Jacovides may be right about much of this, but his argument for it, which I have only briefly sketched, leaves a few possibly important questions unaddressed. First, what about phenomenological surprises? If, as it seems, they are commonplace (think of the first time someone who has no idea what to expect looks through a stereoscope, or think of a skeptical student of Locke's theory who to test the theory examines what he sees directly when he looks at a globe and *much to his surprise* becomes convinced that Locke is right), then it must be at least an overstatement to say simply that people 'see what they expect to see' (148). Second, what of the popular view that people see not what they *expect* to see, but what they *want* to see? Is this view simply false? Or, if it is part of the truth, how do wanting and expecting interact in affecting what people see? Finally, why did the expectations of theorists of vision change over the centuries in the ways that Smith and Jacovides say they did. In other words, what happened in the late nineteenth century, or early twentieth century, to usher in current philosophical views of the phenomenology of seeing? And why didn't the views of the phenomenology of seeing held by twentieth-century psychologists change in the same way?

As should be clear from this brief survey of Jacovides's book, in addition to explaining what Locke's account of primary and secondary qualities was, what led him to propose it, and how he tried to justify it, Jacovides *assesses* Locke's proposals, both from the point of view of what was known in Locke's time and from that of what has been learned since. Throughout his book, Jacovides's scholarship is impressive, his writing clear and concise, and his assessments of Locke original and engaging. In sum, his book, while impressive as intellectual history is much more than intellectual history in the conventional sense. All in all, a remarkable achievement.

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Making Things Up
By Karen Bennett.
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This – in some philosophical circles – is a long-awaited and eagerly anticipated book. In part, this is because a number of earlier draft

chapters were circulated and discussed in reading groups (leading to a higher than usual rate of citations of 'Bennett, forthcoming' or the now-incorrect 'Bennett 2013' before the manuscript had even been finished), although the enthusiasm can also be attributed to the energy with which Karen Bennett herself has presented her ideas in numerous locations worldwide, as the acknowledgements list attests. Given all this prior enthusiasm, Oxford University Press have let the finished book slip onto the market rather quietly.

'Why the interest?' one might be prompted to ask. Part of the answer to this question lies in the unprecedented generality with which Bennett has decided to pursue metaphysics, which has the result of making the book relevant to a wide range of researchers in an area of philosophy where specialisation is the norm. Furthermore, if successful, Bennett's is a project which would provide a theoretical and conceptual structure with which to compare metaphysical theories in something more than an intuitive way.

Bennett's central theme is what she calls 'building relations', where *building* is a general metaphysical concept intended to capture the many and various ways in which philosophers talk about an entity or entities being made out of or derived from others, including *composing*, *realizing*, *constituting*, *producing*, *giving rise to,* and others which are not as obvious such as *set-formation, causation* and *determination*. Tables, trees and other ordinary middle-sized objects are composed out of atoms; non-moral properties determine moral ones; physical properties realize mental ones; a particular instantiating a property constitutes a state of affairs or a fact; and the existence of Socrates determines the existence of the singleton set which contains him.

One does not need to accept these specific metaphysical claims in order to agree that their use is so widespread in philosophy that it is difficult to see how we could entirely do without them. Nevertheless, some 'flat-world' philosophers argue against the prevalent ontologies of hierarchical levels in favour of a metaphysical account of the world in which nothing is built, and Bennett argues against their views later in the book. If her arguments against the flat-worlders are successful, we require some building relations in order to do metaphysics, they are necessary to the system; whereas if her arguments there are less than fully convincing, building remains a widespread phenomenon in the majority of metaphysical theories. For now, I will assume with Bennett that at least some building is plausible.

Building relations can be characterized by their having a shared set of formal and metaphysical features: they are asymmetric and

irreflexive; given certain background conditions, it is necessary that the entity doing the building (plus the circumstances) bring about the built entity (or entities); and building relations license explanatory and generative claims to the effect that the built entity exists *in virtue of* the entity doing the building (60). However, the relation is not essentially explanatory and it is not scrutable *a priori*: perfect knowledge of some entities and their circumstances does not permit one to predict what (if anything) they build. Notably, this characterization of building relations excludes two commonly discussed relations, *supervenience* and *emergence*: the former on the basis that it lacks the formal characteristics of being irreflexive and asymmetric and is not a generative relation (although it is often intended as such),[1] and the latter (presumably) because it is just *too* generative, almost magically so.

