Reply to Eli Hirsch[*]

Theodore Sider   July 19, 2013

I will focus on two main issues from Eli Hirsch's generous and probing comments. The first concerns my "privileged-description claim": that in order to be fully successful, a true representation must have a structure that "matches" reality's structure. In informal contexts I speak as if I understand matching in a Tractarian sense: the representation must stand for a fact whose parts carve at the joints and correspond one-to-one with the representation's parts. But since I ultimately reject the Tractarian conception of matching, Hirsch argues, my privileged-description claim is obscure.

I reject the Tractarian conception of matching because my regimentation of talk about structure is "entity-free". It's true that in informal contexts I say things like "the predicate 'has unit negative charge' carves at the joints", "the property of unit negative charge carves at the joints", "facts about negative charge are part of the world's fundamental structure", and "there is a joint in nature corresponding to negative charge". But ultimately structure is not about such entities as predicates, properties, facts, or "joints in nature" (section 6.3). In fact, it isn't about any entities at all. Thus the most basic claims about structure cannot employ a predicate: 'entity x carves at the joints'. (They must therefore differ from David Lewis's (1983; 1986, pp. 59–69) claims about naturalness, which use the predicate 'is a natural property'.) Instead my official regimentation of talk about structure employs an "operator", 'struc'.[1] This operator has an odd grammar: it attaches directly to expressions of multiple grammatical categories (to predicates, to sentential operators like 'and', etc.) to form complete sentences. Using it one can say, for example, that struc(has unit negative charge) and not struc(is grue), instead of making claims about predicates, properties, or other entities. Similarly, I would express the informal claim that conjunction carves at the joints by saying "struc(and)". (Not "struc('and')" or "struc(conjunction)"—the claim isn't about the word 'and' or an hypothesized abstract entity that it stands for. 'Struc' isn't a predicate.) Thus I don't want to understand matching as involving facts and their joint-carving parts, since I don't accept such things as joint-carving parts of facts (not at the fundamental level anyway).

---

[*]Thanks to Karen Bennett and Eli Hirsch.

[1]This is Hirsch's symbolization; in my book I use the symbol '$\mathscr{S}$'.

Hirsch finds this puzzling:

> Here is the best I'm able to make of this. When I say that struc(and) I am in effect saying that the word "and" in some sense contributes to the fundamentality of the fundamental truths in which it figures. The contribution does not consist in there being some joint in the world that "and" corresponds to; it does not consist in there being some fact in the world with the shape of corresponding true sentences of the form "p and q". What, then, does the contribution consist in? It seems as if Sider is trying to give us a form of Tractarian metaphysics ("language matches the structure of the world") minus language-shaped facts. That's a hard trick to pull off. The idea seems to be that truth is not enough, because the structure of our true sentences ought also to conform to "the structure of the world", even though the world contains no structured items that correspond to the structured sentences. This is, for me, hard going. Sider's "structure of the world" may seem to be intelligible only as something-we-know-not-what that plays the role of somehow imposing a metaphysical constraint on language beyond truth.

But why is my notion of the structure of the world so unintelligible, a mere "something-we-know-not-what"? When I speak of "the structure of the world", I am merely saying that struc(and), that struc(has unit negative charge), and so forth. And what do I mean by 'struc(and)'? Well, I mean struc(and)! This isn't short for anything about words, so it *doesn't* mean that the word 'and' contributes to the fundamentality of the fundamental truths in which it figures (though that certainly is a consequence of 'struc(and)'). As I make clear, 'struc' is an undefined expression, intended to play a certain specified theoretical role.

In part, Hirsch seems to be suspicious of 'struc' itself. (He's not the only one.) Perhaps this is because Hirsch doesn't buy my defense (chapter 2) of the legitimacy of introducing undefined terms like 'struc' (which I liken to theoretical posits in physics). But perhaps instead he's bothered by the "entity-free" nature of 'struc'. 'Struc' is supposed to be about a certain subject-matter (joint-carving), and yet, there is no class of entities that the subject matter concerns. How can the world be structured, Hirsch wants to know, if there are no structured items?

