Why it matters whether you are a contingentist*

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May 17, 2018

Karen Bennett's *Making Things Up* starts with the claim that despite all the differences between them, analytic philosophers share an interest in "claims about what builds—or fails to build—what" (p. 2). Be that as it may, there is another candidate for a shared interest: in generalizing, and identifying common patterns in ostensibly different domains. It is that interest that Bennett pursues in the book, by developing a general theory of building relations.

Making Things Up contains a wealth of insight, and many of its claims and arguments would deserve extended discussion. But I shall restrict myself to the discussion of Bennett's characterization of building relations in chapter 3; and for the most part to just one of their defining features: that they are necessitating. My paper is in two parts. In the first, I examine the specific formulations of Bennett's two versions of the modal constraint on building. In the second, I discuss her claim that the choice between the two versions is of little moment. I shall conclude that it matters greatly which one is correct: what is at stake is what sort of ontology we end out with.

1 Two candidate definitions of building

Bennett aims to provide a characterization or definition of "R is a building relation" (60). Two of the four conditions she puts forward as severally necessary and jointly sufficient concern the formal features of the relation: it needs to be irreflexive and asymmetric.[1] Another condition requires a building relation to be "generative", roughly in the sense of backing certain explanations. My interest here is in the remaining condition: that a building relation is necessitating, in a manner to be specified.

One of the paradigmatic building relations is grounding, and Bennett's definiens is certainly meant to apply to it. It is controversial whether grounds necessitate what they ground: so-called "necessitarians" say yes, while "contin-

*Thanks to the participants in a work-in-progress seminar in Glasgow for very helpful comments: Sam Chilovi, Miguel Garcia, Joaquim Giannotti, Salim Hirèche, Stephan Krämer, and Neil McDonnell. This work was supported by the Arts and Humanities Research Council [grant number AH/M009610/1].

[1]As Bennett notes, irreflexivity is entailed by asymmetry. I shall follow her in using the less concise but more explicit formulation.

gentists" say no. Bennett considers a condition on building that is intended to generalize the necessitarians' stance on grounding (52):

N_1 For all x and y and all building relations B, if x fully B's y, then, necessarily, $x \rightarrow y$.

Before discussing the merits of including N_1 in a definition of building, I shall clarify what it means.

Bennett uses a non-standard notation. The variables x and y can take entities of different ontological categories as values: objects, properties, facts, etc. Since x and y need not be sentential variables, $\rightarrow$ cannot always be understood as simply a material conditional. If we wish to be able to interpret instances of N_1 systematically, we might perhaps take $\rightarrow$ to be a two-place predicate that applies to x and y just in case '$f(x) \supset f(y)$' is true, where $\supset$ is the material conditional, and $f(x)$ is "x exists", "x obtains", "x is true", or "x is instantiated", depending on whether x is, respectively, an object, a fact, a proposition, or a property.

When we instantiate N_1 with a number of candidate building relations that Bennett mentions, and use plural variables when appropriate, we obtain the following conditions, with E, I, O to be read as "exists", "is instantiated", and "obtains", respectively.[2]

- If the *xxs* compose y, then $\Box(Exx \supset Ey)$.
- If x constitutes y, then $\Box(Ex \supset Ey)$.
- If y is the singleton of x, then $\Box(Ex \supset Ey)$.
- If P realizes Q, then $(\Box(I(P) \supset I(Q))$.[3]
- If the *xxs micro-determine* y, then $\Box(Exx \supset Ey)$.
- If $f_1, \ldots, f_n$ ground g, then $\Box(Of_1 \wedge \ldots \wedge Of_n \supset Og)$.

Bennett then gives reasons to doubt some of these instances. What is perhaps the most compelling counterexample—due to Shoemaker (1981)—concerns realization: *having one's C-fibres firing* realizes *being in pain*, but a system consisting of a Petri-dish with a solution containing stimulated C-fibres may instantiate the first property but not the second. Bennett also adds a further one to the growing number of putative counterexamples to necessitarianism about

[2]For some of these relations, e.g. grounding, a "full" and a "partial" version may be distinguished; unless I specify otherwise, I should be understood as talking about the former.

