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Taking causing out of Bennett's *Making Things Up*

Jonathan Schaffer

Rutgers Department of Philosophy, Rutgers University, New Brunswick, NJ, USA

ABSTRACT

In *Making Things Up*, Bennett defends the intriguing idea that causation should be included among the building (grounding) relations. I critique Bennett's arguments for inclusion, and claim that inclusion distorts her own treatments of causation, relative fundamentality, and absolute fundamentality. Instead, I argue for treating causation and grounding as separate species of generative, explanatory difference-making.

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Properly understood, then, the claim that causation is a building relation ought not be all that surprising or controversial. It is just the claim that there is a resemblance class containing both causation and vertical building as members. And that seems more or less obvious: of course there is a *broad* class of asymmetric irreflexive generative-talk-licensing necessitation relations that includes both causation and (putatively) noncausal determination relations like grounding or composition (Bennett 2017, 69).

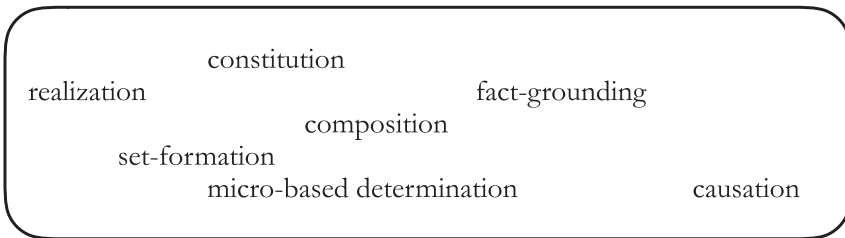
1. Introduction

Bennett's *Making Things Up* (MTU) (2017) is readable and profound, breezy and brilliant, witty and wise. It develops a novel and insightful 'building' framework for thinking about issues of grounding, dependence, and related structuring notions at the core of metaphysics. It is excellent work, and I recommend it to anyone – insider or outsider alike – interested in contemporary analytic metaphysics.

There is much that I agree with in MTU, and so much that I want to discuss. But I will focus on Bennett's claim (MTU, ch. 4) that causation is a building relation. I do so partly because this is a really cool and original

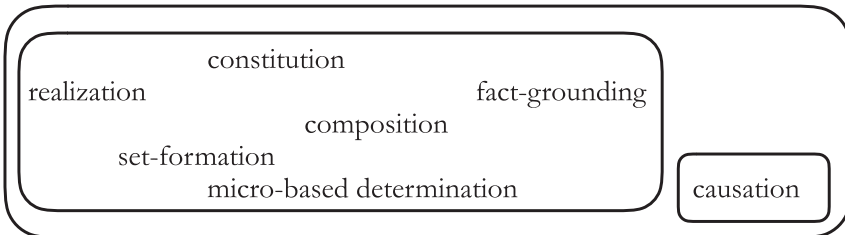
In a nutshell, I see Bennett as putting forward a 'one big box' picture that groups a wide range of relations into the 'building' family:

Bennett's building relations



In place of Bennett's 'one big box' picture, I prefer a 'nested boxes' picture that recognizes one big group of explanation-backing difference-making relations which includes causation and Bennett's other building relations, but still sub-divides causation from the others:

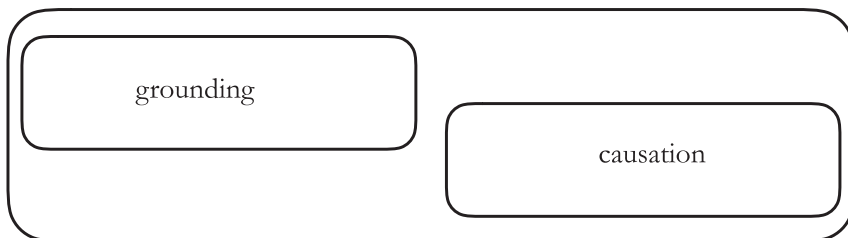
Schaffer's explanation-backing difference-making relations



I am open to further explanation-backing difference-making relations, which would constitute further inner boxes. That is not at issue. And I would label the leftmost group 'grounding', understood in a way that is not limited to fact-grounding. So I would equally draw the nested box

picture as:

Schaffer's explanation-backing difference-making relations, redrawn



I am not sure if Bennett would disagree with my nested picture, or regard it as just an elaboration of her own. (Indeed she (MTU, 71) labels something like this as 'just a terminological issue'.) My criticism of Bennett on the role of causation is not that she lumps it in with the difference-making relations, but rather that she does not acknowledge the need to split it off from grounding, in ways that distort her treatments of causation, relative fundamentality, and absolute fundamentality.

The issue in my terms: If we say that causation is a grounding relation, then my nested box picture collapses into Bennett's one box picture. So the issue in my terms is *whether causation is a grounding relation*, or should be seen as a separate species of difference-making.

The issue in Bennett's terms: If we start from Bennett's one box picture, there are at least two ways to get to my picture. We could keep building as the outer box, but say that there are two separate species of building. Or – as I think is more fitting – we could pull causation outside of building, and then draw a bigger box around both for generative, explanatory difference-making relations. Labels notwithstanding, either way gets one to a nested box picture. Taking the second route, the issue in Bennett's terms is *whether causation is a building relation*, or should be seen as a separate species of a larger genus. In short, the issue is over:

Causing is Building: Causation is a building (/grounding) relation.

I think this is an apt way to see the issue, insofar as Bennett's central claim at issue (MTU, 68) is 'whether it is right to insist so firmly on the distinction between horizontal and vertical – between causal and noncausal – determination'. Bennett continues: 'I say no.' I speak for the 'yes' side.