"Nominalists"—in a broad sense of the term—often encounter resistance to their unfamiliar concepts, or unfamiliar interpretations of familiar concepts, which they must introduce in order to avoid unwanted ontological commitments. Thanks to Quine (1948), Chisholm (1957), and Boolos (1984), nowadays one can mostly get away with saying "The sentence is meaningful", "I'm

appeared to redly", and "The Cheerios are in the bowl" without accepting meanings, sense data, or sets, since these entity-free concepts are by now entrenched. But where the trail has not yet been blazed, resistance to anything outside of the subject-predicate box remains strong. Arthur Prior put it well:

> The fact is that it is difficult for the human mind to get beyond the simple subject-predicate or noun-verb structure, and when a sentence or thought hasn't that structure but a more complex one we try in various ways to force it into the subject-predicate pattern. (1968, p. 15)

Prior's example was our tendency to convert conditional statements "If A then B", in which sentences A and B are not referring terms, into predicational statements "'A' implies 'B'", in which they are.[2]

Primitivists about modality normally express their modal claims using primitive sentential operators rather than primitive predicates of propositions.[3] 'Necessarily, either snow is white or snow is not white' is not about words, nor is it about propositions, nor is it about any other entity (other than snow); nevertheless it is a perfectly coherent worldly claim. For that matter, 'Snow is *not* white' is not about words or propositions or any entities at all (other than snow)—like 'necessarily', 'not' is an operator rather than a predicate—but nevertheless makes a coherent, worldly claim. Just so for 'struc(and)'.

To be sure, my regimentation has a downside: general statements about structure present a challenge. A parallel point is familiar from the literature on nominalism proper. Nominalists have an easy time with 'Ted is sitting', 'John is sitting', 'Ted is standing', and so forth, since the singular terms in these sentences name individuals; but generalizations such as 'Ted and John have something in common' and 'Ted is everything that John is' are more difficult since they contain quantifiers that seem to range over properties. Options for nominalists include rejecting all such generalizations, regarding the quantifiers in them as being over predicates, and accepting irreducible quantification into predicate position. I similarly have an easy time with talk of structure in single cases, such as "struc(cubical)" and "struc(and)", but generalizations, such as "anything that carves at the joints is more likely to be referred to" and "everything that carves at the joints is physical" are more difficult.

---

[2]His observation also extends to constructions that are subject-predicate, but are not in the familiar singular mode: people often convert Boolos's plural existential quantifier "there are some things…" to the singular "there is some plurality…".

[3]The best-known articles on the subject (e.g., Plantinga (1976); Stalnaker (1976)) do indeed speak of propositions (or states of affairs), but that is because these articles are primarily concerned with constructing possible worlds.

One might attempt to meet this challenge by accepting higher-order quantification. Then one could formulate statements like "$\exists F \, \text{struc}(F)$". But whatever one thinks about primitive second-order quantification,[4] its value in the present context is limited since the second-order variable 'F' can appear only in (first-level) predicate position, whereas 'struc' can attach to expressions of arbitrary grammatical category. For full generality, a sort of primitive higher-order quantification unlike any of the usual sorts would be needed. If an existential sentence "$\exists \alpha \, \text{struc}(\alpha)$" is to be implied by each of the following:

struc(has unit negative charge)

struc(and)

struc(there is)

the variable 'α' must have a bizarre grammar (corresponding to the bizarre grammar of 'struc'): it must be capable of occurring in every grammatical position that can be occupied by an argument of 'struc' (in predicate position, quantifier position, sentential connective position, and so forth).

I prefer to meet the challenge differently: by conceding that generalizations about structure cannot be formulated at the fundamental level, but introducing such generalizations at the nonfundamental level. Meanings may be constructed set-theoretically in some way; a predicate of those meanings, 'carves at the joints', may be defined in terms of 'struc'; and then generalizations using (nonfundamental) quantifiers over meanings and the predicate 'carves at the joints' may then be formulated.[5]

The issue of generality arises in connection with the notion of "matching", with which we began. In particular cases, matching can be characterized using 'struc': the true sentence 'There is a quark' matches the structure of reality if and only if struc(there is) and struc(is a quark). But to define the relation of matching in full generality we must bring in quantification over meanings and the predicate 'carves at the joints': a true sentence matches the structure of reality if and only if the meanings of its words carve at the joints. On the surface this is pretty much the Tractarian conception, but the underlying entity-free metaphysics, stated in terms of 'struc', is quite different. I take it to be in the Tractarian spirit nevertheless, but perhaps Hirsch would disagree.