[3]It is unclear whether this is the intended reading of N_1 for the case of realization. Perhaps what is intended is one of the following claims in which I is used as a two-place rather than a one-place instantiation predicate, to be read as "is instantiated by": "$\Box\forall x(I(P,x) \supset I(Q,x))$", or "$\forall\Box x(I(P,x) \supset I(Q,x))$". (Given a suitable instance of the Barcan Formula (respectively, Converse Barcan Formula), the latter entails (respectively, is entailed by) the former.) They are not of the form "$f(P) \supset f(Q)$", and it is not clear to me whether there is a systematic interpretation of $\rightarrow$ that would generate them.

grounding (crediting Jill North): facts about the intrinsic natures of Mary and Tom ground the fact that she is taller than him, but they only necessitate it in conjunction with facts about the curvature of space-time that are not intrinsic to Mary or Tom (53).

So Bennett does not accept N_1, and leans towards contingentism. One might expect her to simply drop N_1 from the definition of a building relation. But she does not wish to do so without replacement, since she thinks that building has *something* to do with necessitation. Within the contingentist camp, she is a "circumstantialist"—holding that there must be circumstances which, together with the builder, necessitates the buildee. She rejects a more radical version, which she calls "indeterminism": "that built entities fail to strongly globally supervene on the rest of the world" (49).

Bennett thus tries to modify N_1 in such a way that it avoids the counterexamples to necessitarianism, but still rules out indeterminism. Since indeterminism is introduced as the denial of a supervenience claim, one option would be to formulate moderate contingentism in terms of supervenience.[4] Bennett goes down another route. Her modified necessitation requirement, intended to rule out building indeterminism, reads as follows (60):

N_2 Let C be some to-be-specified set of background conditions that includes neither y nor anything that fully builds y. For all x and y, if x fully R's y, then, $\Box[x + C \to y]$.

The background conditions that Bennett has in mind might be the presence of certain laws of nature, the absence of certain blockers and defeaters, or, in Shoemaker's Petri-dish example, the C-fibres being suitably wired into a complex nervous system.

N_2 requires elucidation in three respects: first, how $(x + C) \to y$ is to be interpreted; second, how the quantification over background condition is to be understood; and third, what the restriction on admissible background conditions is supposed to be. I shall consider them in turn.

Since C is a set of background conditions, I shall take $f(C)$ to be the proposition that every member of C obtains; and I shall assume that $f(x + C)$ is $f(x) \wedge f(C)$.[5] Given this, $(x + C) \to y$ can be read as $f(x) \wedge f(C) \supset f(y)$.

If it started with "let C be *any* set of background conditions ...", N_2 would be naturally read as universally quantifying over such a set C: for every C that neither includes y nor anything that fully builds y, $\Box[(x + C) \to y]$. The use of "some" in the place of "any" would normally be considered a mere stylistic variant. But the addition "to-be-specified" suggests that C is not to be chosen arbitrarily. If it were, N_2 would arguably be equivalent to N_1: for an empty set C, $f(x) \wedge f(C)$ will strictly imply $f(y)$ only if $f(x)$ does by itself. The intended reading of N_2, then, is as an existential rather than as a universal quantification

[4] For the case of grounding, some relevant technical issues are discussed in Leuenberger (2014); the generalization to building would not be straightforward, however.

[5] This does not answer the question what the referent of $x + C$ is, but there may not be any need to answer that question.

over C: "there is some set of background conditions C ...". This ensures that N_2 is, as intended, logically weaker than N_1 (on the assumption that there is some background condition at all that satisfies the admissibility condition to be discussed shortly). Clearly, N_2 does not entail N_1, but the converse does hold: since what is necessary is closed under entailment, $\Box(f(x) \wedge f(C) \rightarrow f(y))$ follows from $\Box((f(x) \rightarrow f(y))$, regardless of what C is.