One might quickly assume that *building* is the inverse of what others might be happier to call 'grounding', but Bennett rejects this terminology due to there being several specific uses of 'grounding' (as a relation which holds only between facts, for instance) with which she does not want her discussion confused. This terminological shift seems a wise move, if it catches on, because the literature on grounding already requires significant untangling in order to determine exactly what kind of relation is intended. Nevertheless, if one considers grounding in a general enough way as being the way in which some entities ontologically depend upon others, building *is* the inverse of grounding, and so some of Bennett's discussion of the relevant current literature is about research into grounding and she later talks specifically about grounding in Chapter 7.

The book is neatly arranged: after setting up the intuitive motivation for her project, Bennett argues for the existence of a resemblance class of building relations in Chapter 2, and then characterizes the formal and metaphysical properties of such relations in Chapter 3. Chapter 4 is spent on the potentially contentious issue of whether causation is a building relation (Bennett argues that it is), while Chapters 5 and 6 discuss absolute and relative fundamentality in light of the discussion of building which has gone before. In the latter two chapters, Bennett moves into defensive mode: first, arguing that building is itself built and defending her account against some criticisms from Shamik Dasgupta and Kit Fine; and secondly, defending non-fundamental entities and her hierarchical conception of reality from supporters of the flat-world ontology

[1] Supervenience sneaks back as an example of building on page 62, presumably in error.

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who reject the notion of building completely. Bennett writes lucidly with plenty of examples, which makes *Making Things Up* a comparatively easy read for a book which is attempting to capture some of the most abstract and general notions in metaphysics. But she has been let down at points by the proof reading at Oxford University Press which has left some philosophically relevant mistakes (such as unclosed brackets and missing clause in a conditional (132)) and some words which I have to presume are errors, rather than neologisms which she hoped to coin (such as 'aity' and 'sere' (216)), although the reader can guess at the intended meaning.

Will '*building*' catch on though? This depends upon how useful a concept it is. Bennett presents her unity thesis that different building relations are all members of a philosophically useful resemblance class – a philosophical natural kind – but stops short of the claims which might have made her work really significant: that building relations are all instantiations of one general relation, *Building* (with a capital 'B'), or that they are all instances of one member of the class, the most fundamental building relation (as it were).[2] Such monism would licence closer comparisons between theories which relate the same sets of entities in different ways, and warrant the claim that theories in which Xs *produce* Ys, and those in which Xs *realise* Ys or Xs *constitute* Ys are in some sense ontologically equivalent to each other. The proponents of such theories would not be in competition if the relations they postulated are all instances of one general building relation and should lay down their arms in recognition of the fact that their theories all say the same thing. A major advance in metametaphysics would have been made.

However, Bennett stops short of espousing this idealistic monism about building relations because she thinks that it is unsustainable: generalist monism about building would violate both the asymmetry of building relations and their extensionality, and this is enough, Bennett thinks, to recommend abandoning generalism. The former problem is that distinct building relations might hold between two particulars *a* and *b* in both directions, such that B_1ab and B_2ba, but if B_1 and B_2 are instances of (or are reducible to) a general Building relation B, then the instantiation of Bab and Bba entails that Building fails to be asymmetric. Preempting the characterization of building which she argues for in Chapter 3, Bennett argues that this is unacceptable. But is it even possible? Bennett gives two

[2] We could also call this most fundamental relation '*Building*' (perhaps with subscripts to distinguish them) but for the purposes of this review I will ignore the distinction between the two.

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examples (27–8) concerning priority monism and emergence but admits that they are both contentious. To take the first example: in Schaffer's priority monist ontology,[3] the whole world is ontologically prior to my coffee mug (for example) and yet, Bennett points out, the parts of the world such as the coffee mug somehow compose the whole; we have a different building relation holding between the mug and the world in each direction and so a general relation would violate asymmetry. But this example is problematic, not simply for the reason which Bennett admits that in one direction the relation is only a case of *partial* building, since the coffee mug only partially composes the world (only everything in the world composes the world). The second difficulty lies in whether Schaffer and his supporters would accept the existence of a composition relation of this variety at all within his ontological system alongside the relation in virtue of which the mug depends upon the whole. The two relations do not belong in the same ontology, unless one is somehow derived from the other, in which case the problem of asymmetry violation does not arise. The second example, taken from Kim's example of downward determination,[4] features emergent properties which in some way determine the micro-physical properties of the parts of entities which determine them (28). There are difficulties with the example in this case too and not simply because of the problem of partial determination which also afflicted the first example: It is not obvious why the second example is one in which asymmetry is broken because Bennett has already ruled out emergence from being a building relation, entities which behave as Kim describes are not *built*. Thus, neither putative example of symmetric *Building* does its job very well and it is not obvious that there are other ones to be had. While I know of no firm way to rule out the possibility that a general *Building* relation could be symmetric, it is not clear that Bennett should feel required to allow for it in the formulation of her account, and cite it as a reason to reject *Building*.

