

## STRUCTURE IS NOT AN AIM OF BELIEF

Recently ? has defended the thesis that *structure* is an aim of belief.<sup>1</sup> According to this theory, it is better to believe of things that they are green as opposed to bleen and blue as opposed to grue. For instance, Ted Sider conjectures that

it's *better* to think and speak in joint-carving terms. We ought not speak the 'grue' language, nor think the thoughts expressed by its simple sentences.  
(2011, p. 72)

Elaborating on this idea, Sider asserts:

Joint-carving thought does not have merely instrumental value. It is rather a constitutive aim of the practice of forming beliefs, as constitutive as the more commonly recognized aim of truth. (2011, p. 72)

Why think the property of being joint carving or structural is an aim of belief? And what is it for a property to be an aim of belief anyway? One answer to the first question is that it best explains our intuitive judgments about cases. Imagine a community of language users that employ the predicates 'bred' and 'rue' that cut across the interpretations we give to 'red' and 'blue'. Sider (2011, p. 2) thinks that, "It is almost irresistible to describe these people as *making a mistake*." These people, Sider thinks, would be apt for criticism along some distinctively epistemic dimension. But they are not failing with respect to any truth, evidence nor knowledge norms. We can suppose that they are disposed to know that something is bred when they believe that it is bred. Hence they also tend to have evidence for their beliefs and their beliefs tend to be true. If they are failing along some epistemic dimension, it must be some dimension not captured by the standard norms relating belief to truth, knowledge or evidence. The natural thought is that the norm evaluates beliefs on the basis of the naturalness of their contents. Subjects in the above case are making a mistake

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<sup>1</sup>? defends a related view. For criticisms see ?. In this paper I'll use 'structural', 'joint carving' and 'natural' interchangeably.

*simply because* their beliefs are not structural; while their beliefs are true, they do not match up with the structure of the world.

The sense in which truth is a constitutive aim of belief is plausibly captured by the norm:<sup>2</sup>

**T**      One must: believe  $p$  only if  $p$  is true.<sup>3</sup>

According to **T**, false beliefs are impermissible. If structure is a “constitutive aim of the practice of forming beliefs” in the same sense as truth, we should expect an analogous norm to hold:

**S**      One must: believe  $p$  only if  $p$  is structural.<sup>4</sup>

According to **S**, unstructural beliefs are not permissible. But notice that by **S**’s lights, both green and bleen thoughts are impermissible. Neither the proposition that something is bleen nor the proposition that something is green is structural since neither the property of being bleen nor the property of being green is perfectly joint carving. Hence **S** fails to capture the original datum that we ought not speak the ‘bleen’ language and instead speak the ‘green’ language.

One obvious differences between naturalness and truth is that whereas propositions can be more or less natural, they cannot be more or less true. We might expect norms relating belief and structure to take this into account. The *relative* naturalness of the properties involved matters when deciding how to believe. One should prefer to theorize in terms of ‘green’ over ‘bleen’ since being green is *more* natural than being bleen even if neither is perfectly natural.

In what follows, I argue that even when we take into account the relative naturalness of the properties involved, a norm relating belief to naturalness remains illusive. In section 1, I formulate a theory of the normative significance of naturalness that is designed to capture the original datum. I then argue that this theory is false. In section 2, I consider several ways of modifying the theory to avoid the argument of section 1. In each case the modified

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<sup>2</sup>Though controversial, normative interpretations of the claim that belief aims at truth are widespread. See Boghossian (2003), Brandom (1994), Engel (2007), Humberstone (1992), Wedgwood (2002), and Williamson (2000).

<sup>3</sup>This can either be read schematically  $O(B\varphi \rightarrow \varphi)$  or as a general principle  $\forall pO(Bp \rightarrow p)$

<sup>4</sup>As before, this can either be read schematically  $O(B\varphi \rightarrow \mathcal{S}\varphi)$  or as a general principle  $\forall pO(Bp \rightarrow \mathcal{S}p)$  where  $\mathcal{S}$  is the operator ‘it is structural whether’.

theory faces similar challenges from the considerations raised in section 1. Lastly, in section 3, I argue that the sorts of considerations that refute my attempts to formulate a naturalness norm for belief cast doubt on the very idea that structure is normatively significant and thus on any general norm relating belief to structure. I thus (tentatively) conclude that no such norm can be right.

