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Response to Leuenberger, Shumener and Thompson

By Karen Bennett

I am very grateful to Stephan Leuenberger, Erica Shumener and Naomi Thompson for their excellent and thoughtful commentaries on *Making Things Up*. I have learned a lot from thinking through their replies. As it happens, they focus on pretty disparate aspects of the book: necessitation, relative fundamentality, and what builds the building facts, respectively. I will thus engage with their remarks separately.

1. Reply to Leuenberger

Leuenberger focuses on my formulation of the necessitation condition. In $\S3.3$, I argue that building-determinism is true. Building-determinism is the view that built entities globally supervene on what builds them plus the rest of the world (more about this in my response to Thompson below). This leaves open whether the full building base of a thing necessitates it, or whether the full building base only necessitates it in conjunction with certain background conditions. If you like: builders¹ in *some* sense necessitate what they build; the question is in *what* sense. I thus distinguish two versions of building determinism: a necessitation one and a circumstantialist one. The former says that the full building base of a thing necessitates it;² the latter

- 1 The label 'builders' is meant to be neutral across ontological categories: objects, events, facts, properties etc.
- 2 This use of 'thing' is also meant to be neutral across categories.

says that the full building base of a thing necessitates it in the circumstances. I claim that the choice between these two versions of the necessitation requirement is a mere matter of bookkeeping, and opt for the circumstantialist one.

Leuenberger raises three objections. The first two concern my formulation of the circumstantialist version: he worries that it is circular, and also that it renders a certain kind of case impossible. His third objection is to my claim that the decision between the two versions of the necessitation requirement is a mere matter of bookkeeping. I'll address these in turn.

The circumstantialist version of the necessitation clause is that x necessitates y in circumstances C, which is 'some to-be-specified set of background conditions that includes neither [built entity] y nor anything that fully builds y' (52). Leuenberger correctly points out that this definition of C makes reference to building. But does this render my characterization of building relations circular, as he claims?

It is not always easy to say when a definition is circular. Certainly, the mere fact that the thing to be defined appears in the definition does not entail that the definition is circular. Here is an example: recursive definitions with a base case. Here is another: a certain kind of definition of some phenomenon taken to be maximal. Suppose I offer the following characterization of some feature *F*ness:

a is an $F =_{df} p$ is true of *a* and no proper part of *a* is an *F*,

where p is an *F*-free proposition stating some requirements that *a* must satisfy. *F* appears on both sides of this definition. But this is an ersatz circularity, because the occurrence of *F* on the right-hand side can be replaced, yielding the logically equivalent and obviously non-circular:

a is an $F =_{df} p$ is true of *a* and *p* is not true of any proper part of *a*.

So one ought not immediately infer that a definition is circular from the fact that the definiens appears in the definiendum.

Nonetheless, Leuenberger is probably right that my characterization is circular as stated. (To run with the analogy, 'builds' appears inside p.) But I think there is a quick fix: go purely modal. That is – for simplicity I here suppress the other clauses of the definition – it was a mistake to characterize building this way:

R is a building relation iff *R* is ... and is such that for all *x* and *y*, if *x* fully *R*s *y*, then \Box (*x* + *C* \rightarrow *y*) for some *C* that includes neither *y* nor anything that fully builds *y*.

What I should have said was:

R is a building relation iff *R* is ... and is such that for all *x* and *y*, if *x* fully *R*s *y*, then \Box (*x* + *C* \rightarrow *y*) for some *C* that includes neither *y* nor anything else that necessitates *y*.

I think it was simply a mistake to put building in there at all. Note that I did so with no discussion; it just kind of happened (52–53). Circularity averted!

I believe this edit also solves the clever problem case at the heart of Leuenberger's second objection.³ Schematically, his case involves the following claims:

a stands in R_1 to c;

b stands in R_2 to c;

 R_1 and R_2 meet my characterization of building other than the necessitation requirement

neither *a* nor *b* alone necessitate *c*;

a necessitates c in circumstances involving b's standing in R_2 to c;

b necessitates c in circumstances involving a's standing in R_1 to c.

