Review of K. Bennett, *Making Things Up* (Oxford University Press, 2017, ix+260pp.)

The topic of Bennett's book is the class of relations that are pointed to, in the writings of metaphysicians but not only there, by such locutions as 'generates' or 'gives rise to' (as applied to "phenomena"), by "talk of one phenomenon being *based in* or *constructed from* another", as well as by "talk of *getting* some thing, or property, or state of affairs, *out of* another" (p. 2). Bennett takes this class to be "unified" by resemblance, in the sense of being "a reasonably natural resemblance class" (p. 20), and she refers to its members as *building relations*. The book consists of a brief introduction followed by seven substantial chapters and an appendix. In the first two chapters after the introduction (i.e., in chapters 2 and 3), Bennett prepares the ground for the rest of the book by providing a detailed characterization of the notion of a building relation. She there opposes in particular the view that there exists a single 'capital-B' building relation from which all others might be somehow derived. In chapter 4, she argues for the interesting and controversial theses that (i) the class of building relations contains causation and that (ii) certain other building relations are "in various ways partially causal" (p. 67). (The appendix deals with six objections to a particular semantic proposal that Bennett advances in connection with this latter thesis.) In chapters 5 and 6, the concept of a building relation is put to work in providing accounts of, respectively, absolute and relative fundamentality. In chapter 7, Bennett develops and defends at length—mainly against Dasgupta (2014)—the thesis that facts as to what builds what are not fundamental (in the sense of being 'unbuilt') but are rather themselves 'built' by the respective building entity: if an entity *a* builds another entity *b*, then *a* in turn builds the fact that *a* builds *b*. In the eighth and final chapter, Bennett argues against 'flatworldism', i.e., the view that everything is 'unbuilt', as well as against the view that metaphysics is "the study of fundamental reality" (p. 231). Much of the material draws on previously published work, namely her three recent articles 'Construction Area: No Hard Hat Required' (*Philosophical Studies*, 2011), 'By Our Bootstraps' (*Philosophical Perspectives*, 2011), and 'There Is No Special Problem with Metaphysics' (*Philosophical Studies*, 2016).

The book makes an important contribution to the metaphysical literature, in particular to the study of fundamentality and (in chapter 8) to metametaphysics. One of the (putative) relations that Bennett treats as paradigmatic building relations, namely that of *grounding*, has seen an explosion of interest in the past ten years or so, and a good part of what makes this relation so interesting for metaphysicians is its perceived relevance for questions as to what is (in some sense or other) *fundamental*.[1] If fundamentality is in turn best understood in terms of building rather than grounding, then the study of *building* would seem to deserve at least part of the attention that has so far been directed at the study of grounding. In any case it is certainly

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[1] Questions might be raised as to whether there exists such a thing as the grounding relation, and also as to whether talk of grounding is as unambiguous and intelligible as its proponents suppose. For present purposes I will ignore such questions.

worthwhile to investigate the connections between grounding and other relations in the general vicinity.

What are those other relations? Bennett's list of paradigmatic building relations includes, besides grounding:

1.   the *composition* relation, which holds between one or more parts and a single mereological whole,
2.   the *constitution* relation, which holds "between co-located objects of different kinds, or perhaps between a co-located mass and object" (p. 9), such as the famous lump and statue,
3.   *set formation*, which relates one or more (or perhaps zero) entities to the set of them,
4.   the *realization* relation that is sometimes imagined to hold between C-fiber firings and instances of pain, and
5.   the relation of *micro-based determination*, which holds for instance between the mass of a table and the masses of its parts.

It may also be instructive to mention the relations that Bennett considers to be *potential* examples of building relations. These include:

1.   truth-making (this relation recurs towards the end of the book, in Bennett's argument against flatworldism),
2.   "whatever relation utilitarians take to generate moral value and obligation from (say) the distribution of pleasures and pains" (p. 13),
3.   "whatever relation generates expected utilities from probabilities and values of outcomes" (*ibid.*),
4.   "the relation of non-mereological composition that David Armstrong claims generates structural universals from other universals, and states of affairs from particulars and universals" (p. 13f.), and
5.   "the bundling relation that bundle theorists claim generates objects from properties or tropes" (p. 14).

Two relations that are (by Bennett's lights) notably *not* among the building relations are those of *supervenience* and *emergence*. It is easy to see why supervenience would not make the cut: Among other reasons (which Bennett cites in a footnote on p. 14), supervenience is reflexive and thereby violates the first of the three conditions that she lays out as necessary and jointly sufficient for being a building relation. For, according to Bennett, a relation R is a building relation if and only if:

(i) R is antisymmetric and irreflexive (i.e., whenever we have xRy and yRx, we also have $x=y$, and we *never* have xRx), and thus asymmetric (i.e., whenever we have xRy, it is *not* the case that yRx),

(ii) R is necessitating, roughly in the sense that "builders necessitate what they build" (p. 32), and

(iii) R is generative, roughly in the sense that "built entities exist or obtain because that which builds them does" (*ibid.*).