## 1. THE THEORY

The primary idea of the theory to be stated is that the result of substituting a less natural property for a more natural property within a proposition results in a proposition that is, in some way or other, normatively better. Let  $p$  be a proposition and  $f$  and  $g$  properties. Let  $Sub(p, f, g)$  be the proposition that results from substituting  $g$  for  $f$  in  $p$ .<sup>5</sup> Consider then the theory axiomatized by the following three principles:<sup>6</sup>

- (1) For any  $p$ , if  $p$  is true, then there is a prima facie obligation to believe  $p$ .
- (2) For any properties  $f$  and  $g$ , if  $f$  is less natural than  $g$ , then  $p$  is less natural than  $Sub(p, f, g)$  (provided that  $f$  is a constituent of  $p$ )
- (3) For any true propositions  $p$  and  $q$ , if  $p$  is less natural than  $q$ , then the strength of the prima facie obligation to believe  $p$  is less than the strength of the prima facie obligation to believe  $q$ .

A theory of this sort does capture the original datum. If  $x$  is both blue and grue, the prima facie obligation to believe that  $x$  is blue is greater than the prima facie obligation to believe that  $x$  is grue because blue is more joint carving than grue. When one believes that  $x$  is grue and fails to believe that  $x$  is blue, one makes the mistake of choosing the option that one has less prima facie obligation to choose.

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<sup>5</sup>In what follows I am going to make use of the ideology of substitution and constituency. One might worry that speaking this way presupposes the structured view of propositions, and thus faces worries stemming from the Russell Myhill paradox. This isn't quite right though. The Russell Myhill paradox refutes, in my view, one version of the structured theory, but does not obviously challenge the intelligibility of notions of constituency and substitution. For instance, Andrew Bacon (forthcoming) shows how a wide variety of theories of propositional granularity can accommodate substitutional notions. Additionally, a lot of people working within the tradition that I am criticizing make use of properties "figuring" in propositions and thus will need some way of making sense of that terminology.

<sup>6</sup>This theory is partly adapted from a theory of ?.

These principles leave many questions unsettled. For instance, they only tell us how to reason in terms of pairs of propositions  $p$  and  $q$  when  $q = \text{Sub}(p, f, g)$  and  $f$  is a constituent of  $p$ . However, they are informative enough to criticize. Below, I argue that not all of the principles are true. Furthermore, the *way* in which they fail suggest that structure is not, after all, an aim of belief. In particular, principle (3) and variants of the basic idea expressed in (3) are false.

## 2. THE ARGUMENT

Let  $f$  and  $g$  be arbitrary properties such that  $f$  is less natural than  $g$  and  $g$  is not perfectly natural. Let  $p$  be the proposition that  $f$  is not perfectly natural and  $q$  be the proposition that  $g$  is not perfectly natural. By construction,  $p$  and  $q$  are both true.<sup>7</sup> Furthermore, since  $q = \text{Sub}(p, f, g)$ ,  $p$  is less natural than  $q$  by (2). By (1) and the fact that  $p$  and  $q$  are both true, there is a prima facie obligation to believe  $p$  and a prima facie obligation to believe  $q$  which we denote by  $O_p$  and  $O_q$  respectively. By (3), it follows that the strength of  $O_p$  is less than the strength of  $O_q$ . That is, the strength of the prima facie obligation to believe that  $f$  is not perfectly natural is less than the strength of the prima facie obligation to believe that  $g$  is not perfectly natural. Since  $f$  and  $g$  were chosen arbitrarily, we can generalize to get:

- (\*) For any properties  $f$  and  $g$  such that  $g$  is not perfectly natural, if  $f$  is less natural than  $g$ , then the strength of the prima facie obligation to believe that  $g$  is not perfectly natural is greater than the strength of the prima facie obligation to believe that  $f$  is not perfectly natural.