Levenberger points out that although it seems plausible that both R_1 and R_2 are building relations, my characterization of acceptable background conditions C rules this out. If we suppose that R_1 meets the characterization, it follows that the circumstances in which a necessitates c – namely, ones in which b stands in R_2 to a – are not circumstances in which b fully builds c. That is, R_2 is not a building relation. *Mutatis mutandis* for R_1 .

The case trades on, as it were, doubling down on circumstantialism. It turns on treating the 'builds' that appears in the characterization of acceptable circumstances C as itself a circumstantialist 'builds'. And that is appropriate. But if we drop that 'builds' in favour of a purely modal characterization of acceptable circumstances, the problem goes away. Let's walk through it again. If we suppose that R_1 meets the new, edited characterization of a building relation, all that follows is that the circumstances in which *a* necessitates *c* – namely, ones in which *b* stands in R_2 to *a* – are not circumstances in which *b* necessitates *c*. Which does not undermine R_2 's chance to be a building relation, and indeed which is correct, by the specification of the case. Both R_1 and R_2 can be building relations.

It is possible that my suggestion creates further problems. But at least we have performed a first round of repair.

Finally, Leuenberger is puzzled by my claim that the choice between necessitist and circumstantialist versions of building determinism – i.e. formulations of the necessitation requirement – is merely a matter of bookkeeping. Indeed, he says that 'whether we are contingentists or necessitists is... closely linked to the question [of] whether there is negativity in the world, as opposed to our representations thereof'. I say he is wrong about this.

³ He frames it as a problem for the Ramsification that he offers, but it is a problem for the characterization as formulated in the book, too; the issue here really has nothing to do with the Ramsification, but with the way I characterize *C*.

Recall that Connie and Mustafa agree that there are no angels. Being sensible folk, they also agree to the equivalent claim that everything is a non-angel. They agree that neither the negative fact nor the generalization is entailed by the 'positive facts', as Leuenberger calls them. Mustafa, who uses the word 'ground' in a necessitarian way, denies that the positive facts fully ground the negative fact and the generalization. But Connie, who uses the word 'ground' in a circumstantialist way, says that the positive facts do fully ground the negative fact and the generalization. Leuenberger claims that this means that Mustafa is ontologically committed to negative facts or totality facts (or something), but Connie is not.

I disagree. Connie faces exactly the same hard questions as Mustafa. These are the well-known questions, dating back at least to Russell, about what grounds generalizations and negative facts, what the truthmakers are for negative truths and so forth. I have nothing of interest to add about these questions except that *Connie faces them too*.

Leuenberger's reason for thinking she does not trades on what I take to be a mistake. Here is the key passage: '[O]ur ontology needs to be rich enough to account for all the phenomena... our ontology accounts for a phenomenon just in case it either includes it, or includes full grounds for it.' So his thought is that because Connie says the full grounds of the negative fact are positive facts, she is not ontologically committed to anything else. But the problem is that no circumstantialist should accept that full grounding is a guide to ontological commitment. No circumstantialist should accept the particular 'link between grounding and ontological commitment' that Leuenberger posits in the key passage above. Instead, circumstantialists should say that our ontology accounts for a phenomenon just in case it either includes it, includes a full building base for it, or is a required background condition for a full building base. Or they should do it modally, in terms of necessitation or supervenience, though it is a little tricky to see how exactly to do so in a way that retains the desired generativity. And I acknowledge that this complexity is a cost of going circumstantialist. Given that building relations like grounding are supposed precisely to be 'accounting for' relations, it is odd to retreat to a modal formulation. But again, this is all bookkeeping. The key point is that circumstantialists don't duck the wellknown, hard questions about what accounts for generalizations or negative facts simply by using 'ground' or 'build' in a certain way.

2. Reply to Shumener

Shumener focuses on my treatment of relative fundamentality, and her discussion touches on a bunch of interesting and underexplored issues. I won't manage to address them all, but I'm glad for the opportunity to explore some of them. In what follows, I will say something about the relation between naturalness and relative fundamentality, the status of clause 5 of MFT, and general relative fundamentality claims.