But what about the third issue, the restriction on admissible background conditions? Bennett motivates the restriction as follows (52; the ellipsis is hers):

> The restriction on C is to block cheap cases of necessitation-in-the-circumstances. After all, if y itself can count as part of the circumstances, then anything you like necessitates y in the circumstances. For example, let an atom in my left leg be x, and let some faraway table—unconnected to x—by y. That arbitrary atom necessitates the existence of the table in the circumstances ... of coexisting with the table.

The idea is that without the restriction, N_2 would be trivially satisfied, and might as well be left out from a definition of building relations.

The formulation of the restriction prompts the question what it is for a background condition to include an entity y. Presumably, we can take a background condition or a set of background condition as a proposition, such as: that like charges repel in inverse proportion to the square of their distance, or that no potential blockers for Tom's being conscious, given his physical state, are present. There is no obvious way to distinguish between objects that are and objects that are not included in a proposition construed as a class of worlds. On a Russellian account, however, propositions are certain sequences of properties and objects, and accordingly, we can take something to be included in a proposition just in case it is a member of the sequence. At any rate, there is precedent for appeal to such a notion, e.g. with Kit Fine's "objectual content" of a proposition (1995), and I shall grant its intelligibility.

The condition C is not only prohibited from including the buildee y, but also anything that fully builds y. Bennett does not explicitly provide a rationale for this, but it is not hard to find one. Arguably, the existence of the atom in Bennett's left leg will necessitate the existence of the faraway table in the circumstances of all the table's atoms existing, and standing in suitable relations. These circumstances will not include the table, in the relevant sense of "includes", but they necessitate its existence by themselves.

As I read it, "anything that fully builds y" here means "anything that stands in some building relation to y". Formulated this way, the clause should set off the bells of our circularity alarm system. In order to apply the definition to determine whether a given relation R is a building relation, we may first need to figure out whether a certain *other* relation R' is a building relation. Bennett claims to offer a definition (60) of the predicate "is a building relation", and definitions are standardly required to be non-circular. In the present case, this would rule out a component clause of the form "anything that stands in some building relation ...".

One response would be to renounce the aim of giving a traditional definition, and be content with offering conditions—stated in an idiom that includes the term ‘building’ and its cognates—that are individually necessary and jointly sufficient. But this would significantly scale down the ambition of the project. Another response would be to follow the lead of Ramsey, Carnap and Lewis and try to define a term by a theory in which it features itself. I shall examine how this strategy might be implemented in the current context.

The first step is to re-formulate Bennett’s four conditions on a building relation as a theory about the class $\mathcal{B}$ of building relations.[6] The circularity worry only arose in connection with N_2, so the other conditions do not require adjustment.[7] The first clause of the theory of $\mathcal{B}$ is thus the following:

(1) Every $R \in \mathcal{B}$ is an irreflexive, asymmetric, and generative binary relation.

Condition N_2 can be reformulated as follows:

(2) For every $R \in \mathcal{B}$, and every x and y, if x fully R’s y, then $\Box[x + C \rightarrow y]$ for some C that does not include y, and that is such that for all $R' \in \mathcal{B}$ and all x' included in C, x' does not fully R' y.

The conjunction of (1) and (2) is a theory of the class $\mathcal{B}$ of building relations.

The second step is to replace the term $\mathcal{B}$, which names the class of building relations, with a variable, to obtain the following:

(1′) Every $R \in \mathbf{X}$ is an irreflexive, asymmetric, and generative binary relation.

(2′) For every $R \in \mathbf{X}$, and every x and y, if x fully R’s y, then $\Box[x + C \rightarrow y]$ for some C that does not include y, and that is such for all $R' \in \mathbf{X}$ and all x' included in C, x' does not fully R' y.

The conjunction of (1′) and (2′) is the matrix of the Ramsey sentence of the original theory. This matrix specifies a condition on classes, or a “role”, as I shall sometimes say.