---

[4]See my section 9.15.

[5]This isn't all straightforward; see Sider (2014).

The second issue on which I will focus is Hirsch's doctrine of "quantifier variance". Hirsch's (2011) defense of this doctrine has been immensely important for recent meta-metaphysics, both for critics and partisans. Its target is ontological disputes, such as those between Lewis (1986, 211–3) and Peter van Inwagen (1990) over whether there are such things as (nonliving) composite material objects, such as tables and chairs. This debate is "merely verbal", Hirsch says, because there are possible languages in which van Inwagen's claims come out true and possible languages in which Lewis's claims come out true, the difference being over what the quantifier 'there is' means. The first language's quantifier is not supposed to be a restriction of the second's, nor is 'there is' supposed to mean in either language something entirely unrelated to quantification. Rather, the two languages have selected two of the many possible "concepts of existence".

While certain details of Hirsch's argument are contestable, I believe that its core presents a deep challenge to ontology. My answer to it has been to concede his multiple quantifier meanings (existence-concepts) but argue that one of them carves at the joints, and thus is metaphysically distinguished. Ontology is about what there is in this distinguished sense.[6]

One of my arguments for a joint-carving quantifier-meaning is that without one we could not give a complete description of the world in joint-carving terms. I expected Hirsch to reply either by denying the metaphysics of joint-carving (at least as applied to quantifiers), or by denying that a complete description of the world in joint-carving terms is necessary, or by arguing that a complete description can somehow be given in non-quantificational joint-carving terms. But Hirsch now suggests a very interesting different reply: *all* of his quantifier meanings carve at the joints:

> One who accepts Sider's view of structure can…be an "egalitarian quanti-
> fier variantist"… Quantifier variantists can believe in structure without
> considering themselves obliged to come up with some quantifier-free
> description of the world…

The intuitive core of quantifier variance is the aphorism that no way of carving up reality into a domain of objects is *better than any other*; egalitarian quantifier variance would seem to vindicate this aphorism.

---

[6]Sider (2001, introduction, 2009, 2011, chapter 9). In what follows I will speak in terms of meanings and the predicate 'carves at the joints', rather than in terms of 'struc'.

One might object that this results in a kind of "redundancy" at the fundamental level. Intuitively, a complete description of reality can be achieved either with the "Lewisian quantifer" or with the "Inwagenite quantifier" (plus appropriate other joint-carving notions, such as predicates of physics), and so there's no need to use both in one's fundamental theory. But as Hirsch notes, I myself argue that accepting such redundancy is sometimes the right thing to do. Given that 'not' carves at the joints, it would be redundant to say that *both* 'and' and 'or' carve at the joints; but how to choose just one? One might plead ignorance; but instead, in order to avoid "metaphysical arbitrariness", one might claim that each carves at the joints, thus embracing redundancy (section 10.2).

(The issue of redundancy is one of the thorniest connected with joint-carving. What one *wants* is a metaphysics of joint-carving on which the "*or* versus *and*" question simply doesn't arise. But that is difficult to achieve. Denying the legitimacy of applying joint-carving to logic is unfounded, and anyway wouldn't avoid similar questions outside of logic, such as "*part* versus *overlap*". Saying that it's indeterminate which carves at the joints is presumably unavailable if joint-carving itself carves at the joints, as I think it does.)

I will give two arguments against egalitarian quantifier variance. First, it posits far *more* redundancy than the egalitarian position about conjunction and disjunction (even if the latter is extended to the claim that all the one- and two-place truth functions carve at the joints[7]). For it's not just the Inwagenite and Lewisian quantifiers that are said to carve at the joints. Hirsch's idea is presumably that *all* possible quantifier meanings carve at the joints.[8] There is, to be sure, a delicate question of what counts as a possible quantifier meaning. The intuitive idea is that possible quantifier meanings must only countenance objects that are consistent with certain "given" facts: they are free to countenance Hirsch's (1982, p. 32) incars and outcars, but not ghosts or God. (Incars are objects with the persistence conditions of cars, except that they can exist only inside garages; outcars are similar but can exist only outside of garages.) But in any case, the view would posit of a massive array of redundant joint-carving meanings.