Shumener treats Lewisian naturalness as a competing account of relative fundamentality – a 'surveying' account in opposition to my 'builder' account. And it is natural (sorry!) to do so, given that many philosophers use the language of fundamentality when deploying the notion of perfect or relative naturalness. It is because people use that language that I talk about 'different notions of \dots fundamentality that are tangled together in the literature' (103).⁴ But there is, I think, a better way to frame the situation. It is not that naturalness and my 'builder' approach are competing theories of the same phenomenon. They are just different notions. I was not as explicit about this as I could have been, but that is what I meant all along. As I argue in the book, I do think Lewisian naturalness can and should be precisified, and I also think the language of fundamentality should be deployed in a way that respects the etymology of the word – namely for the builder notions that I articulate in Chapters 5 and 6 - rather than for naturalness. Further, I also think, contra Sider 2011, that it is hard to see how to open the notion of naturalness beyond the general-ish entities to which it is suited; properties, predicates and kinds. But I do not think that naturalness is useless.

Indeed, it is an excellent question which concept – fundamentality or naturalness – should be deployed where, which concept is suited for which jobs. Shumener wonders about appeals to reference magnetism and assessing the suitability of a property to figure in a law of nature. There is work to be done here, and I invite others to take up the topic. Offhand, I suspect that the notion of 'eligibility' as figuring in reference magnetism is best understood as Lewis understood it: in terms of naturalness. The question of which properties are suited to appeal in laws is a tricky one, but do note that of course naturalness is partly *defined* in nomological terms. (Additionally, as I note in my response to Thompson, I acknowledge that my Chapter 6 definition is not in fact perfectly suited for the case of properties and relations themselves.)

She goes on to say that we do not obviously have any particular building relation in mind when thinking about reference magnetism and laws of nature, concluding that we have in mind a general *more fundamental than* relation, rather than one indexed to a particular building relation. But this is to be expected if naturalness, rather than relative fundamentality, is the relevant concept for thinking about such matters. Besides, it is unclear at best what to conclude from the fact that we don't have a particular building relation 'in mind', whatever exactly that means. It's doubtful that nonphilosophers ever have any particular building relation 'in mind' when they engage in building talk, but it does not follow that there is no particular

⁴ I discuss perfect naturalness as a notion of absolute fundamentality in detail, but I simply set aside relative naturalness as a notion of relative fundamentality with a gesture back towards the discussion of absolute fundamentality (139).

building relation that in fact holds on the relevant occasions, and in virtue of which their sentences express truths.

Let me move on to clause 5. Ah, clause 5. I appreciate Shumener's inclusion of the passage in which I express my attitude towards the MFT definition, especially clause 5. That remains my attitude, and my defence of clause 5 should be taken in that spirit.

Shumener has two complaints. One is that clause 5 is susceptible to a counterexample; the other is that it makes relative fundamentality relations inappropriately external to the relata. I will take up both, as well as adding another. At the end of the day I think all three problems either can be circumvented or are not really problems. Still, I'm happy to admit that clause 5 is not my favourite part of the book, and that the patch I will offer in response to the Xanadu example is a little too epicyclic for my taste.

Let me start with that example, which is indeed a successful counterexample to MFT as characterized in the book. According to clause 5, the neurons are more fundamental than Xanadu, but according to clause 1, Xanadu is more fundamental than the neurons. I think there is a relatively straightforward reply, however. Although Shumener is correct that I cannot appeal to equifundamentality to solve the problem, I can appeal to the following notion of *same-rankedness*, which I hereby introduce. Let *x* and *y* be same-ranked iff_{df} if they are the same number of building steps from the terminus of their building chains.⁵ Same-rankedness is effectively equifundamentality assuming foundationalism; things on non-terminating building chains cannot be same-ranked with each other. So, consider clause 5 with an added sub-clause, different from Shumener's suggestion:

(5d) The members of kind K* are same-ranked.

In Shumener's example, the members of the kind *minds* are not sameranked, because Xanadu is not same-ranked with any physical mind. Clearly, this reply only works for a counterexample that assumes that the relevant chains terminate, but Shumener's does assume that, and in fact it is a crucial part of the counterexample: clause 1 only applies to terminating chains, and that is how she derives that Xanadu is more fundamental than the neurons.

That, anyway, is a superficial response to the problem. Here is a slightly deeper one. Our concept of relative fundamentality is unlikely to be precise enough to deliver clear results about every baroque example that can be devised, and, more importantly, it is unlikely to deliver completely coherent results. It may well be that a clause needed to handle one case yields the wrong results about another. This may not be a problem with the analysis of the concept, but with the concept itself.