We can now ask what satisfies that condition. I shall call any class that does a *realizer* of the theory. Note that such a realizer is not a building relation such as composition or grounding. Rather it is class of such relations; perhaps the seven-membered class {composition, constitution, singleton-formation, realization, micro-determination, grounding, causation}. (Compare: realizers of the folk theory of pain—players of the pain role—are not particular pains, but rather properties such as being a C-fibre firing.)

If there is a unique realizer $\mathbf{X}$ of the theory, we can move to the third step: defining $\mathcal{B}$ as that realizer. If there is no realizer, or if there is more than one,

[6] Alternatively, we could take $\mathcal{B}$ to be the property of being a building relation; or we could use a plural expression rather than the singular $\mathcal{B}$.

[7] N_1 could be straightforwardly adjusted to that setting: every $R \in \mathcal{B}$ is such that for all x and y, if x fully R’s y, then $\Box(x \rightarrow y)$.

our attempt at definition has not succeeded.[8] But is there are unique realizer? In response to this question, would-be definers tend to resort to hope:

> Many philosophers seem to think that unique realization is an extravagant hope, unlikely in scientific practice or even impossible in principle. …. I am … claiming that it is reasonable to hope that a good theory will not in fact be multiply realized. (Lewis (1970, 83))

In a general discussion about "good theories", this may be all we can say. But here, with a particular theory in front of us, we can discuss the matter further.

Both (1) and (2) are universal quantifications restricted to the members of the candidate realizers. Trivially, the empty class is a realizer of the theory. We thus need not worry that the theory has no realizers.[9]

In general, we can show that whenever $\mathbf{X}$ realizes the theory, and $\mathbf{Y} \subseteq \mathbf{X}$, then $\mathbf{Y}$ is also a realizer. Hence if there is one intended realizer, there will also be unintended ones. For example, if the intended realizer is the seven-membered class mentioned earlier, there are at least 127 unintended ones.

To deal with this worry, we can strengthen the theory by adding a further conjunct:

(3) No class that satisfies both ($1'$) and ($2'$) has $\mathcal{B}$ as a proper sub-class.

Clause (3) requires $\mathcal{B}$ to be maximal among the realizers of the theory previously discussed. In effect, (3) is the transposition into the Ramsey-style setting of Bennett's claim that irreflexivity, asymmetry, generativity and N_2 are jointy sufficient in addition to being severally necessary.

The corresponding open sentence is:

($3'$) No class that satisfies both ($1'$) and ($2'$) has $\mathbf{X}$ as a proper sub-class.

The conjunction of ($1'$), ($2'$), and ($3'$)—the *Bennett-matrix*, as I shall call it—specifies the building role.

We have seen that the conjunction of ($1'$) and ($2'$) has at least one realizer—the empty class. It is likewise obvious that if that conjunction has only finitely many realizers, then the Bennett-matrix will have at least one realizer. In general, however, there is no such guarantee—for all we know, every realizer might be properly included, as a subclass, in another realizer. Still, I shall grant the assumption that the Bennett-matrix is realized.

Clearly, the addition of ($3'$) has had the intended effect: if any class realizes the Bennett-role, none of its sub-classes does. One source of multiple realization of the previous theory has thus been eliminated. Is that enough to secure a

[8] There are two views about the consequences of multiple realization: that the term—'building', in the present case—lacks denotation, and that it denotes ambiguously (Lewis, 1999b). I take it neither outcome would constitute success.

[9] If the empty class turned out to be the only realizer, then the attempt at definition has formally succeeded, but has yielded an unwelcome result.