From the first condition, if not also the third, we can see that supervenience is a clear example of a non-building relation.

By contrast, the issue of emergence is much less clear. I think it *might* be argued that emergence satisfies the three conditions just listed, as Bennett understands them, but I have found her argument for the conclusion that it is *not* a building relation somewhat puzzling. Her reasoning relies on the following principle, which she labels 'B→MFT':

> [F]or all x and y, and all building relations B, if x at least partially Bs y then x is more fundamental than y. (p. 40)

While this is Bennett's 'official' statement of the principle, it should be noted that her preferred interpretation of it differs slightly from the formulation just given. For she cautions the reader that it may sometimes happen that "a B_1 b and b B_2 a, where B_1 and B_2 are distinct building relations", in which case "B→MFT entails both that a is more fundamental than b and b is more fundamental than a—contradicting the antisymmetry of the *more fundamental than* relation" (p. 42). To avoid this unwelcome result, she proposes to relativize the notion of 'more fundamental than' to building relations, effectively introducing a multitude of more-fundamental-than relations, each of which corresponds to its own building relation. The intended interpretation of B→MFT can accordingly be rendered as follows (notice the subscript to 'more-fundamental-than'):

(BMF)   For all x and y, and all building relations B, if x at least partially Bs y, then x is more-fundamental-than$_B$ y.

We should further note that Bennett explicitly (and in explicit contrast to her account in 'Construction Area') rejects the adoption of this principle as a fourth clause of her account of what it is for something to be a building relation. Her reason is that "generating relative fundamentality" is not "part of that in virtue of which any relation is a building relation" (p. 63).

Let us now return to Bennett's thesis that emergence is not a building relation. Her argument for this claim runs as follows:

> Genuinely emergent properties—if there really are any, which I doubt—are purportedly no less fundamental than their bases. […] Emergent properties are supposed to be *both* somehow built up from and dependent upon the base properties, yet *also* fundamental. That is not consistent with B→MFT, which I am holding fixed. It follows that emergence is not a building relation after all. (pp. 64f., emphases in the original)

To get the inconsistency that Bennett speaks of here, we have to add the (perhaps obvious) assumption that something is ("absolutely") fundamental *only* if nothing is more fundamental than it. That Bennett holds B→MFT "fixed" presumably means that she is not prepared to

abandon this principle; but what about "holding fixed" her account of building? If emergence satisfies the three conditions—listed above as (i)–(iii)—that make up the bulk of that account, then, according to it, emergence is a building relation, and emergent properties will be in the corresponding sense 'built' and hence non-fundamental. Now this appeal to the ("absolute") distinction between the fundamental and the non-fundamental calls for a brief digression.

In §5.2, Bennett gives an account of absolute fundamentality that equates the latter with 'independence' in the sense of being 'unbuilt'. She there leaves open whether this is to be taken in the sense of not being built "in any way at all" (p. 106), or whether it should instead be relativized to building relations. A parenthetical remark in a much later section (viz., §6.1.1) at first seems to resolve the issue in favor of the latter option: the concept of independence, and hence that of absolute fundamentality, should be taken to be "indexed to particular building relations" (p. 163). But Bennett goes on to say that there may also be room for a more general notion of relative fundamentality (though she does not take a definitive stance as to which one she prefers). Presumably, a general notion of *absolute* fundamentality will then also be in the offing. However, Bennett does not advance any proposal as to how this notion might best be made more precise. Instead she offers, in the later sections of chapter 5, a wealth of further discussions that I will here have to pass without comment, concerning, e.g., the issue of whether all building relations are well-founded, of how Bennett's notion of independence compares with David Lewis's notion of perfect naturalness, and of whether we should just take the notion of fundamentality as an unanalyzable primitive. (*Contra* Kit Fine and Jessica Wilson, she argues that we shouldn't. In §§6.2 and 6.8, she likewise argues against two forms of primitivism about *relative* fundamentality.)

To return again to the case of emergence: if the relation of emergence satisfies the three conditions of Bennett's account of building, then emergence should count as a building relation (at least in *Bennett's* sense of 'building relation'), and there will be a corresponding sense in which emergent properties are non-fundamental. Is this the same sense of 'fundamental' in which, as she tells us in the passage quoted above, emergent properties are "supposed to be" fundamental? That seems doubtful. Emergent properties are surely not supposed to be fundamental in the sense that they don't emerge from anything. More likely, one might say that they are supposed to be fundamental in the sense of being 'irreducible' to their respective bases, for instance insofar as there exists no mechanistic explanation of any (or some?) of their various instantiations.[2] Consequently, once the relevant notions of fundamentality are properly indexed to building relations, there does not in fact seem to arise any conflict between, on the one hand, the thesis that emergence is a building relation and, on the other hand, B→MFT conjoined with the supposed fundamentality of emergent properties. But my main point here is that the question of whether emergence is a building relation or not should in the first place be decided by Bennett's account of building, rather than by B→MFT or some other principle. (I take it that this follows from what it is to give an account of building.) If it turns out that the

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[2] Cf. Kim (2006: 551f.).

relation of emergence satisfies the above conditions (i)–(iii), then emergence is a building relation under Bennett's account. And if this means that either B→MFT or the fundamentality of emergent properties has to be given up, then that will just be a consequence of that account. It is thus somewhat puzzling that, in adjudicating whether emergence is a building relation, Bennett relies mainly on B→MFT rather than to consult her own account of building.