⁵ This faces the same issue about how to count building steps as the Toy account of *more fundamental than* that I discuss in the book; I ignore this for present purposes.

Second, externality. Shumener is correct to point out that clause 5 of MFT makes the *more fundamental than* relation external in the sense that whether it obtains fails to supervene on the intrinsic features of the relata plus the building relations between them. It can hold between two things in virtue of patterns of building relations that obtain elsewhere and elsewhen, between other things altogether. But I am not convinced that we should be concerned about this. The question is whether or not we should accept Shumener's contention that 'whether x is more fundamental than y should not concern objects external to x, y, and x and y's building chains'. As she points out, a similar charge is frequently levied at Humean regularity accounts of causation (and, I add, laws of nature), and the proponents of such views typically just say, 'yes, that's my view'.

I'll say a bit more about externality in a moment, but first I want to add a third, related issue with clause 5.⁶ Shumener opens her paper with a distinction between 'builders' and 'surveyors', saying that builders like me claim that 'facts about relative fundamentality are fixed solely by facts involving building relations and their patterns of instantiation'. I certainly talk that way in the book, repeatedly and pervasively. But the fact is it's not quite true, and the reason it is not true is... clause 5. Clause 5 is not purely in terms of building; it invokes *kinds*. And since I see no plausible way to reduce kinds to patterns of building, that means that the MFT characterization is not a pure builder characterization. I thus concede that my rhetoric in Chapter 6 is a little overblown. Still, my main concern was to argue against primitivism, and to offer an account *mostly* in terms of building – and, further, entirely in terms of building plus things I am happy to believe in anyway. It involves no new posits specifically to account for relative fundamentality.

Why is clause 5 so different from the other clauses of MFT – appealing to kinds, and to building relations between other members of those kinds? Because it is designed to allow entities on distinct non-terminating building chains to stand in relative fundamentality relations to each other. Those relative fundamentality relations cannot be accounted for by building relations between the entities – they don't stand in any – nor accounted for by relative distance from the terminus of their respective building chains. What is left? Something like clause 5. (See 158.) The externality of clause 5 is entirely a consequence of the fact that in the relevant sort of case, there is nothing about the entities themselves that can do the work.

So that, really, is the lesson to draw from Shumener's discussion: that relative fundamentality relations can hold externally in her sense is a consequence of leaving open the possibility that metaphysical foundationalism fails. Indeed, I can imagine someone – not me – twisting these thoughts into an argument for metaphysical foundationalism. The gist would be to

6 Thanks to Rob Wesley for pressing me on this.

couple Shumener's insistence that the relative fundamentality facts not be external with the claim that relative fundamentality relations can obtain between entities not themselves building related. A few supplemental premises later, we get the claim that all chains of building must terminate. I myself think this is a lot of power to put in the hands of the ban on externality.

Finally, I want to consider Shumener's suggestion that clause 5 should be taken out of the account of singular relative fundamentality relations, and instead used to account for generalized ones like 'electrons are more fundamental than tables'.⁷ The problem is that, as she notes, doing so does not address the issue clause 5 was designed to address: namely, that relative fundamentality relations can hold between *particular entities* on distinct non-terminating building chains. Still, I do think that the project of making sense of generalized building claims is well worth pursuing. It seems to me that there are two primary open questions here.

One question is which is prior, the general relations or the singular ones. Here, it seems to me clear – though I have little in the way of argument – that the singular instances are prior, that the generalizations about relative fundamentality hold in virtue of patterns of the local relations. (This of course is itself a claim of relative fundamentality, to be understood in terms of building.) This assumption is baked into my approach in Chapter 6: I provide a building-based account of what it is for the singular *more fundamental than* relation to hold, and assume that general claims are, somehow or other, true in virtue of those (see 179). If electrons are more fundamental than tables, that is because an awful lot of particular electron/table pairs satisfy MFT.⁸ I