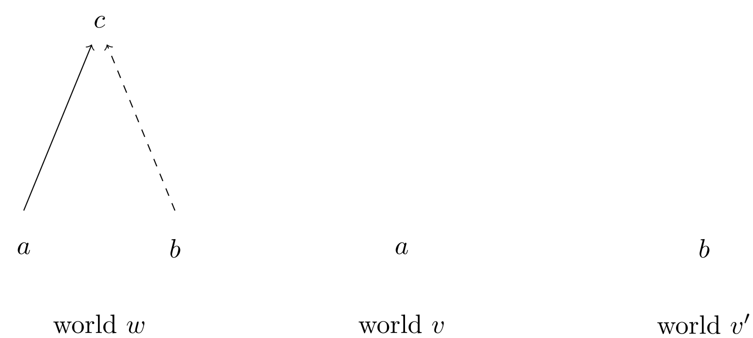

Figure 1: Two mutually undermining candidate building relations

unique realization? Here, there is reason for concern. To illustrate the way that trouble might arise, I shall use a schematic toy example with two binary relations R and R'. I shall make some stipulations about them, and then check whether they count as building relations according to the specified criteria.

Assume first that both relations are irreflexive, asymmetric, and generative. So the class $\{R, R'\}$ realizes $(1')$, as do its sub-classes $\{R\}$, $\{R'\}$, and $\emptyset$. Suppose now that in world w, there are exactly three objects, a, b, and c, and that aRc and $bR'c$ hold; all other atomic sentences involving R and R' are false. In world v, a exists and nothing else; and in world v', b exists and nothing else. We can picture the situation in figure 1. (You may think of R as material causation, R' as formal causation, and c as a hylomorphic substance.)

In such a situation, neither $a \to c$ nor $b \to c$ is necessary, such that neither R nor R' would satisfy N_1. Assuming that w, v, and v' are all the relevant worlds, $a + b \to c$ does hold, however. So it might seem that both R and R' satisfy the "circumstantialist" necessitation requirement: the existence of a necessitates that of c given the background condition that b exists, and the existence of b necessitates that of c given the background condition that a exists.

Assume that these are the only candidate background conditions. Then it follows that $\{R, R'\}$ does not satisfy $(2')$—the two candidate building relations undermine each other's candidacy. For a stands in R to c, but the only background condition together with which the existence of a necessitates that of c includes something, namely b, that stands in R' to c. It follows with $(2')$ that if $R' \in \mathbf{X}$, then R is not.

How plausible is the assumption that this argument depends upon, that the only candidate background conditions include the existence of a and b respectively? It seems to me that these are indeed the only natural candidates in this situation, and that insisting that there must be further ones in w would be *ad hoc* and threaten to trivilize N_2. Dialectically, the assumption seems a fair one to make.

Clearly, $\{R\}$ and $\{R'\}$ each satisfy $(2')$ as well as $(1')$. Since $\{R, R'\}$ does not, as we have seen, they also satisfy $(3')$, and thus the Bennett-matrix as a whole. We have two realizers, and cannot unambiguously define $\mathcal{B}$ after all.

The condition (2′) thus leads to a kind of "constructional exclusion": the relations R and R' exclude each other as ways of building c. I take it, however, that this is an unwelcome result quite independently of its vitiating a Ramsey-style definition. Intuitively, it should be possible, in the case described, for both R and R' to be building relations.[10] This would suggest that N_2, despite being logically weaker than N_1, is still too strong a necessitation requirement.

What should be done in response to this problem? One option would be to look for a yet weaker version of the requirement, perhaps in terms of supervenience rather than in terms of necessity and a conditional. But the simpler option would be to simply drop the requirement. In the book, Bennett first introduces N_2 along with the conditions of irreflexivity and asymmetry, and then asks whether a further condition is needed. She answers that question in the affirmative, and opts for adding generativity. But once we have generativity as well as irreflexivity and asymmetry, we can go back and ask whether we still need a necessitation requirement. Recall that the purpose of the requirement was to rule out building indeterminism. It may well turn out that no generative relation is indeterministic in the relevant sense. After all, generation is explicated in terms of explanation, and explanation has often been taken to entail necessitation in the circumstances. The covering-law model of explanation is one example; the sufficiency requirement in certain difference-making accounts of causation another (List and Menzies (2009)).