If (\*) is true, then the closer a property gets to being perfectly natural, the stronger our prima facie obligation is to believe that it is *not* perfectly natural (provided that it is indeed not perfectly natural). But, it seems to me, this is just a straightforward reductio of the conjunction of (1)-(3).

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<sup>7</sup> $p$  is true since, by stipulation,  $g$  is not perfectly natural and  $f$  is *less* natural than  $g$ .

### 3. FINE-TUNING

Principles closely analogous to (2) are standard when authors attempt to extend the notion of naturalness to propositions. For instance, Sider says “a proposition is joint-carving to the extent that it can be simply expressed using-joint carving concepts.” (2011, p. 73) The principle (2) can be thought of as generalizing this idea to relative naturalness.<sup>8</sup>

One way to reject (2) is to restrict it to properties that occur in *predicative* position within a proposition.<sup>9</sup> Thus we replace (2) with (2\*):

(2\*) For any properties  $f$  and  $g$ , if  $f$  is less natural than  $g$ , then  $p$  is less natural than  $Sub(p, f, g)$  (provided that  $f$  occurs in a predicative position in  $p$ )

If we replace (2) with (2\*), we can no longer infer that  $p$  is less natural than  $q$  in the above argument since neither  $f$  nor  $g$  occurs in predicative position within  $p$  or  $q$ . The move from (2) to (2\*) is *ad hoc*. (2\*) allows us to infer that the proposition  $x$  is blue is more natural than the proposition that  $x$  is grue. But it doesn’t allow us to infer that the proposition that  $x$  instantiates the property of being blue is more natural than the proposition that  $x$  instantiates the property of being green. (2\*) allows for implausible asymmetries in our epistemic obligations. (2) treats these cases alike.

Furthermore, we may be able to give an analogous argument even after replacing (2) with (2\*). Let  $F$  be a predicate that denotes  $f$  and  $G$  a predicate that denotes  $g$ . Let  $p$  be the proposition expressed by the sentence “It is consistent that something nonfundamental is  $F$ ” and  $q$  the proposition expressed by the sentence “It is consistent that something nonfundamental is  $G$ ”.<sup>10</sup> If we have selected  $f$  and  $g$  so that  $f$  is less natural than  $g$  and

<sup>8</sup>Further endorsements of this idea are found in ? : “[A] proposition is elite iff it is about elite properties... a belief is elite iff its content is an elite proposition.” (291)

<sup>9</sup>We might define the notion of a property  $f$  occurring within predicate position in a proposition  $p$  as follows: for some property  $g$ ,  $Sub(f, g, p) \neq p$  and  $p$  is not about  $f$ . The relevant notion of aboutness has been explored in both Boolean frameworks and in frameworks that allows for more fine-grained distinctions. See ?, ? and ?.

<sup>10</sup>To be fundamental is to have a perfectly natural property and to be nonfundamental is to not be fundamental. The reason to consider the proposition expressed by “it is consistent that something fundamental is  $F$ ” rather than the simpler “something is  $F$ ” is to ensure that the proposition expressed is *true* without supposing that “something is  $F$ ” is true. One worry is that since the propositions expressed by these sentences are all necessary, they will all be identified by a coarse grained account of propositions. Here is

$g$  is not perfectly natural, then the prima facie obligation to believe  $p$  will be less than the prima facie obligation to believe  $q$  given (1), (2\*) and (3). Since  $f, g, F, G$  were all chosen arbitrarily, we can generalize to the conclusion:

(\*\*) For any property  $f$  and  $g$  such that  $g$  is not perfectly natural, and for any predicates  $F$  and  $G$  denoting  $f$  and  $g$  respectively, if  $f$  is less natural than  $g$ , then the strength of the prima facie obligation to believe the proposition expressed by the sentence  $\ulcorner$ It is consistent that something nonfundamental is  $F$  $\urcorner$  is less than the strength of the prima facie obligation to believe the proposition expressed by the sentence  $\ulcorner$ It is consistent that something nonfundamental is  $G$  $\urcorner$ .