Terminology: 'Building' is Bennett's new term, while 'grounding' is the literature's older term. I think that Bennett's 'building' is basically

equivalent to my ‘grounding’. I will mainly use ‘building’ when discussing Bennett, and ‘grounding’ when presenting my views, but I take them to be largely interchangeable.¹

In §2 I will introduce Bennett’s idea of the building family, in §3 I will discuss Bennett’s arguments for *Causing is Building*, and in §4 I will argue that she pays a steep price. Finally, in §5 I will conclude by comparing Bennett’s one-big-box and my nested boxes pictures.

2. Bennett on the building family

For Bennett, the building family is a resemblance class of relations, grouped around notions (*MTU*, 2) of ‘what “gives rise to”, “makes up”, or “generates” another, or, to switch directions, about what some phenomenon is “based in”, “constructed from”, or “built out of”’. She begins (*MTU*, ch. 1) with a budget of six starting point examples of relations that seem to characterize how “the “big” [is] *built up from* “the small””, namely composition, constitution, set formation, realization, micro-based determination, and fact-grounding. (These plus causation are the relations listed in the boxes in §1.) Her point is not to insist that these are building relations, or that no other relations are building relations, but rather to use these intuitive starting point examples to extract some general features of building.

But Bennett (*MTU*, 19–20) is also explicit that the building family is to be understood as a mere resemblance class of relations that are ‘objectively similar’ and so ‘form a reasonably natural class.’ Indeed she (*MTU*, 23–8) denies ‘*Generalist priority monism*: the most general building relation is more natural or fundamental than the more specific ones.’ Indeed her reasoning cuts against even ‘*Generalism*: there is a most general building relation of which the others are versions.’ So it is important to understand that Bennett – like J. Wilson (2014, 2016) and Koslicki (2015), and unlike myself (Schaffer 2009, 2016b) and her earlier self (Bennett (2011b) – does not think that there is any more substantive unity to the building family:

Family Resemblance: The building family is a mere family resemblance class of relations.

¹Bennett (*MTU*, 12–13) allows that on some usages (such as that of J. Wilson 2014) ‘the term ‘grounding’ is basically equivalent to my term ‘building’, and I *am* writing about grounding.’ She continues: ‘But often the term is used in a more specific way. As soon as grounding is claimed to only hold between facts, or to carry some special epistemic force, the term is being used to refer to a particular building relation, ...’ Since I do not use grounding in this more specific way – indeed I explicitly reject both a restriction to facts (Schaffer 2009) and any epistemic requirement (Schaffer 2017) – I take it that building_{Bennett} = grounding_{Schaffer}.

These six starting point examples lead Bennett (*MTU*, 60) to extract the following necessary and sufficient conditions for a relation to count as a building relation:

Conditions: For all relations R , R is a building relation if and only if:

- (1) For all x , $\sim Rxx$, and
- (2) For all x and y , if Rxy , then $\sim Ryx$, and
- (3) Let C be some to-be-specified set of background circumstances that includes neither y nor anything that fully builds y . For all x and y , if x fully R 's y , $\Box[(x + C) \rightarrow y]$.
- (4) For all x and y , x 's R -ing y licenses explanatory and generative claims to the effect that y exists or obtains in virtue of x .

In short, building is *irreflexive*, *asymmetric*, *necessitating-in-the-circumstance*, and *explanatory-and-generative*. I am not sure why a mere resemblance class of similar relations $R1$ – Rn should have unified and informative necessary and sufficient conditions, beyond the merely disjunctive ' R is $R1$ or $R2$ or ... or Rn .' Indeed – harkening back to Wittgenstein (1958, §§66–7) on games – usually those who say 'family resemblance' take that as reason to deny that there are any such informative necessary and sufficient conditions. But let this pass.

Bennett also holds that there are connections between building and both relative and absolute fundamentality. Again I am not sure why a mere resemblance class of similar relations should have a single fixed connection to relative and absolute fundamentality, but let this pass as well. As to the connection to relative fundamentality, Bennett (*MTU*, 40) initially offers as 'the most reasonable such principle':

$B \rightarrow MFT$: For all x and y , and all building relations B , if x at least partially B s y then x is more fundamental than y .

In keeping with her pluralism about building relations, she then revises $B \rightarrow MFT$ to index 'more fundamental than' to particular building relations, but still faces trouble from *Causing is Building*, since it is hard to think that causes are automatically more fundamental (in any sense) than their effects. Intuitively cause and effect may belong to 'the same level' of reality, or if we allow 'downward causation' – say from the chemical to the physical – the cause may intuitively belong to 'a higher level'.² I return to this in §4.2.

²When Bennett motivates $B \rightarrow MFT$ (*MTU*, 40), causation is absent from the discussion: 'If one thing builds – constitutes, composes, realizes, grounds – another, then the former is more fundamental than the latter.' I find it hard to think that causation belongs on this list.

As to the connection to absolute fundamentality, Bennett (*MTU*, ch. 5; cf. Schaffer 2009, 373) defends a conception of absolute fundamentality in terms of being unbuilt, initially understood as:

Independence: x is absolutely fundamental if and only if x is not built by anything.

Bennett also revises independence in keeping with her pluralism, but still faces trouble from *Causing is Building*, since it is hard to think that only the causally initial conditions are metaphysically fundamental. Intuitively – supposing that there is a ‘fundamental physical level’ – surely some of the fundamental stuff persists past the initial conditions. I return to this in §4.3.

Putting this together, Bennett makes the following substantive claims about building relations:

Building Claims: Building relations are irreflexive, asymmetric, necessitating-in-the-circumstance, and explanatory-and-generative (as per *Conditions*), and connected to relative and absolute fundamentality (as per $B \rightarrow MFT$ and *Independence*, or suitable revisions thereof).