The question whether indeterminism is ruled out by Bennett's other conditions, specifically generativity, is a large one, and beyond the scope of this article. If it is, then no modal condition needs to be included in the *definition* of building. I should note that even if that were so, it would still be an interesting and non-trivial project to formulate modal conditions that are satisfied by building relations as a consequence of that definition.

2 Choosing between the two definitions

I have cast doubt upon whether Bennett's N_2 adequately captures circumstantialism about building. In this section, I wish to prescind from such difficulties. I shall grant, for the sake of the argument, that N_2, or a suitably modified version of it, works as intended. The focus of my discussion will be the way that Bennett characterizes the choice between N_1 and N_2.

Recall that N_1 appears to fall afoul of counterexamples, such as C-fibres firing in a Petri dish. While I gave the impression that Bennett rejects N_1, her position is actually more nuanced. She says that the choice between being a necessitarian and a circumstantialist "is not an important decision; nothing

[10]This point is confirmed by considering a modified version of our scenario where $R' = R$. Here, we get the result that $\{R\}$ $(= \{R'\})$ does not satisfy (2′), and hence that only the empty set satisfies the Bennett matrix. In that modified case, the definition formally succeeds, since the Bennett matrix has a unique realizer. Still, the definition does not seem to be materially adequate. See also the preceding footnote.

deep turns on it” (54; emphasis hers); and that “[r]eally, the choice ... is just a matter of bookkeeping”.

These remarks are *prima facie* puzzling. Bennett’s aim, in the part of the book that I am discussing, is to characterize the class of building relations. She considers two characterizations, one that includes N_1—the “narrow” characterization—and one that includes N_2—the “broad” characterization. To fulfil her aim, Bennett surely must tell us which one is correct. Aren’t two characterizations for one class of relations one too many?

In the rest of this paper, I shall discuss what Bennett might have in mind here, and urge that the choice does matter after all.

One possible reason for denying the importance of the choice would be the thought that even though N_1 and N_2 are not logically equivalent, there is no relation that satisfies the broad but not the narrow characterization. Being generative, by itself or in conjunction with N_2 and asymmetry, might already entail N_1. The classes picked out would then turn out to be the same.

However, I very much doubt that this is what Bennett has in mind. If it were, she would surely tell us so; and I shall shortly present a quote that would seem to rule out that interpretation.

If the choice between the broad and the narrow characterization was purely terminological, that would be another possible reason to deny it significance. Of course, once we have decided to use ‘building’ as a technical term, nothing deep turns on the question about how we choose to define it.

Once more, this cannot be what Bennett has in mind. Her claim that the choice does not matter is not just a reminder of the arbitrariness of the relationship between words and what they stand for. For her definition of a building relation is not purely stipulative. Rather, she is trying to identify a theoretically or metatheoretically important class of relations, and she has articulated a few constraints and desiderata on the definition: the definition needs to apply to certain paradigms, such as constitution, composition, and grounding; and the class is supposed to be natural, in some sense that is intuitive but hard to analyse.

Perhaps, though, we still need not choose because whilst the narrow and the broad characterization differ from each other, they both include the major paradigms and exclude the major foils, and are both theoretically important. There are two useful concepts of building, much like there are two useful concepts of property, if Lewis (1983a) is right, or two concepts of causation, if Hall (2004) is right, or two concepts of metaphysical necessity, if Rosen (2006) is right. Yet once more, such an interpretation seems uncharitable. The other philosophers I just mentioned all insisted that we should pay attention to the distinction, and go on to explore what hangs on the question whether we are deploying one or the other in a given context. The existence of two natural classes going by one name is a significant discovery. This attitude is strikingly different to Bennett’s.