- 7 Note that Shumener wants a general notion of relative fundamentality in two quite different senses: she wants one that is not indexed to particular building relations (§2), and she wants one that captures patterns or generalities about what is more fundamental than what, rather than localized, particular instances (§5). I take it there is little connection between these two senses of 'general relative fundamentality', and I here mention them together merely to forestall confusion. I am embarking upon a discussion of the latter.
- 8 Better: because an awful lot of particular electron/table pairs satisfy clauses 1–4 of MFT. Indeed, the tricky clause 5 rears its head again here; one might wonder if there is a circularity lurking. I have just said that general relative fundamentality claims hold (at least in part) in virtue of their instances. Yet clause 5 of MFT says that some particular things stand in the *more fundamental than* relation by means of a generalization! So if *a* is more fundamental than *b* because in general, *a*-type things build *b*-like things, isn't this a case in which a singular relative fundamentality relation holds in virtue of a general one, yielding a circle? No, not quite. It's a case in which a singular relative fundamentality relation about *building*. That generalization about building holds in virtue of *its* instances – the same instances that make true the correlated generalized relative fundamentality claim. Here's an *a*-like thing *c* building a *b*-like thing *d*; here's another, here's another and another. Those instances ground both the general fact that *a*-like things build *b*-like things. The fact that *a* in particular gets to be more fundamental

intend these remarks to be very much in the spirit of Shumener's GMFT; we agree on this point.

The other open question is whether there is anything distinctive about building that affects just *how* the general claims are true in virtue of the singular relations. I am not sure of the answer to this question. On the one hand, it seems that there is not. Building generalizations take the form of either universal quantifications or generics, and the hard questions that arise are ones endemic to bridging the gap from singular to general on any topic. There is the question, referred to in my exchange with Leuenberger, of whether something like a totality fact must be in the grounds (or background conditions) of a universal generalization. And there are questions of how to best make sense of generic claims or relations, given that they can be true even when they have very few instances. On the other hand, however, the particular case of singular and general causation has received attention in the literature, with some arguing that the two are entirely different relations having little to do with each other (e.g. Sober 1985, Eells 1991; see Hitchcock 1995 for important discussion). These questions are ripe for further investigation.

3. Reply to Thompson

As her title suggests, Thompson is primarily interested in the question of whether building is built, and if so, how. The question on the table is whether there is anything in virtue of which building relations are instantiated on particular occasions – or, what I intend to be synonymous with that question, whether there is anything in virtue of which the building facts obtain (see 188–89). I devote Chapter 7 of *Making Things Up* to this question, and that is where Thompson turns her critical eye. I want to begin by clarifying what I was really trying to do in that chapter, which will lead me to responses to several of Thompson's claims, particularly in §1 and §3. I will then turn to her criticism of my recombination argument for anti-primitivism in general, and then to her objection to upwards anti-primitivism in particular. Finally, I will say just a bit about the two 'radical alternatives' she offers at the end.

My Chapter 7 draws upon my 2011 paper about what grounds the grounding facts. My intent in the book was to generalize that story into a story about what builds the building facts. But I hereby admit that I was suckered into unclarity by the mellifluousness of that phrase. The problem is that moving from talking about what grounds the grounding facts to talking about what builds the building facts broadens the issue in two ways, corresponding to the two shifts from 'ground' to 'build' (or their cognates). First, it widens the *topic of enquiry* from grounding facts to all kinds of building facts

than b in particular by courtesy, as it were – by the general fact – just means that that particular instance isn't part of the grounds of the general fact.

- instead of only asking, 'is there anything in virtue of which the grounding facts obtain?', we are now also asking 'Is there anything in virtue of which the mereological facts obtain?', 'Is there anything in virtue of which the causal facts obtain?' and so forth. Second, it widens the *possible ways in which such facts might be built*, if they are: they might be grounded, they might be composed and so forth.

I did not flag this two-fold broadening in the book. Indeed, I did not discuss the second broadening at all. I see with the benefit of hindsight that this was because I was in fact only focused on the first broadening, and that I therefore ought not have used that tempting but perilous phrase 'what, if anything, builds the building facts?' I should have simply asked what *grounds* the building facts. I was not intending to make any claims about, for example, what *composes* the grounding facts – something that Thompson, quite reasonably, takes to be on the table. Upwards anti-primitivism is intended to be the view Thompson arrives at towards the beginning of §3: that if *a* builds *b*, the fact that *a* builds *b* is grounded in the existence and nature of *a*. (Or, if grounding only holds between facts, in the fact that *a* exists and is the way it is.)