There is a question of how substantive *Causing is Building* turns out, for Bennett. If we view the building family as a mere resemblance class – as per *Family Resemblance* – then it is hard to disagree with Bennett (*MTU*, 69) that her claim ‘ought not be all that surprising or controversial’ since: ‘It is just the claim that there is a resemblance class containing both causation and vertical building as members.’ But if we see the building family as governed by these necessary and sufficient conditions, and connected in these ways to relative and absolute fundamentality – as per *Building Claims* – then I find myself among those whom – as Bennett (*MTU*, 167) says – ‘cringe at this’ and ‘take it show that I have gone terribly wrong somewhere’.

It seems to me that what this reveals is somewhat of a split attitude in Bennett’s own treatment, between *Family Resemblance* and *Building Claims*. It seems to me that she should choose between seeing building as a mere resemblance class with no single fixed connection to other notions, or seeing building as a unified general relation with a unitary role. But let this pass as well. My point is that, insofar as Bennett wants to preserve *Building Claims*, she should take causing out from the building family.

3. Bennett’s arguments for adopting causation

So onto the place of causation. Bennett acknowledges (3) that it is a ‘natural thought’ that building is *noncausal* determination, and (67)

speaks of ‘the standard distinction between causal and noncausal determination,’ noting that ‘we have a deeply ingrained spatial metaphor for it. Causal determination is horizontal, and non causal building is vertical.’ So she sees herself as needing arguments for *Causing is Building*, and indeed offers two primary lines of argument. The first line of argument (*MTU*, ch. 4.2) – what Bennett labels ‘the first kind of causal taint’ – is directly for causation being a kind of building relation. The second line of argument (*MTU*, ch. 4.3) – ‘the second kind of causal taint’ – is for the claim that some other not-so-controversial members of the building family themselves involve causation.³

3.1. The second kind of causal taint

I’ll take these in reverse order. So starting with the second line of argument, Bennett (*MTU*, 83) goes on to distinguish ‘three grades of causal involvement’:

First grade: Some building relations – in particular the realization relation – hold in virtue of the causal facts.

Second grade: Some building relations hold ‘along the diagonal’ – from the earlier lower level cause to the later higher level outcome.

Third grade: Some building relations hold over an interval, in ways involving causal processes.

I will be brief here, since I do not think that any of these grades of causal involvement, or anything in this second line of argument, could establish *Causing is Building*. Bennett (*MTU*, 100) agrees:

[T]he second kind of causal taint does not entail the first. The claim that some building relations are partially defined in causal terms, or hold partially in virtue of various causal facts, does not entail that causation *itself* is a building relation.⁴

So as to *First grade*, there is no question that realization holds partly in virtue of the causal facts. Likewise, constitution may hold partly in virtue of the locational facts. But that hardly makes location a building relation. In

³The relation between grounding and causation is discussed by various authors, including myself (Schaffer 2016a, §4.5), Kivatinos (2017), and A. Wilson (2018). Both A. Wilson and I hold something like the nested box picture, while Kivatinos (2017, viii) defends the radical view that causation is grounding: ‘There is no ontological distinction between causation and grounding, thus they are numerically identical.’

⁴Bennett (*personal communication*) clarifies that this second kind of causal taint was never intended to support *Causing is Building*. It was rather intended just to push back ‘against the way metaphysicians tend to treat, e.g. mereology as though it has nothing whatsoever to do with patterns of causation.’

general, the mere fact the one relation sometimes holds in virtue of facts about a second relation does not show that the second relation is a form of the first.

As to *Second grade*, there is no question that there are these diagonal relationships (Schaffer 2016a, 89 calls these ‘hybrids’ and Kivatinos 2017, 70 calls these ‘double-crossers’, understood as ‘dependence relations which hold across both time and ontological levels’.) But Bennett herself (MTU, 91) agrees that these diagonals are best understood as *factored* into ‘nonbuilding diachronic processes that aren’t (noncausal) building, and synchronic acausal building’. This shows – I think – that we need a generic conception of difference-making that includes both factors. But it does not show that we cannot also separate these factors out, just as the nested box picture does.

As to *Third grade*, Bennett gives the example of the way a macroscopic object – such as a bicycle chain – can have properties in virtue of the way its particles move and interact across time, concluding (MTU, 98): ‘The persisting whole has properties that it has at no single moment ... The existence of the chain, the instantiation of the properties – these are *built over an interval*, not at any particular time.’ But likewise, chemical reactions and lives and marriages happen over an interval. This does not make causation itself a chemical reaction, a life, or a marriage. I see nothing here that suggests that causation itself is a building relation. Bennett agrees. So I move on.

3.2. The first kind of causal taint

So far we have seen that there are connections between causation and the building family (that is uncontroversial), but we have not yet seen reasons to lump causation in with the building family, as per *Causing is Building*. Bennett (MTU, 62) leads into this issue by saying: ‘[C]ausation itself is a form of building ... The trick is to think of later stages of the world as being built from earlier ones.’ Bennett offers, as her argument for attempting the trick of including causation, the claim that there are many deep analogies between causation and other building relations, and that these analogies are best explained by *Causing is Building*. So she (MTU, 77) says: ‘[T]here are potentially illuminating analogies to be pursued ... [T]he only reason they are potentially illuminating is the depth of the connection between causation and vertical building.’ In short, she offers *Causing is Building* as an inference to the best explanation for the analogies.

I agree with Bennett (*pace* Bernstein 2016) that there are many deep analogies between causation and other building relations. As Sider (2011, 145; cf. Schaffer 2016a, 54–59; A. Wilson 2018) says, grounding is something like ‘metaphysical causation’. But I disagree that *Causing is Building* offers any reason why the analogy holds, much less ‘the only reason’. Given *Family Resemblance*, all Bennett has said by lumping causation into the building family is that causation is in a resemblance class with the other building relations. This cannot explain why it is that causation resembles the other building relations. It does not *explain* the analogy but just *restates* it.⁵

Actually it does not even fully restate the analogy, since Bennett (MTU, 30) is explicit that her claim that building relations form a resemblance class ‘is entirely consistent with the fact that there are a variety of differences among them’. The only features she is committed to all building relations sharing are those given in *Building Claims*. But the five specific points of analogy she cites (MTU, 71–8) – for instance that in both cases there is a Humean regularity view available, and that in both cases there is a potential dispute over well-foundedness – are not obviously connected to *Building Claims*. So barring a substantive discussion as to why relations that all fit *Building Claims* should also be ones for which controversies about Humeanism and well-foundedness etc. arise, we are given no reason to think that these points of analogy should be common to the family resemblance class, rather than among the ‘variety of differences among them’.

