength – are points worth thinking about.[29]

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[27] See e.g. Trogdon (2013), Skiles (2015) and Leuenberger (2014).

[28] See e.g. Wang (ms).

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