The second problem with *Building*, that a general relation of *Building* would violate extensionality, is also not very compelling. The problem here is that the same entities (a and b, say) could build distinct entities, the set $\{a, b\}$ and the fusion $a + b$, for instance, and this would, according to Bennett, violate extensionality. However, whether this really does violate extensionality depends

[3] Jonathan Schaffer, 'Monism: The Priority of the Whole', *Philosophical Review* **119** (2010): 31–76.

[4] Jaegwon Kim, 'Making sense of emergence', *Philosophical Studies* **95** (1999): 3–36.

upon how one thinks about the problem and specifically requires Bennett to preempt the conception of building relations which she favours. This is not a case of distinct building relations holding between the same relata, which would, if we accept *Building*, be a case of more than one instance of a relation holding between the same relata simultaneously, because the relata of the fusion relation are distinct from the set-formation one. Rather, it is a case of the same entities Building two distinct entities – a fusion and a set – which does not seem to be a problem, although it may violate the scruples of those of us brought up on the restriction which is partially definitive of supervenience that there should be no change in less fundamental entities such as mental properties without a change in more fundamental entities (the physical, for example). The examples which Bennett gives would violate that, but they are only a problem for the extensionality of *Building* if one presupposes that all that matters to what is built is the more fundamental relatum and not what is built. Even then, it is not clear whether we should care about these counterexamples anyway: in the cases where building relations are transitive, one entity (or set of entities) builds lots of different entities, and we are not unduly worried about that. For instance, if *a builds b*, *b builds c*, *c builds d* and transitivity holds, *a builds b*, and *c*, and *d*, but we do not regard this as problematic. It is not obvious why we cannot have cases where *a Builds b* and *a Builds c* but b and c are not related to each other in a very interesting way except that in virtue of which they are built. Furthermore, Building's close cousin *grounding* is often considered to be non-extensional, sometimes even hyperintensional.

The arguments against a general account of *Building* seem less than compelling, which leaves the way open to what would have been a more interesting claim about the generality of Building which Bennett (having rejected it) does not explore. As a result of this choice, much of the book makes claims which are indexed to one relation or another – such as *a builds*$_1$ *b* and *a builds*$_2$ *c* – which does leave Bennett open to criticism about the scope and purpose of her project, and to some extent vindicates Jessica Wilson's earlier criticism that what is interesting about grounding is all the different kinds of relations which it attempts to subsume.[5] Nevertheless, there are some interesting similarities between the members of the resemblance class of building relations which allow Bennett to clarify related notions

[5] Jessica M. Wilson, 'No work for a theory of grounding', *Inquiry* **57** (2014): 535–579.

such as fundamentality and relative fundamentality in a metaphysically useful way.

There is a more general methodological point to be gleaned from the discussion of the last three paragraphs however: which possibilities ought we to take seriously in the formulation of a metaphysical or meta-metaphysical theory? This underlying methodological issue recurs when Bennett formulates her technical claims about building with apologies to the proponents of plural logic for not putting her point their way (which she does so several times), and later in the book when she characterizes relative fundamentality without allowing herself to presuppose that there is a fundamental level of reality, a move she makes because she cannot think of a good argument that there is such a fundamental level and so cannot rule infinitude out. But this allowance hugely complicates her picture and although it is good philosophical practice not to accept a claim without argument, it would have been interesting to see the two options considered equally, rather than the theory primarily formulated for an infinitely complex world. The strategy of trying to ensure that one's theory is consistent with as many background assumptions as possible increases generality, but in this case it makes the theory more complicated and the book less accessible, as well as appearing to be hostage to some minority views in metaphysics. Furthermore, this illustrates the effect of a certain style of argument which is popular in contemporary metaphysics where a simple and fairly general metaphysical theory is rejected on the grounds that it would be false were the world to be X-way, where X is a fairly counterintuitive[6] and implausible possibility, such as being entirely empty, or infinitely complex, or gunky. The minority views may be right – the world may really be X-way – but it should sometimes be open for the metaphysician to announce that those who think that the world is X-way can formulate their own theory. Bennett may not be able to find a good argument for the world having a fundamental level, but nor is there (to the best of my knowledge) a good argument that it does not. It is not clear where the burden of proof lies and so sometimes a philosopher should be allowed to choose. Moreover, the search for true generality is ultimately doomed, since for every possibility allowed for by a theory, there is one missed out: what if classical logic is false, for instance? Shouldn't a general account of ontology also allow for *that*? I do not mean here to seriously suggest that Bennett's book is a fault because she accepts the law of