This conclusion is still at odds with the way we standardly reason about naturalness. For instance, if it turns out that being an electron is not perfectly natural but close to perfectly natural, then (\*\*) will entail that we are more obligated now to believe that it is consistent that something nonfundamental is an electron than that something nonfundamental is either an electron or a cow.<sup>11</sup>

(1) is a controversial claim. However, (1) is only included to ensure that (3) makes sense. On some views of definite descriptions, if the extension of  $F$  is empty, then statements involving  $\ulcorner$ the  $F$  $\urcorner$  are not meaningful. Since (3) mentions the obligation to believe  $p$  for any arbitrary truth  $p$ , we need first to ensure that such an obligation exists. The argument can be reformulated without the assumption that there are obligations. For instance, we might replace (3) with (3\*):

(3\*) For any true propositions  $p$  and  $q$ , if  $p$  is less natural than  $q$ , then it is prima facie better to believe  $q$  than  $p$ .

The principle (3) bears an even closer resemblance to some glosses people have given on the idea that structure is normatively significant. For instance Dasgupta (2018, 291) offers

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a work around: let  $\varphi$  be an arbitrary contingently true sentence. Then for each predicate  $F$  consider the proposition expressed by  $\ulcorner\varphi$  or something fundamental is  $F$  $\urcorner$ .

<sup>11</sup>One might attempt further restrictions. For instance, perhaps (2) ought to be restricted to properties that occur in predicative position of atomic propositions. But this would be to replace (2) with a principle that is objectionably weak and so make the replacement look ad hoc. Additionally one has the extra cost of having to spell out the distinction between atomic and non-atomic propositions.

one possible gloss of this idea is that “that elite beliefs are *better* than non elite ones,” where being elite is a matter of have joint carving content.

An analogous argument will then lead us to the conclusion:

(\*\*\*) For any properties  $f$  and  $g$ , if  $g$  is more natural than  $f$  then it is prima facie better to believe that  $g$  is not perfectly natural than to believe that  $f$  is not perfectly natural.

Thus the closer a property gets to being perfectly natural the better the belief that it is is not perfectly natural will be (prima facie). When the argument is formulated in this way it naturally gives rise to the question of what it means to call a belief “better” than another belief. The formulation in terms of prima facie obligations to believe has the virtue of making the problem vivid, but it does incur some ontological cost. Reformulating it in terms of betterness avoids the ontological costs while perhaps taking away slightly the vividness of the problem. But the reformulation also has a benefit that the original lacks: since the principle (\*\*\*) seems implausible as an evaluative claim and since it is difficult to see how a theory that takes joint carvingness to be evaluatively significant will avoid it, it seems to cast doubt on the very idea that joint carvingness is *evaluatively* significant.

#### 4. GENERALIZATIONS

Responsible theorizing about  $F$ s requires the ability not only to recognize paradigm cases of  $F$  but also the ability to recognize things that are clearly not  $F$  as not being  $F$ . Applying this to the case of naturalness, responsible theorizing about naturalness requires the ability to recognize that things that are clearly not joint carving as not being joint carving. Above I argued that this fact causes problems when it comes to formulating the relevant norm linking belief to naturalness. There are reason for concluding that it will challenge any putative norm connecting belief and naturalness. The basic problem is simply that there are cases in which it is epistemically better to believe a propositions that are less joint carving. Moreover, there seem to be cases in which we are *more* obligated to do so. A rational agent interested in the relative naturalness of things would not seek to amass beliefs that highly joint carving properties are *not* joint carving but rather look to identify the paradigm cases. My belief

that being a cow or being an electron is not perfectly natural is better than your belief that being an electron is not perfectly natural, even supposing that we are both correct. Your belief is, in some sense, closer to being false or more risky than my belief.

When stated in terms of inquiry the conclusion is that there are a variety of cases in which it is perfectly fine to employ ‘grue’ in theorizing. For instance, in contexts in which the question ‘What is natural?’ is salient, asserting that being grue is not joint carving is not even a *prima facie* violation of a norm of belief. In attempting to answer this question, the goal is not to find the most joint carving properties that just barely fall short of being perfectly joint carving. Rather the goal is to classify the clear cases correctly. This requires reasoning in terms of highly gruemsome properties.