Compare the question in the metaphysics of quantity of which properties or relations concerning mass (say) carve at the joints. One very unattractive

---

[7]The claim that all finite truth functions carve at the joints, on the other hand, would involve massive redundancy, and for that reason strikes me as implausible.

[8]Otherwise the position isn't as deflationary as quantifier variance is meant to be.

answer is that the sole one is the *mass-in-grams* relation—the relation that holds between a physical object o and a real number x iff the mass of o is x grams. This is unattractive mainly because of its arbitrariness: why grams rather than some other unit, such as kilograms, or pounds? The arbitrariness could be avoided by holding that for *each* of the continuum many choices of unit, u, the relation *mass-in-unit-u* between physical objects and real numbers carves at the joints. But surely no one—not even a platonist—would accept this "egalitarian" view about mass. (This is not to deny that all scales are on a par. For the egalitarian view is just one way of securing that truth; a far better one is holding that there is a small number of joint-carving scale-invariant mass relations, such as *physical object o_1 is more massive than physical object o_2*.[9] Given appropriate assumptions about the behavior of such relations, one can prove via "representation theorems" that numerical mass values under any chosen scale may be used to represent the facts about the scale-free mass relations.[10])

   We should reject the egalitarian view of mass because of the extent of the redundancy it implies. For the same reason we should reject egalitarian quantifier variance. One might object that if redundancy is objectionable then its extent does not matter: *any* redundancy would be objectionable, including the redundancy implied by egalitarianism about truth-functions. But this misunderstands the way in which redundancy of joint-carving meanings is "objectionable". If redundancy were somehow metaphysically incoherent—if, say, the joint-carving meanings were *defined* as a minimal supervenience basis for all facts—then the objection would be correct. But redundancy is not metaphysically incoherent ('joint-carving'—or rather, 'struc'—is undefined, recall). The sense in which redundancy is objectionable is instead epistemic: other things being equal it is reasonable to believe that the joint-carving meanings are not redundant. This is just a corollary of the view that simple theories are more reasonable to believe, assuming that part of "simplicity" is simplicity of fundamental ideology. Such epistemic factors are matters of degree, and defeasible by other epistemic factors such as avoiding arbitrariness, so the extent of the redundancy *does* matter.

   Measuring redundancy is admittedly fraught. As Hirsch points out, "joints in nature" aren't things that can literally be counted. I have been speaking as if there are such things as joint-carving meanings, but this is just one of those cases where it's more natural to speak using nouns; my ultimate claims

---

[9]Or higher-order versions of this view, based on the approach of Mundy (1987).
[10]See Krantz et al. (1971).

are to be stated in terms of 'struc', and carry no commitment to joint-carving meanings. Moreover, the complexity of a theory is not a simple function of how many joint-carving terms it contains. Nevertheless, it seems safe to assume that if struct(q_1) and struct(q_2) and … and struct($q_{1,000,000}$) (imagining that the quantifiers "q_i" from one million of Hirsch's ontological languages have been imported into our language) then the world is very complex!

My second argument against egalitarian quantifier variance is that some of the quantifier meanings seem intuitively to be bad candidates for carving at the joints. For example, the quantifier from Hirsch's incar language, in which one can say truly that "there exist no cars, but there do exist incars and outcars", interacts closely with the nonfundamental subject matter of cars and garages, and does so in a bizarre manner. The quantifier that counts mereological atoms as having a fusion if and only if they are 666 in number seems oddly arbitrary. And for that matter, the quantifier meaning that recognizes all and only the objects of common sense seems too anthropocentric to be a likely candidate for joint-carving.

Hirsch might reply by restricting his claim that all quantifier meanings carve at the joints to the more "objective" and "non-arbitrary" quantifier meanings, such as the one that counts all pluralities as having fusions, the one that counts no pluralities as having fusions, and the one that counts only pluralities that would compose an instance of a natural kind as having a fusion. But this would forsake much of the deflationary impact of quantifier variance, and would undermine Hirsch's defense of common sense ontology.