[6] Obviously, such a view is often not counterintuitive to its proponents, and (counterintuitive or not) it may be that their view is correct.

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the excluded middle and has not taken the views of intuitionist logicians on board. Rather, I mean this as an informal *reductio*: sometimes Bennett makes concessions to her critics which are not required, or answered criticisms which are fairly weak to begin with, and so a lot of discussion goes on in footnotes or asides. This may not be her fault, but might be due to an overly zealous review process, or else to the ample criticism to which she has willingly subjected her account over a number of years. The aim was for as general an account of building as possible, but it is not possible to please all the people all the time (especially when those people are analytic philosophers).

On a related note, there are directions in which Bennett could have developed a more general theory of building which she does not exploit. For instance, she formulates her ideas strictly within the confines of realist metaphysics: building relations are real relations, brought about by real entities. But this is not the only way in which one could view building. Idealists, for instance, may postulate relations which conform the formal characterization of a building relation within the confines of their theories. So too might conventionalists or phenomenologists. The scope for Bennett's account is wider than she allows and could be relevant to a broader range of philosophers. Perhaps this is a fruitful area for further investigation, now the groundwork for talking about building relations has been laid.

One aspect of the book which adds significantly to the debate is the deflationary account of fundamentality which Bennett provides. Absolute fundamentality is simply *not being built*; while relative fundamentality (one entity's being *more fundamental than*, or *less fundamental than* another) is accounted for in terms of building relations too. Importantly though, they are not the same relation: while *being more fundamental than* is transitive, building relations are not all transitive. There might be some detractors to the account of absolute fundamentality which Bennett defends in Chapter 5 however. According to her, absolute fundamentality is captured by independence, the fact that an entity is not built, and causation is also a building relation, but one might conceive of a world in which a class of discrete, causally interdependent entities were brought into existence together and thereby built everything else. Such an ontology might be one of dispositional properties or powers, where each power causes others. In an extremely simplified case, let us say that there are properties a, b, c and d where *a causes b*, *b causes c*, *c causes d* and *d causes a*, giving us a circle of building relations where nothing is unbuilt. (A similar ontology might be

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developed using the Buddhist notion of dependent origination.) On Bennett's account, a, b, c and d are caused and therefore built, but one might want to disagree with her about this: if these entities are the basic entities of the world from which everything else is built, it seems that their causally interacting with each other should not disbar them from counting as the fundamental entities of that world. Bennett would have to disagree with this view, however: in this world everything is built and nothing is absolutely fundamental. Moreover, she might add, the powerful properties in such an ontology would also fail to be absolutely fundamental because they violate another condition on absolute fundamentality which she accepts: that absolutely fundamental entities are those which can be freely recombined with each other and the rest of reality.[7] However, the 'free modal recombination' constraint upon absolute fundamentality seems to simply beg the question against the fundamentality of an ontology of entities such as powers or dispositional properties which bear causal relations to each other essentially, and should perhaps be discounted.[8] Furthermore, while Bennett may want to preserve our intuitions and assert that the basic four properties of my example are comparatively more fundamental than anything else, it is not clear whether this is acceptable given the causal circle in which they find themselves. Why, for instance, would an entity e which was produced by d be less fundamental than any of a-d when each of these properties' relative fundamentality is being measured by an infinite causal chain? I suspect that some may find this a counter-intuitive way to think about such causally related properties and prefer to think of them as all equally and absolutely fundamental. This is not an option in Bennett's account however, a failure which one might take to count against it. (Note too how I've surreptitiously sneaked in another term, 'basic', to describe these properties, which suggests that if they are not absolutely fundamental, another related notion will be co-opted to do the job instead. This suggests that her deflationary account of fundamentality might require additional concepts in order to capture our intuitive understanding of fundamental entities.)