In any case, even if *Causing is Building* did provide a reason why the analogies hold, I would disagree that it provides ‘the only reason’ (much less the best reason) why the analogies hold. Bennett does not consider alternative potential explanations for the analogy, but the literature offers alternatives, including my own view (Schaffer 2016a, 82) that causation and grounding are each best modeled by *structural equation models*, in ways that do ‘explain the analogy with causation’. (In fairness to Bennett, we were writing at roughly the same time.) I return to this in §5. Of course, it may well be that the alternative explanation I put forward is flawed in some way (see Koslicki 2016 for criticism), and that no other alternatives are viable either. But for now I must conclude that – barring further discussion – Bennett’s claim that *Causing is Building* provides ‘the only reason’ why the analogies hold is doubly unwarranted.

⁵I was initially inclined to concede that Bennett could explain the analogy, and then claim to offer an alternative less costly explanation. But I am grateful to Chris Frugé, Verónica Gómez, and Ezra Rubenstein for convincing me not to be so concessionary.

That's not to say that Bennett's claim is wrong, but only that more is needed. We need to hear why a resemblance class of relations united only by *Building Claims* should also yield these further points of analogy, and we need to consider alternatives. But for now, I must conclude that there is no established benefit for *Causing is Building*.

4. The price of adoption

So far I have reviewed Bennett's rationale for *Causing is Building*, and found no established benefit. Now I turn to the costs. I will argue that, by adopting causation into the building family, Bennett distorts her own treatments of matters including causation, relative fundamentality, and absolute fundamentality.

4.1. Costs for causation

Start with causation. I think that *Causing is Building* drives Bennett to at least two implausible claims about causation, stemming from the third clause of *Conditions*, according to which building relations necessitate:

Conditions-3: Let C be some to-be-specified set of background circumstances that includes neither y nor anything that fully builds y . For all x and y , if x fully R 's y , $\Box[(x + C) \rightarrow y]$.

There are two problems arising due to *Conditions-3*. The first is that *Conditions-3* rules out indeterministic causation. If our world is thoroughly indeterministic (as on some interpretations of quantum mechanics), this rules out any actual causation.

Bennett (*MTU*, 80–81) is admirably candid about this consequence, finding it 'questionable' 'that there can be indeterministic singular causal relations between particular events' and concluding '[M]y concept of causation is a deterministic one, ...' She also considers the fall-back option of going the other way and allowing for indeterministic building, saying that if 'indeterministic causation is possible' then so is 'indeterministic 'vertical' building': '[I]ndeterministic causation stands or falls with indeterministic building.'

I do not find either of Bennett's options to be plausible. As to Bennett's rejection of indeterministic causation, it should be noted that it is the near-total consensus in the causation literature that indeterministic causation is possible. To borrow a case from Lewis (1986, 176) to support this consensus, if the terrorist hooks up a bomb to explode when a Geiger counter

next to a radioactive source clicks, and the bomb explodes, then it seems that the terrorist's actions have caused the explosion and all subsequent damages. My intuitions on this do not shift on being told that radioactive decay is an indeterministic process. (I do not say 'Ah! Then the terrorist did not do it after all.')

As far as Bennett's fallback option of allowing indeterministic building, it seems to me that real building is deterministic. Indeed, it is fairly standard in the literature to think that grounding relations involve something like metaphysical necessitation or supervenience. One natural formulation of this (Skiles 2015, 718), in terms of fact-grounding, runs as follows:

Grounding Necessitation: If the facts Γ fully ground the fact f , then it is metaphysically necessary that, if the facts Γ obtain then f obtains.

There is dispute over *Grounding Necessitation*, with some going for the stronger view that replaces the final clause with 'if the facts Γ obtain then Γ grounds f ', and others (including myself; cf. Skiles 2015, 738) going for the weaker view that grounded facts merely metaphysically supervene on their full grounds. But no one thinks, for instance, that the link between the underlying physical state of a system at a time, and the chemical state of the system at that time, is merely chancy or otherwise non-deterministic. To think so – given plausible chance-to-possibility principles – is to deny that the chemical supervenes on the physical. This would imperil physicalism, even in places where few think physicalism faces peril.⁶

So it seems to me that *Causing is Building* drives Bennett to efface a real difference between causation and building relations: causation can be indeterministic, but building cannot be (Schaffer 2016a, 94; Bernstein 2016, 25).

There is a second *Condition-3* related cost for causation, connected not to indeterminism, but to modal force. To separate the points I will focus on deterministic causation. For it is widely thought that the kind of necessitation that comes with building relations is *metaphysical*, while the kind of necessitation that comes with deterministic causation is merely *nomological*. This is somewhat obscured by *Condition-3* in two respects. The first is that Bennett does not specify what 'flavor' of box is involved. Though I take it to be clear

⁶Elsewhere, Bennett (MTU, 55) agrees that real building is deterministic: '[B]uilding always involves necessitation in the sense that building determinism is true. There is no such thing as genuinely indeterministic building.' Indeed it is crucial to Bennett's (2011a, MTU, 193) own 'upwards anti-primitivist' solution to the problem of 'what grounds grounding' that building relations be 'superinternal' (or 'one-sided'), in that 'it is a mark of building that ... everything is settled by the base, by the first relatum (*a*). That is what makes it *generative*.' Indeterministic building would allow for the builder not to settle the built, and so would block Bennett's own claim that the fact that *a* builds *b* is in fact settled just by *a*.

from the context that she intends metaphysical necessity. The second is that the notion of 'background circumstances' is not wholly clear.