An intriguing alternate reply might be based on Karen Bennett's (2004) discussion of "plenitude", the view that each modal profile consistent with the nonmodal facts is instantiated by some object. To illustrate, here where I am located, sitting and typing, there exist according to plenitude (at least) three things distinct from me that have the same nonmodal properties as I do: something that essentially types and accidentally sits, something that accidentally types and essentially sits, and something that essentially types and essentially sits. Bennett points out that even though plenitude implies that modal properties are "brute" in the sense that the modal properties possessed by an individual thing do not supervene on its nonmodal properties, it nevertheless avoids a certain sort of arbitrariness since *all* consistent modal profiles are filled.

Bennett's point introduces a very interesting general strategy: mitigate apparent arbitrariness (or other untowardness) in individual cases by appealing to non-arbitrariness at the level of all cases. The reply on behalf of Hirsch that I have in mind uses this general strategy: it says that even though many of

8

Hirsch's quantifier-meanings seem arbitrary, anthropocentric, or in some other way nonfundamental, the theory as a whole is not arbitrary or anthropocentric because *all* possible quantifier meanings carve at the joints.

Is this reply as successful in Hirsch's case as in Bennett's? One difference is that in Bennett's case, a single quantifier meaning is at issue, and arbitrariness at the level of individual objects is mitigated by nonarbitrariness at the level of all objects. In Hirsch's case, on the other hand, the anthropocentricity or arbitrariness is at the level of certain quantifier meanings, and this isn't mitigated at that level; what is said to be nonarbitrary is the totality of quantifier meanings. Since the concern was about those individual anthropocentric or arbitrary quantifier meanings—they don't seem to carve at the joints—it isn't clear that the concern is answered. For comparison: claiming that *all* properties carve at the joints surely wouldn't make it easier to accept that, despite its anthropocentricity, the property *having a beautiful face* carves at the joints (or would it?).

References

Bennett, Karen (2004). "Spatio-Temporal Coincidence and the Grounding Problem." *Philosophical Studies* 118: 339–71.

Boolos, George (1984). "To Be Is to Be the Value of a Variable (or to Be Some Values of Some Variables)." *Journal of Philosophy* 81: 430–49. Reprinted in Boolos 1998: 54–72.

— (1998). *Logic, Logic, and Logic*. Cambridge, MA: Harvard University Press.

Chisholm, Roderick (1957). *Perceiving: A Philosophical Study*. Ithaca, NY: Cornell University Press.

Hirsch, Eli (1982). *The Concept of Identity*. Oxford: Oxford University Press.

— (2011). *Quantifier Variance and Realism: Essays in Metaontology*. New York: Oxford University Press.

Krantz, David H., R. Duncan Luce, Patrick Suppes and Amos Tversky (1971). *Foundations of Measurement*. New York: Academic Press.

Lewis, David (1983). "New Work for a Theory of Universals." *Australasian Journal of Philosophy* 61: 343–77. Reprinted in Lewis 1999: 8–55.

— (1986). *On the Plurality of Worlds*. Oxford: Blackwell.

— (1999). *Papers in Metaphysics and Epistemology*. Cambridge: Cambridge University Press.

Loux, Michael J. (ed.) (1979). *The Possible and the Actual*. Ithaca, NY: Cornell University Press.

Mundy, Brent (1987). "The Metaphysics of Quantity." *Philosophical Studies* 51: 29–54.

Plantinga, Alvin (1976). "Actualism and Possible Worlds." *Theoria* 42: 139–60. Reprinted in Loux 1979: 253–73.

Prior, A.N. (1968). "Changes in Events and Changes in Things." In *Papers on Time and Tense*, 7–19. London: Oxford University Press.

Quine, W. V. O. (1948). "On What There Is." *Review of Metaphysics* 2: 21–38. Reprinted in Quine 1953: 1–19.

— (1953). *From a Logical Point of View*. Cambridge, MA: Harvard University Press.

Sider, Theodore (2001). *Four-Dimensionalism*. Oxford: Clarendon Press.

— (2009). "Ontological Realism." In David J. Chalmers, David Manley and Ryan Wasserman (eds.), *Metametaphysics*, 384–423. Oxford: Oxford University Press.

— (2011). *Writing the Book of the World*. Oxford: Clarendon Press.

— (2014). "Reply to Jonathan Schaffer." *Analysis Reviews* .

Stalnaker, Robert (1976). "Possible Worlds." *Noûs* 10: 65–75. Reprinted in Loux 1979: 225–34.

van Inwagen, Peter (1990). *Material Beings*. Ithaca, NY: Cornell University Press.