[7] See also Jonathan Schaffer, *op. cit.*, 40.

[8] This restriction on modal recombination is one reason why Schaffer rejects a conception of properties which have their causal roles essentially. See, for example, Jonathan Schaffer, 'Quiddistic Knowledge', *Philosophical Studies* **123** (2004): 1–32.

Bennett's account of building is a metaphysically useful way of organising the seemingly disparate collection of relations which philosophers invoke to capture the idea of some entities being produced or being ontologically determined by others. She may run into opposition from several sides though, some of which she attempts to deal with the text. The first controversy arises from the question of whether building relations are themselves built, and if so, how. Bennett plausibly argues that they are, relying again on the constraint that unbuilt entities are open to free modal combination but that it is implausible to think that two worlds could be identical in monadic fundamental properties and yet one contain building relations which the other lacked (190). Moreover, to avoid regress, building must be an one-sided relation, its existence determined by the entity or entities doing the building: *b builds c* in virtue of the intrinsic nature of b (and perhaps also b's extrinsic properties), a view which Bennett calls 'upwards anti-primitivism' to contrast with the accounts of Dasgupta and Fine to which she raises objections.[9] I will not go into the details of these arguments here, but what seems to mark the primary difference between Bennett's view and the latter accounts is the importance of what they call 'grounding' as an explanatory relation. For Bennett, building is no such thing (although the instantiation of a building relation might licence an explanatory claim), but there seem to be, as she notes (212), some deep differences of metaphysical opinion at work which underpin the viability of the different accounts. As such, despite the prima facie similarities, it is not clear whether the various proponents of grounding or building have a unified conception of a unique metaphysical relation in mind.

Bennett's account of building relations is an attempt to generalise about metaphysical theories and to capture the notion of fundamentality in a deflationary way; and this it does very well, as long as one views reality as being hierarchical. But what if one does not? If anyone gets short shrift in this book it is the flat-worlders, those who maintain the view that there are no relations of ontological dependence between entities and that everything is absolutely fundamental (except that 'fundamental' is not really the right word to use). It is a view which Bennett has elsewhere described with the colourful

[9] Shamik Dasgupta, 'The possibility of physicalism', *The Journal of Philosophy* **111** (2014): 557–92. Kit Fine, 'Guide to ground', in F. Correia and B. Schneider (eds), *Metaphysical Grounding: Understanding the Structure of Reality* (Cambridge: Cambridge University Press, 2012): 37–80.

technical term 'crazypants'.[10] But are there any such people? Bennett has no examples of full-on flat-worlders, those who deny the existence of all relations of ontological priority, but she still argues against those who hold that non-fundamentalia do not exist or are less than fully real. (She is probably correct to point out that most would-be flat-worlders accept some relations between ontological *categories*, if they do not accept building relations between entities in the natural world.) However, there is an omission in her discussion at this point, since she concentrates on positive arguments for flat-worldism and does not consider arguments such as those by John Heil.[11] Heil supports his flat world with a direct argument against the hierarchical view on the basis that it results in problems of exclusion for non-fundamental causes, generating problems with mental causation and the like. Moreover, he attempts to avoid ontological dependency relations between categories, claiming that what we take to be distinct categories are abstractions from one stuff. One might think that Heil leaves a lot of questions unanswered – such as how exactly propositions about seemingly non-fundamental entities turn out to be true – but his argument that the hierarchical worldview leads to metaphysical problems is worthy of consideration at this point. Bennett may think that she solved this problem in earlier work, of course,[12] but some repetition here would have made for a stronger case.

There is much to recommend *Making Things Up* for both specialist metaphysicians and interested lay people. As Bennett succinctly points out, its central topic is actually the kind of philosophical question which random people on aeroplanes can understand (102) and in order to answer it she presents a plausible and sophisticated theory. She brings together a host of related themes in contemporary metaphysics and metametaphysics, uncovering some deep divisions along the way, and potentially provides a useful way in which to understand ontological theories in more general terms.

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[10] Karen Bennett, 'By our bootstraps', *Philosophical Perspectives* **25** (2011): 28.
[11] John Heil, *From an Ontological Point of View* (Oxford: Oxford University Press, 2003).
[12] Karen Bennett, 'Why the Exclusion Problem Seems Intractable and How, Just Maybe, to Tract It', *Noûs* **37**: 471–97.