A standard view would be that whole grounds metaphysically necessitate their outcomes and whole deterministic causes merely nomologically necessitate their outcomes. But when we move to partial grounds and partial causes, then the partial grounds *plus its supplementing grounds* metaphysically necessitate (/subvene) their outcome, while the partial deterministic cause *plus its supplementing cause* nomologically necessitate (/subvene) their outcome. (The exact principles will be contentious, but the underlying difference remains that one relation holds with metaphysical force and the other with merely nomological force.)

Now one way to get deterministic causation to fit *Conditions-3* (with a metaphysical necessity reading of the box) is to take the laws of nature to be themselves part of the background circumstances. Actually that makes causation look like a relation of logical necessity(!) But that obscures the real difference. With grounding, it is only partial grounding that needs supplementation, and even then the supplements are just further grounds. While with causation – even of the deterministic sort – even the whole cause needs supplementation, and the supplement is not a further cause but something else entirely.⁷

Causation is a metaphysically contingent external relation, real building is not (Rosen 2010; Schaffer 2016a, 94–95; Bernstein 2016, 26). The combination of *Conditions-3* and *Causing is Building* drives Bennett to a distorted treatment of causation.

4.2. Costs for relative fundamentality

Turning to relative fundamentality, I think that Bennett is driven to at least two implausible claims about relative fundamentality. The first of which comes from Bennett's (MTU, 40; see §2) initial 'most reasonable' linking principle, which I will now write in revised form with Bennett's indices included:

B → *MFT Indexed*: For all *x* and *y*, and all building relations *B*, if *x* at least partially *Bs* *y* then *x* is more fundamental_{*B*} than *y*.

⁷It is worth noting that Bennett (MTU, 52) considers a variant formulation of necessitation which drops mention of 'the circumstances,' and just says 'if *x* fully builds *y*, then $\Box(x \rightarrow y)$.' She says (MTU, 54) that the choice between these two conceptions of necessitation 'is not an important decision; nothing deep turns on it.' But full causes do not metaphysically necessitate their effects. So insofar as Bennett thinks that these formulations are substantively interchangeable expressions of the metaphysical force of building, I think she should acknowledge that causation does not belong in the family by her own lights.

Together with *Causing is Building*, $B \rightarrow \text{MFT Indexed}$ entails:

Causes are More Fundamental: If x at least partially causes y then x is more fundamental_{causation} than y .

And *Causes are More Fundamental* is very hard to swallow. As mentioned above, intuitively cause and effect may belong to 'the same level' of reality, or if we allow 'downward causation' – say from the chemical to the physical – the cause may intuitively belong to 'a higher level'.

Bennett is well aware that *Causes are More Fundamental* is very hard to swallow, commenting (*MTU*, 166–167), via a downward causation example:

If causation is a building relation, the motion of my hands builds the motion of those atoms, and thus by clause (2) is more fundamental_{causation} than the motions of the atoms ... Now I recognize that some may take this as a *reductio* of the claim that causation is a building relation.

Indeed! She offers two rejoinders, the first of which (*MTU*, 168) involve a deflationary view of fundamentality:

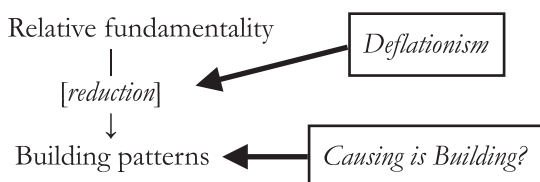
[T]he relevant claim is that a is more fundamental_{causation} than b . And *relative fundamentality*_{causation} is *causal priority*. The putatively shocking claim that causes are more fundamental than their effects is just the trivial claim that causes are causally prior to their effects. In short, the visceral negative reaction to my claim that causes are more fundamental than their effects stems from not taking my deflationism sufficiently seriously.

Bennett's deflationism about relative fundamentality is the view that (*MTU*, 40) 'all it is for one thing to be more fundamental than another is for certain patterns of building to obtain between them'.

In reply, I do take Bennett's deflationism seriously. Indeed I am inclined to agree with it. But it does nothing to make *Causes are More Fundamental* more palatable. To begin with, we need to distinguish Bennett's deflationism – which is a thesis of metaphysical reduction – from a mere claim of linguistic stipulation. Of course if all Bennett meant to do was stipulate that 'relative fundamentality' includes causal priority (or anything else) her claim would hardly be objectionable, but merely uninteresting. She would just be talking past everyone. But Bennett is not offering a mere linguistic stipulation. After all, she (*MTU*, 102) thinks that fundamentality is 'an ordinary folk concept' and indeed (e.g. *MTU*, 138) is at pains to capture intuitions about relative fundamentality, describing (*MTU*, 140) her methodology as involving 'conceptual analysis' and saying that the account 'needs to be intuitively plausible'. Rather Bennett is making a metaphysical

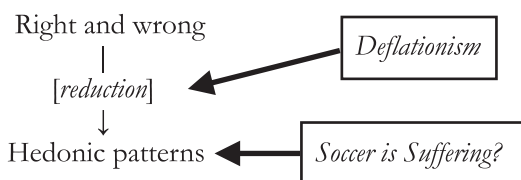
'nothing extra' claim, to the effect that relative fundamentality boils down to building patterns. It is a claim that Bennett (*MTU*, 140) describes in terms of 'reduction', and in contrast with metaphysical primitivism: 'Relative fundamentality is not a further metaphysically deep phenomenon.'