Bennett elaborates on the claim that the choice between N_1 and N_2 is “just a matter of bookkeeping” in the following passage:

> I can have intuitive building bases and the somewhat ungainly im-

> plementation of the modal requirement, or I can have a cleaner implementation of the modal requirement and uglier, more complex building bases. In the latter case, much ordinary building talk must be treated as invoking mere partial builders. (54)

Two moves are being made here, which I will try to tease apart.

The first move is to suggest that either N_1 or N_2 may be acceptable if we are prepared compensating changes in what we say about the candidate building relations. The idea seems to be that the choice is to be made based on aesthetic criteria, and that the merits and demerits of N_1 and N_2 balance each other out.

Suppose I believe that *having C-fibres firing* realizes *being in pain*; or that facts about the intrinsic natures of Mary and Tom ground the fact that she is taller than him; or that every fact about the world is grounded in the positive facts. Given that there is no necessitation in these cases, it seems that I have to either reject N_1, or deny that realization or grounding are building relations. Since the latter are among the paradigms of building, my only option seems to be to reject N_1—unless I am willing to give up my belief in the pertinent instances of realization and grounding! As Duhem and Quine have urged, we can choose to accept almost anything if we are prepared to restore consistency by making compensating changes in our web of beliefs.

However, it seems to me that this move does not yet justify the claim that the choice between N_1 and N_2 does not matter. Many of us would accept the Duhem–Quine thesis without taking it to undermine the significance of our ordinary doxastic choices. Moreover, the considerations that Bennett adduces hardly show that honours are even between N_1 and N_2. Why should the fact "that it allows a cleaner implementation of the modal requirement" be a weighty reason to give up my "intuitive building bases", i.e. my first-order beliefs about grounding and realization, not to mention causation, which Bennett also counts among the building relations? I suspect that this fact carries weight only to the extent that we are convinced that building or grounding should be characterized at least partly in modal terms, and that all contingentist alternatives to N_1 are cumbersome. If we are not—and we need not be, at least at that stage in the argument—it is not clear whether N_1 forms part of an attractive package of views for us.

But Bennett's second move, in the last sentence of the quote, puts a very different complexion on the choice: it is not between world views, but rather between rival semantic hypotheses about 'grounds' and other words in the building family, as they are used in philosophical discourse. As I read Bennett, she is claiming that the dispute between those who wish to include N_1 and those who wish to include N_2 in the definition of building is merely verbal. After all, the claim that some choice is a matter of bookkeeping is closely related to the claim that disputes about what the correct choice is are verbal disputes.[11]

[11] The claim that a dispute between necessitarians and circumstantialists is merely verbal would appear to entail that the parties do not just use one word differently, but a whole range of words, including 'builds', 'grounds', 'realizes', 'composes', and so on. In my view, this makes the diagnosis *prima facie* implausible, but I shall not press that point.

Suppose that Connie the contingentist and Mustafa the necessaritarian are disputing about the truth of the following quantified grounding claims:

(1) The fact that Mary is taller than Tom is grounded in some intrinsic facts about them.

(2) The fact that there are no angels is grounded in some positive facts.[12]

Connie accepts (1) and (2), while Mustafa rejects them on the basis that the putative grounding facts do not necessitate that Mary is taller than Tom, or that there are no angels.

Suppose that they are then told that 'grounded' can express either of two relations: *partial grounding*, or else *strict grounding*, which is necessitating by stipulation. Accordingly, (1) and (2) can be disambiguated to (1_p), (2_p), (1_s), and (2_s), which result from replacing 'grounded' in (1) and (2) by 'partially grounded' or 'strictly grounded', respectively. When asked to evaluate those sentences, Connie and Mustafa agree that (1_p) and (2_p) are true, while (1_s) and (2_s) are false. There is no longer any dispute!

It is widely taken to be a hallmark of verbal disputes that they tend to disappear once certain distinctions are made. According to the influential account of Chalmers (2011), we can test whether a disagreement is verbal by the "method of elimination": we bar the use of a certain term that occurs in a sentence over which there are disagreements, and ask whether the disagreement persists. What happened when non-specific 'grounds' was eliminated from (1) and (2) lends credence to the hypothesis that there is no substantive disagreement between Connie and Mustafa.