Thompson goes on to claim that this picture entails that grounding is more fundamental than other building relations, because 'the obtaining of [for example] composition relations requires that grounding relations obtain, but the reverse is not the case'. She further claims that my Chapter 6 analysis of relative fundamentality does not yield this result, which counts as a strike against it. Let me address these two claims in reverse order.

Suppose for the sake of discussion that Thompson is right to conclude that grounding is more fundamental than composition (I will challenge this in a moment). What her reflections reveal is that my MFT characterization of the more fundamental than relation is not well formulated to handle claims about the relative status of properties or relations *in general*. The issue she raises has nothing to do with building in particular. It rather has to do with the fact that properties and relations - unlike, say, objects or facts have instances, and offhand it seems that the way to make sense of one property or relation P_1 being more fundamental than another P_2 is not – to use clause 2 of MFT as an example – that P_1 builds P_2 , but rather that instances of P_1 build instances of P_2 . (What it would be for P_1 itself to build P_2 will depend on one's background view of the nature of properties.) One might try a quick revision - again, focusing on clause 2 for simplicity - by changing the occurrence of 'x' to 'x or its instances', but then one immediately runs into the question: all instances? Most instances? And a can of worms is opened. The issue here is related to the fact that my analysis is in the first instance an analysis of singular, localized relative fundamentality facts, like that some particular mereological fact obtains (179). I have not said much if anything about how generalized relative fundamentality facts should be understood, though I do say a bit more in my response to Erica

Shumener. So while I cannot properly sort this out here, I do acknowledge that it is an issue.

Still, all of that was assuming that Thompson has provided a good case for the claim that grounding is more fundamental than other building relations. But is that actually so? Here, we enter even murkier waters. On the one hand, Thompson is correct that on my view, mereological facts (for example) are grounded. On the other hand, as Thompson herself notes in passing, there is a perfectly good sense in which every grounding fact is built, at least on the (to my ears) natural view according to which 'facts are...structured entities built out of constituent objects and properties' (217, quoted in Thompson's footnote 6).⁹ What to make of this? I confess I do not have anything very illuminating to say here. The building structure of the world is complex – too complex for Thompson to draw the conclusion that grounding is more fundamental than other building relations. And she is certainly right that issues about what builds the building facts are 'further complicated by [my] denial that there is any such relation as "big–B" Building'.

Let me move on. Thompson is unconvinced by my argument for antiprimitivism in general (§2), and also unconvinced by my own preferred version of anti-primitivism, namely upwards anti-primitivism (§4). Let me take these points in turn.

My primary argument for anti-primitivism is a *reductio*: I assume that the building facts are fundamental, apply a modal recombination principle, derive a dilemma, and argue that neither horn is acceptable.¹⁰ Thompson instead thinks that one horn is perfectly fine (her premise 5; my 'negative answer' (190)). This is the horn that claims that there is a possible world w that contains all actual fundamental entities (or their counterparts) other than the building facts. No building relations obtain there, and no actually built entities exist. (If a toy model is wanted, suppose in the actual world @ *a* and *b* compose *c*, and in *w* there is just *a* and *b*.) I say that the pair of *w* and the actual world @ violates a plausible supervenience claim; Thompson says it does not.

Diagnosis? There are *two* supervenience claims in the vicinity, and the case violates one but not the other. Here they are:

- (1) Built entities strongly globally supervene on the distribution of fundamental entities, properties etc.
- (2) Built entities strongly globally supervene on what builds them, or on the rest of reality.¹¹
- 9 Note that this trades on the same kinds of issues as my point about properties on page 188.
- 10 For more discussion of my reliance on recombination principles, see my Reply to Audi, Bliss, Rosen, Schaffer, and Wang in *Inquiry* (Bennett forthcoming-b).
- 11 In the book, I sometimes said that built entities supervene on 'the rest of reality' (e.g. 50), and sometimes said that they supervene on 'what builds them' (e.g. 190). The latter

These are different. For one thing, the second supervenience claim does not assume that there are any fundamental things, but the first does. For another, on the assumption that the building facts are fundamental, they are included in the supervenience base of the first but not the second. And that leads to Thompson's point. Her claim is, in effect, that the relevant pair of worlds does not violate (1), because @ and w fail to be indiscernible with respect to the fundamentals. She is correct about this; after all, in context, we are assuming (for *reductio*) that building relations are fundamental in the sense that there is never anything in virtue of which they obtain. Since no building relations obtain in w, there are huge fundamental differences between it and @.