So far I have been discussing the principle B→MFT only with regard to the role it plays in Bennett's (very brief) discussion of emergence. But it also plays another, much larger role in her book: namely, that of a crucial constraint for the fairly complex account of relative fundamentality that she develops in chapter 6. Here it is worth noting that Bennett's account has as its *analysandum* not just one notion of relative fundamentality, but rather a multitude of them, each "indexed" to a building relation. (Cf. pp. 162f.) As a result the relevant constraint is, strictly speaking, not B→MFT itself but rather the above principle (BMF).

In the rest of this review, I would like to raise a certain worry concerning the plausibility of (BMF). In the first place it might be pointed out that already Bennett's justification for the 'official' principle B→MFT is not as compelling as one might like it to be. In §3.2.2 (p. 40), she introduces B→MFT as "the most reasonable" "principle connecting building and relative fundamentality", but she does not say *why* she thinks that it is so reasonable. More particularly—if one reads B→MFT in the sense of (BMF)—one might wonder why each single building relation B should be connected to the corresponding relation of *being-more-fundamental-than$_B$* in such a way that, for any entities x and y: if x at least partially Bs y, then x is more-fundamental-than$_B$ y.

For suppose that there are such things as conjunctive properties. Intuitively, the property of *being red* is more fundamental than that of *being red and round*. And what better way to accommodate this intuition in Bennett's framework than by classifying the relation of *being a conjunct of* as a building relation?[3] Happily it seems (at least *prima facie*) that this relation may very well satisfy the three conditions of Bennett's account. For *being a conjunct of* is antisymmetric and irreflexive, at least if properties are individuated in a suitably fine-grained manner; the relation is 'necessitating', at least if we grant that no two properties can exist without there also being a conjunction of them; and it is 'generating', at least provided that the conjunction of any two properties exists in virtue of the existence of its conjuncts. But the rub lies in the first condition: we have to require that the individuation of properties be "suitably fine-grained" because, if any property P is identical with the conjunction of P and P, then any property will have itself as its own conjunct, so that *being a conjunct of* will fail to be irreflexive. We thus have the slightly odd situation that *being a conjunct of* may very well qualify as a building relation, under Bennett's account, provided that the individuation of properties is

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[3] Bennett herself might see things differently. In a footnote on p. 14 (the same that has already been mentioned above) she claims that "surely" *being not-F* is not "built out of" *being F*. I do not know if she would similarly deny that *being red and round* is built out of *being red* and *being round*. But if she does, I do not see how she can accommodate the intuition that *being red and round* is less fundamental than either of *being red* and *being round*.

suitably fine-grained, but will fail to be a building relation otherwise. Yet at the same time, the intuition that *being red* is more fundamental than *being red and round* appears (at least to my mind) quite robust and insensitive to how fine-grained the individuation of properties is taken to be. What gives?

A friend of Bennett's account of relative fundamentality in terms of building may suggest that the first condition of her account of building should be weakened so as to allow for reflexive building relations, but I suspect that the issue runs deeper. For it does not become clear from Bennett's discussions why we should have any confidence in the assumption that *every* philosophically interesting notion of relative fundamentality can be usefully elucidated in terms of a building relation. To be sure, *some* can be thus elucidated. For instance, the notion of relative *mereological* fundamentality can be naturally explicated in terms of composition, which is one of Bennett's paradigmatic building relations. But as the above example suggests, the naturalness of this approach does not obviously carry over to other kinds of relative fundamentality (such as the relative logical simplicity of a property or relation[4]); and so it may be best to investigate these on their own terms.

While I would thus reject Bennett's overall approach to the explication of the notion of relative fundamentality (and am similarly skeptical of her approach to the explication of the notion of *absolute* fundamentality), I am deeply sympathetic to her attempts at prying these notions away from those that would treat them as unanalyzable primitives. More generally, Bennett strikes me as being at her most resourceful and original when she is defending her more controversial theses against the objections of other philosophers, as for instance when, in chapter 4, she marshals a whole cluster of examples in support of her view that some building relations are 'causally tainted', or when she defends her 'upwards anti-primitivism' against Dasgupta's objections in chapter 7. It is in these—it must be said, fairly specialized—discussions that I think her book truly shines, and so I would recommend it without reservation to anyone interested in the relevant contemporary debates.[5]

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[4] A given property or relation *P* may be said to be *logically simpler* than another property or relation *Q* just in case *P*'s degree of logical complexity is less than that of *Q*. I have suggested an explication of the notion of degrees of logical complexity in my (2016: 36n.).

References

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