If this right that then the sense in which theorizing or believing is supposed to aim at structure cannot be straightforwardly be understood in evaluative, normative or rationality theoretic terms. It is entirely unclear, however, how the position is to be understood. Consider, for instance, Sider’s original motivation for thinking that structure is an aim of belief. We imagine two individuals one of whom believes that the cup is grue and the other of which believes the cup is green. According to Sider, the one who believes the cup is grue is “making a mistake.” But it seems to me that the belief that the cup is grue is a mistake if and only if the belief that being grue is not perfectly joint carving is a mistake. Both beliefs involve the property of being grue. But that belief is no kind of mistake at all. So the belief that the cup is grue must be no kind of mistake either *however* this idea of “being a mistake” is understood.

What should we make of our disposition to criticize those who use the ‘grue’ language as opposed to the ‘blue’ language? If they are are not violating any epistemic norms in using the ‘grue’ language, why are they apt for criticism? At this point I have to admit that it is not at all clear to me that they are apt for criticism, or at least not in the way that, for instance, Sider has supposed. The problem could simply be specific to the case: facts about color are interesting to us and help explain further facts that we are interested in. Insofar as one is ignorant of facts about color, believing that something is grue instead of



blue, they are thereby ignorant of some interesting facts that have the potential to explain other facts of interest.<sup>12</sup> I have no general theory of interestingness but on my view it does not necessarily involve any kind of *norm* on belief and may be culturally variable.<sup>13</sup> It is, moreover, somewhat context specific. If non-joint carving properties do not figure in laws, then we might be *very* interested to learn that some property that purportedly figures in a law is not joint carving.

## 5. CONCLUSION

I’ve argued that when it comes to beliefs *about* which properties are joint carving, there is not a reasonable sense in which these beliefs are subject to norms relating believing and joint-carvingness. These beliefs thus represent an important counterexample to those who think there are norms relating belief and structure.

## REFERENCES

- Bacon, Andrew. 2019. “Is Reality Fundamentally Qualitative?” *Philosophical Studies* 176 (1):259-295
- Bacon, Andrew. forthcoming. “Substitution Structures.” *Journal of Philosophical Logic*: 1-59.
- Boghossian, P.A. 2003. “The Normativity of Content.” *Philosophical Issues* 13: 31-45.
- Brandom, R. 1994. *Making it Explicit*. Harvard University Press.
- Dasgupta, S. 2018. “Realism and the Absence of Value.” *Philosophical Review* 127 (3):279-322
- Dorr, C. 2013. “Reading Writing the Book of the World.” *Philosophy and Phenomenological Research* Vol.87(3) 717-724.
- Engel, P. 2007. “Belief and Normativity.” *Disputatio* 2 (23): 197-202.

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<sup>12</sup>Dorr (2013) proposes something similar in his response to Sider. Dorr rejects the “idea that people with highly unnatural concepts are ‘making a mistake’ and suggests instead that ‘their only problem is that they are missing out on some interesting, important truths.’” (717)

<sup>13</sup>This view is thus more in line with ? and ?.

- Fine, Kit. 1977. "Properties, propositions and sets." *Journal of Philosophical Logic* 6 (1):135 - 191.
- Goodman, Jeremy. forthcoming. "Agglomerative Algebras." *Journal of Philosophical Logic*:1-18.
- Goodman, Nelson. 1955. *Fact, Fiction, and Forecast*. Cambridge, MA: Harvard University Press.
- Humberstone, I.L. 1992. "Direction of Fit." *Mind*, 101 (401): 59-83.
- McDaniel, K. 2017. "Normative Accounts of Fundamentality." *Philosophical Issues*, 27.1: 167-183.
- Sider, T. 2011. *Writing the Book of the World*. Oxford University Press.
- Wedgwood, R. 2002. "The Aim of Belief." *Philosophical Perspectives* 16 267-97.
- Williamson, T. 2000. *Knowledge and its Limits*. Oxford University Press.