Properly understood as a claim of metaphysical reduction rather than linguistic stipulation, deflationism just says that relative fundamentality boils down to building patterns. But it is one thing to say that there is a reduction of relative fundamentality to building patterns, and another thing to say what those underlying building patterns are:



Deflationism asserts a reductive relationship between relative fundamentality and building patterns, but leaves open what those underlying building patterns include. In particular deflationism leaves open whether the underlying building patterns include causal patterns, or not. I am saying that we get *a more intuitively plausible deflationism* if we take causing out of the building family, because we can then avoid the intuitively implausible result of *Causes are More Fundamental*. Bennett's deflationism is not at issue, and does nothing to make *Causing is Building* any more palatable.

Compare: Suppose that Ann and Ben agree on the deflationist view that right and wrong boil down to hedonic patterns. They hold that there is some reduction of right and wrong to patterns of pleasure and pain. But Ben also holds the strange view that soccer balls feel pain (and thereby thinks it is wrong to kick soccer balls; he protests at World Cup Matches, etc.). Ann and Ben do not disagree about the deflation of right and wrong, they rather have a substantive disagreement about the underlying patterns of pleasure and pain.



Ben can hardly defend his strange view that soccer balls feel pain, and that it is wrong to kick soccer balls, by saying 'The visceral negative reaction to my claim that kicking soccer balls is wrong stems from not taking my deflationism sufficiently seriously.' Ben's deflationism is not at issue. What is at issue is what should be in the basis. Ben is just wrong to include 'soccer ball suffering' in the hedonic patterns, and I am claiming that Bennett is analogously wrong to include causing in the building patterns.

(Also, while I agree with Bennett that there is a notion of causal priority, I do not see how this helps make *Causes are More Fundamental* more palatable. Not every notion of priority is a notion of fundamentality. For instance, Mondays are temporally prior to Tuesdays, and the letter 'M' is alphabetically prior to 'T'; but of course Mondays are not in any sense more fundamental than Tuesdays, and 'M' is not in any sense more fundamental than 'T'. Nor would it change things if we subscribed to 'Mondays are more fundamental^{temporally} than Tuesdays' and "'M" is more fundamental^{alphabetically} than "T"'. Nor would it change things if we said 'We are deflating relative fundamentality.')

Bennett's second rejoinder is that we can just revise *B→MFT Indexed* to exclude causation:

B→MFT Indexed without Causation: For all x and y , and all building relations B except causation, if x at least partially Bs y then x is more fundamental _{B} than y .

Indeed she (MTU, 169) offers a rather concessionary follow-on to this second rejoinder:

Honestly, go ahead if you want. I in fact agree that our pretheoretic, intuitive, uncashed out notion of relative fundamentality or ontological priority is more closely affiliated with building relations other than causation ... [R]elative fundamentality_{causation} either does not enter the mix at all, or else does so only around the edges.

She calls her decision to stick with *B→MFT Indexed* 'a rhetorical decision'.

I agree with Bennett that *B→MFT Indexed Without Causation* is more plausible than *B→MFT Indexed*, but I do not think that the matter is purely rhetorical since the notion of relative fundamentality is – as Bennett (MTU, 102) recognizes – an 'ordinary folk concept' with a life of its own, connected to notions like 'levels of nature' etc. This is precisely why the downward causation examples make *Causes are More Fundamental* sound so cringe-worthy. Bennett (MTU, 40) was aiming for an intuitively plausible account, so *B→MFT Indexed Without Causation* is simply a better

account. All I would add is that there is a natural and obvious explanation for why causation should be left out of relative fundamentality: causation is not a building relation. This all just goes to show that the connections between building and relative fundamentality run more smoothly if we take causation out of the building family.

There is a further problem that Bennett encounters in her treatment of relative fundamentality. To begin with, she ultimately proposes (*MTU*, 161) a complicated five-clause account of relative fundamentality, which dis-joins five sufficient conditions including:

Relative Fundamentality-5: x is more fundamental than y if x belongs to some kind K and y belongs to some kind K^* such that (a) neither K nor K^* includes both built and unbuilt members, and (b) y does not belong to K and x does not belong to K^* , and (c) K^* s are typically or normally built from K s.

(Bennett uses *Relative Fundamentality-5* to allow that a given hydrogen atom in Phoenix is more fundamental than a given water molecule in Ithaca, though neither builds the other – an intuition that ties into the very intuitions about levels of nature that *Causes are More Fundamental* conflicts with.)

The trouble now is that *Causing is Building* plus *Relative Fundamentality-5* allows for circles of relative fundamentality. The simplest way to make circles is via ‘causal ping-pong’ where a thing of one type causes a thing of the second type, which in return causes a thing of the first type, etc. A natural example is a ping pong match, or a chess game where a move from white causes a move from black, which in turn causes a move from white, etc.:

White \rightarrow Black \rightarrow White \rightarrow Black \rightarrow White

A more artificial example with the same structure involves a world that begins with a single blue flash, and then oscillates between a green flash and a red flash for the rest of time:

Blue \rightarrow Green \rightarrow Red \rightarrow Green \rightarrow Red \rightarrow ...

Given *Causing is Building* plus *Relative Fundamentality-5*, it follows that each white move is more fundamental than each black move, and that each black move is in turn more fundamental than each white move. Likewise, it follows that each green flash is more fundamental than each red flash, and each red flash is in turn more fundamental than each green flash.

Of course Bennett could try to revise *Relative Fundamentality-5* in various ways.⁸ A natural attempt would be to add a further requirement (d) reading 'Ks are not typically or normally built from K*s'. But this just leads to a problem with three-player games, where player1's move causes player2's move, player 2's move causes player3's move, and player3's move causes player1's move, etc.⁹ Of course, we can always fiddle more. But I think that the obvious solution is to reject *Causing is Building*.