However, it is clear that the pair of w and @ does violate (2), properly understood. And that was what I intended in the argument on page 190, though I acknowledge that I was not as clear as I could have been; in particular, I did not introduce the distinction between (1) and (2). So the question boils down to: do we have reason to believe supervenience thesis (2)? Yes. It is a statement of the view I call building determinism, which is slightly weaker than building necessitarianism, and which I defend in §3.3.1.¹² In effect, my overall claim in the argument on page 190 against primitivism about the building facts was that those who would take the building facts to be fundamental must either deny building determinism or else allow that built entities are only contingently built – indeed, that they could be unbuilt without changing in any other way. To me, both options remain unpalatable.

Finally, Thompson objects to my upwards anti-primitivism in particular, claiming that it gives the same explanation for facts that should get different explanations. In her example, she throws a cat out of the window, which both causes the window to break and grounds her having done something morally wrong. Because the same event gives rise to – builds – two very different things, 'we should expect' the explanation of the two building facts 'to appeal to something different'. To save on word count, I will go back to letters rather than cat-throwings: the structure of the example is that *a* builds both *b* and *c*, and Thompson says that because *b* and *c* are so different, the explanation of *a*'s building of *b* ought to be different from the explanation of *a*'s building of *c*. This echoes an objection of Dasgupta's (2014: 573) that (as Thompson notes) I discuss on pages 201–2.

formulation is more intuitive, but it isn't quite right given the way I formulate the necessitation requirement (see §3.3.2).

¹² In my response to Wang in *Inquiry*, I concede that my modal recombination argument for building determinism is question-begging. But it does not follow that my modal recombination argument for anti-primitivism about the building facts is question-begging. It simply requires that we have alternate reason to believe building determinism, which I offer in the argument from luck and in the appeal to intuition implicit in my discussion of the zombie argument.

I claim that when the structure of the case is properly understood, it loses all force against upwards anti-primitivism. It is true that upwards anti-primitivism says that if a builds both b and c, then a also grounds the fact that abuilds b and grounds the fact that a builds c. But here is the crucial point: the structure of the case requires that the objector accept that *a* builds both *b* and c. Yet, to reiterate what I said in the book (201), it is dialectically odd to accept that a can build those two quite different things and yet cannot build two quite different building facts. Certainly, any general principle to the effect that extremely different facts (events, things) must have different grounds is going to deliver the result that the first order facts -b and c, or Thompson's having done something wrong and the window's breaking must have different grounds, too. That is, insofar as one has the thought that, for example, 'general metaethical principles' must be part of the ground of the fact that [throwing the cat out the window grounds Thompson's doing something morally wrong], presumably one should also think that the general metaethical principles should also be in the ground of the fact that Thompson did something morally wrong. Mutatis mutandis for the window breaking. To go back to alphabet soup: if one thinks that a alone cannot ground the fact that a grounds b, but must be supplemented with some d, there is matching pressure to think that a alone does not ground b, either – that the true ground of b is a plus d. And if that is correct, what we have is the thought that it is a plus d that grounds b, and a plus d grounds the fact that *a* plus *d* grounds *b*. Upwards anti-primitivism emerges victorious.

Lurking here are interesting questions about what exactly must be included in the grounds of either grounding facts or ordinary grounded facts. I think there are particularly interesting issues about whether such grounds must include general principles or laws, which I discuss in more detail in my forthcoming exchange with Dasgupta in *Philosophy and Phenomenological Research* (Bennett forthcoming-b; Dasgupta forthcoming), and which I hope to explore further in future work. Just to drop a small hint: I increasingly think it is a mistake to expect a univocal answer to the question about the inclusion of principles.

> Rutgers University New Brunswick, NJ, USA kb944@philosophy.rutgers.edu

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