But this test method is by no means decisive, as Chalmers notes:

> If a language has a limited vocabulary, then it might be that once one bars a key expression, one can no longer even formulate any issue that might potentially resolve the original issue. (Chalmers (2011, 530))

Connie may indeed complain that once 'grounding' is barred, she can no longer express her view. I shall argue that the word 'grounded' does not mean the same as 'partially grounded' in her mouth, contrary to what the above story might have suggested. Grounding need not be partial by dint of violating the necessitation requirement.

With respect to (1), Connie agrees that intrinsic facts about the two people (INT) necessitate that Mary is taller than Tom (f) only in conjunction with facts about the global curvature of spacetime (g). But she might insist that the former are nonetheless a full ground, with the latter functioning as a background condition with respect to f's being grounded in INT.[13]

[12] The plural expression "some positive facts" may stand for an empty plurality, in case one of our disputants is open to the idea of zero-grounding.

[13] Connie may or may not believe that there are facts Γ such that g and Γ fully ground f. Indeed, INT may be such a Γ, since full grounds can be parts of other full grounds (disjunctions with two true disjuncts furnish the canonical example).

Connie's rejection of the suggestion that the dispute about (1) is merely verbal turns on the distinction between grounds and background conditions. Bennett takes this distinction to be "invidious" (55), and I shall not defend it here. But I wish to argue that the substantive character of disagreement about (2) can be defended without relying on that distinction.

Since Connie accepts (2), she does not think that the absence of angels ontologically commits her to anything but positive states of affairs—where a state of affair is, roughly, speaking, a "sparse" fact, as opposed to an "abundant" or "pleonastic" one, corresponding to a true sentence. Since Mustafa rejects (2), on the other hand, he must conclude that f is either ungrounded, or else has something beyond positive facts among its grounds. Whether he opts for fundamental negative states of affairs, totality states of affairs, or something yet different, he will incur an ontological cost.

So disagreement about whether (2) is true has led Connie and Mustafa to adopt different ontologies. In this dispute, grounding plays a role in regimenting ontological discourse. Our ontology needs to be rich enough to account for all the phenomena. Philosophers who commit to less are liable to be branded as "ontological cheats"—a charge Mustafa might level at Connie—and philosophers who commit to more fail to adhere to the maxim of Ockham's razor—Connie's criticism of Mustafa. On a plausible regimentation, our ontology accounts for a phenomenon just in case it either includes it, or includes full grounds for it. In Bennett's terminology, this is the constraint that our ontology shall be *complete* (109).[14] Both Connie and Mustafa agree with this—that is part of the reason why grounding is a useful term for them to use in their philosophical discussion. In contrast, neither thinks that partial grounding can play such a role, and only Mustafa thinks that strict grounding can.

Given the link between grounding and ontology, the question whether we are contingentists or necessitarians is thus closely linked to the question whether there is negativity in the world, as opposed to our representations thereof. I take it that this is a substantive dispute about what exists, not just about what gets to be called 'ground' rather than 'background condition'. If the dispute were to seem verbal today, then our robust sense of reality must have been somewhat blunted in the 100 years since 1918, when Russell, in "The Philosophy of Logical Atomism", gave his famous account of a lecture at Harvard:

> One has a certain repugnance to negative facts. . . . You have a feeling that there are only positive facts, and that negative propositions somehow or other got to be expressions of positive facts. When lecturing on this subject at Harvard I argued that there were negative facts, and it nearly produced a riot: the class would not hear of there being negative facts. (Russell (1956, 211))

I conclude that given what is at stake, the choice between necessitarianism and contingentism is not merely a matter of book-keeping.

[14]Bennett introduces completeness in this sense in her discussion of fundamentality, while I am putting it to use in an account of ontological commitment. The two uses are linked if we are ontologically committed to all and only the fundamentalia.

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