4.3. Costs for absolute fundamentality

Moving on to absolute fundamentality, Bennett (*MTU*, ch. 5; see §2) defends a conception of absolute fundamentality in terms of being unbuilt, initially understood as:

Independence: x is absolutely fundamental if and only if x is not built by anything.

In keeping with her pluralism about building relations, Bennett then wants to index *Independence*, and notes two ways of going:

All-out Independence: x is all-out fundamental $=_{df} (\forall R: R \text{ is a building relation}) \sim (\exists y) Ryx$.

Indexed Independence (schematic): Where R is a building relation, x is fundamental _{R} $=_{df} \sim (\exists y) Ryx$.

As I understand her, she takes both *All-out Independence* and fleshed out versions of *Indexed Independence (schematic)* to define useful notions. I will focus on the all-out notion.

Given *Causing is Building* plus *All-out Independence*, we get the immediate consequence that nothing beyond the initial conditions of the cosmos (if such there be) is all-out fundamental. One reason why some may find it strange: assuming that our cosmos began with an initial singularity, this entails something in the vicinity of priority monism (cf. Schaffer 2010), namely that there is exactly one all-out fundamental entity, namely the one initial singularity. But my complaint is simply that – supposing that there is a 'fundamental physical level' – surely some of the fundamental stuff persists past the initial conditions (providing the basis for some the later non-fundamental stuff).

⁸Bennett (*MTU*, 161) acknowledges that such complex definitions 'beg to be counterexampled,' and allows that 'some further tinkering' may be needed, being not too fussed 'as long as those tweaks result in clauses that remain formulated in terms of building.'

⁹Note that Bennett (*MTU*, 46) does not take building or causing to be transitive, so she cannot infer that player1's move causes player3's move. (If she could infer that, then she could use (d) to block the example.) Thanks to Nick Tourville for discussion.

This complaint can be buttressed in at least two respects. One is to consider an oscillating universe that begins with a Big Bang, rebounds back to the same state with a Big Crunch, recoils with a second intrinsic duplicate Big Bang, and so on forever. For Bennett, the first Big Bang is all-out fundamental, but the second and all subsequent Big Bangs – despite being intrinsic duplicates of the first – are not all-out fundamental. It is surprising that intrinsic duplicates at the very same world can still differ in fundamentality status.¹⁰

A second way to buttress this complaint is to note that standard physicalists hold that the physical is all-out fundamental. Standard physicalists would not be happy to hear that the physical is only fundamental in some ways (e.g. that it is fundamental_{realization} but not fundamental_{grounding}).¹¹ But since most of the physical realm is causally downstream (indeed all of it is, if there are no causally initial conditions), for Bennett almost all of the physical realm is not all-out fundamental, but at best only fundamental in some ways.

Of course, Bennett could always revise *All-out Independence* to exclude causation (in ways parallel to the way she considered revising *B → MFT Indexed*: §4.2) via:

All-out Independence without Causation: x is all-out fundamental $=_{df}$ $(\forall R: R \text{ is a building relation other than causation}) \sim (\exists y) Rxy$

This would work but there is a natural and obvious explanation for why causation should be excluded from *All-out Independence*: causation is not a building relation. This just adds to the idea that the connections between building and absolute fundamentality run more smoothly if we take causation out of the building family.

Putting this section together, I have argued that Bennett pays the following price for *Causing is Building*:

Cost: *Causing is Building* – together with the rest of Bennett's views – entails:

¹⁰Steinberg (2015, 2026) – in the course of arguing against priority monism – offers a thesis he calls 'Internality of Dependence', defined as '[I]f some object o depends on some object o' at some possible world w , then at any world w' at which both o and o' exist, o depends on o' .' I think a better version of this thesis replaces the consequent with: 'at any world w' at which o^* – a duplicate of o – and o'^* – a duplicate of o' – both exist, o^* depends on o'^* .' While I do not agree with this as a cross-world principle, Bennett is committed to violation of Steinberg's principle even within a given world. For her duplication – even within a given world – does not preserve fundamentality status.

¹¹Indeed Bennett (2011a, 33) describes the physicalist as saying that 'it all unfolds 'upwards' from the physical. Both the less fundamental facts and the relation that generates them derive from the more fundamental facts.'

(1) *Causation*: There cannot be indeterministic or contingent causation relations; and

(2) *Relative fundamentality*: Causes are more fundamental than their effects (when intuitively causes may belong to the same level or even to a higher level than their effects), and relative fundamentality can circle; and

(3) *Absolute fundamentality*: Only the initial conditions of the cosmos (if such there be) can be all-out fundamental.

If the story ended here, I would simply judge that *Causing is Building* is not worth *Cost*.

5. Separate species

So far I have claimed that *Causing is Building* is not worth *Cost*. But I also think that there is a better explanation for the analogy between causing and building, in terms of the nested boxes picture (§1), which may be formulated as:

Separate Species: Grounding (/building) and causation are separate species of generative, explanatory difference-making relations.

Separate Species denies *Causing is Building*, and instead distinguishes grounding (/building, /vertical determination), from causation (/horizontal determination), as separate species of difference-making. I think that *Separate Species* is a more intuitive picture, and argue that not only does it not pay *Cost*, but that it can genuinely explain the analogy between causation and building (as species of difference-making).

I am not saying that *Separate Species* is unproblematic, or the best option overall. I am only saying that it is better than *Causing is Building*, at least with respect to the issues under discussion.¹²

Starting with avoiding *Cost*, it can be readily seen that *Separate Species* denies *Causing is Building*. Hence one can accept that grounding relations are deterministic and hold with metaphysical force, without need to say the same about causal relations. And one can accept that both relative and absolute fundamentality boil down to patterns of grounding relations,

¹²In speaking of a genus of difference-making, I embrace the doctrine that Bennett (*MTU*, 22) labels *Generalism*: 'There is a most general building relation of which the others are versions.' Bennett gives some objections to generalism which I cannot consider here, save to note that Bennett (*MTU*, 28) allows that 'the defender of generalism has room to dodge my arguments.' It seems to me that, if *Separate Species* can explain the causation-building analogy without *Cost*, then it would be overall preferable. *Generalism* also befits the idea that building is not merely a resemblance class, but a unified relation with a unified role (such as given by *Building Claims*). See Schaffer 2016b for a defense of the unity of grounding, and Wilson 2016 for a reply.

without needing to say that causes are more fundamental than their effects, or that only the initial conditions (if such there be) are all-out fundamental. This is straightforward.¹³

As far as explaining the analogy with causation one only needs to posit that the genus of difference-making has those features that causation and grounding share. To my mind the most interesting of these features is *explanation-backing*: grounding and causation are among the previous handful of relations with the power to back explanation. Here what is required is a conception of explanation in terms of difference-making, as offered by Kim (1994, 68; see also Schaffer 2017, 3):

The ontological contribution of dependence relations lies exactly in this fact: they reduce the number of independent events, states, facts, and properties we need to recognize. And that is precisely the unifying and simplifying power of dependence relations. Unity and structure go hand in hand; dependence enhances unity by generating structure.

I am saying that causation and grounding are both explanation-backing because both are forms of difference-making, and difference-making is explanation-backing. (Compare: Why are both testimonial knowledge and inferential knowledge factive? Because both are forms of knowledge, and knowledge is factive.)

Indeed elsewhere – as mentioned in §3.2 – I (Schaffer 2016a, 82) trace the following points of analogy between grounding and causation:

- both are generative relations;
- both are partial orders, admitting a type/token distinction, a component/net distinction, an incomplete/complete/total distinction, and screening-off relations;
- both are backed by non-accidental generalizations, delimit a specific form of necessity, are supportive of and diagnosable by counterfactuals, and can back explanation; and
- both can be fruitfully formalized via structural equation models.

I argue that the final point connects and systematizes the others, and that these points of analogy are general features of difference-making relations. So naturally, the species of difference-making share these features. Here is a *Separate Species*-driven explanation for these points of analogy.

¹³*Separate Species* also allows one to maintain that grounding must be well-founded but causation need not be, and that grounding must hold between non-identical but connected portions of reality but causation must hold between separate and distinct portions of reality (Schaffer 2016a, 96). Since Bennett (MTU, §5.5) is not moved by well-foundedness, and does not discuss the idea of ‘separate and distinct portions of reality,’ I set these matters aside.

I would rest here, save for the fact that Bennett (*MTU*, 71) is aware of my alternative proposal, but suggests that the entire issue is merely verbal:

I choose to call the broader category ‘building’, and to use labels like ‘traditional building’ or ‘vertical building’ or ‘nondiachronic building’ for the noncausal, nondiachronic subcategory. I could just as easily have chosen to use the label ‘building’ for the noncausal, nondiachronic subcategory, and introduced a new label like ‘determination’ for the broader class that subsumes building and causing. That is just a terminological issue. What is not a terminological issue is whether building in the broad sense is in any way useful, and whether it is in fact more cohesive than building in the narrow sense.

I find this perplexing, and it makes me wonder what exactly Bennett does regard as substantive. I would have thought – given that Bennett devotes an entire chapter and much subsequent discussion to defending the thesis – that she regards *Causing is Building* as a substantive claim. I am denying this central claim of hers, so how could this be a merely verbal debate?

Likewise, Bennett is driven to make and defend surprising claims such as the claim that causation cannot be indeterministic, and that causes are more fundamental than their effects. I am contesting these claims, so – again – how could this be a merely verbal debate?

My best guess is that Bennett has reverted to her mere resemblance class view (*Family Resemblance*: §2). I agree that if we are just drawing boxes around resemblance classes, we can and should draw a big box. (I have one too. I label it ‘difference-making’.) But – to her credit – Bennett is not merely making the fairly trivial and vague point that there are some resemblances here. She is also making substantive and precise claims about the building family being governed by certain necessary and sufficient conditions, and connected in certain ways to relative and absolute fundamentality (*Building Claims*: §2). It is these interesting and substantive claims that are at issue.

Let us all agree that the one big box is useful. But insofar as Bennett also makes substantive claims such as (i) every relation in the box is deterministic and (ii) causation is in the box, we will have a substantive dispute. (On this matter I would deny (i), reserving determinism for the smaller ‘grounding’ box.)

So I think we have a substantive disagreement. Perhaps what emerges is that I have simply not understood the depths of Bennett’s deflationism about metaphysical disputes. If Bennett thinks that all of this is verbal, I only ask to know what parts of *MTU* were substantive, since I thought I was disagreeing with some of them. (Bennett 2009 generally takes a

‘realist’ line about substantive metaphysical disputes, so I do not think she would dismiss our dispute over *Causing is Building*.)¹⁴

I conclude that we should reject *Causing is Building*, and moreover that *Separate Species* provides a more plausible picture of how causation, grounding/building, and difference-making are related. But I want to emphasize that *Causing is Building* is a really cool and original idea worthy of further sustained reflection, and that I think that – wherever one ultimately lands on the issue – there is much to learn from thinking through Bennett’s approach. *MTU* is the kind of excellent work that rewards extended study. Though I disagree with Bennett about the place of causation, I admire the boldness and clarity of her proposal, and have learned a great deal from thinking about our disagreement.¹⁵

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¹⁴Bennett (*personal communication*) agrees that we have a substantive dispute. She clarifies that the only thing she was labeling a verbal dispute was a potential dispute over whether the big box or small box should bear the label ‘building’.

¹⁵Thanks especially to Karen Bennett, and also to Ricki Bliss, Ross Cameron, Shamik Dasgupta, Chris Frugé, Verónica Gómez, Tommy Kivatinos, Ezra Rubenstein, Nick Tourville, and Isaac Wilhelm.

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