
The main aim of this ambitious and impressive recent book from Theodore Sider is to argue for realism about *structure*; to ‘generalize the concept of structure, investigate its nature, use it as the foundation of ‘metemetaphysics’, and reconceptualize metaphysics in terms of it’ [5]. There is an objectively privileged way to write the book of the world, and, as such, merely specifying truths isn’t enough; our theories must also employ the *right* notions, notions that carve reality at its joints – notions that are structural.

Siderian structure is a generalization and extension of Lewisian *naturalness*. According to the abundantist conception, for any set of objects, no matter how arbitrary, there corresponds a property. This resulting immense abundance is unable to properly perform many of the central tasks for which properties are postulated; in particular, any two objects both share infinitely many such properties. This leaves us unable to track genuine qualitative similarity and difference – two electrons would be as similar as an electron and a cow. To solve this problem, Lewis (1983) postulated an elite minority of special, *natural* properties, the sharing of which serves to fix qualitative similarity. Natural properties, according to Lewis, demarcate the fundamental, objective ways that things can be similar (or different), which the abundant, non-natural rabble fail to do. But that’s not all! Lewis also used natural properties to analyse the notions of lawhood, causation, intrinsicality, supervenience, and Moorean facts of common sense, as well as a tool to handle Kripkenstein rule-following worries and to respond to Putman’s model-theoretic objections to metaphysical realism. And, though Lewis left the metaphysical underpinnings of naturalness unsettled, he was confident that this list of applications made naturalness vital to systematic philosophy.

Yet, for all its merits, naturalness is restricted in scope, applying only to predicates. This is a significant limitation because ‘the domains in which we need to speak of [carving at the joints] are not confined to the predicate’ [87]; disputes about, e.g. ontology, time, modality, and logic concern the joint-carvingness of quantifiers, operators, and logical connectives. Further,

…in choosing a fundamental theory we often face the choice of whether to adopt increased ideology or ontology. But theories which forgo ontology at the cost of increased ideology often do so precisely by introducing distinctive non-predicate ideology. … So to evaluate proposed trades of ontology for ideology – which we must do in order to choose which fundamental theory to believe – we need to speak of joint-carving expressions other than predicates. [87]

Thus Sider’s innovation is to go ‘beyond the predicate’ via the postulation of structure. Structure is like naturalness, in that it is objective and concerns carving nature’s joints. However it differs from naturalness in two ways. First, structure is *ideological*, rather than ontological. For Lewis, a predicate is natural iff it stands for an appropriate sort of abstract entity – a natural property. But while this works for predicates, postulating entities underlying quantifiers, operators, and logical connectives seems to be fundamentally wrong-headed: ‘to say [that ‘and’ carves at the joints] is not to say something about an alleged object Conjunction. It is not to say anything about any thing at all. It is nevertheless to say something true, something objective, something about reality’ [92]. Second, structure, unlike naturalness, can apply to any grammatical category, including names, quantificational phrases, and logical connectives. This flexibility allows us to say that, for example, the world has a quantificational structure – i.e., that, in some sense, ‘∃’ carves nature at its joints.

Fittingly, Sider’s primary argument for realism about structure is, like his notion, an extension of Lewis’s: according to Sider, accepting structure gives metaphysicians a tool for better understanding and explicating a plethora of important, related notions. Structure is, one might say, an offer you can’t refuse. This way of arguing has familiar Quinean roots: Quine
states we ought to regard ourselves as committed to what is indispensable to our best theories. These commitments, Sider suggests, go beyond the theory’s ontology, because, ‘the confirmation of a theory confirms its ideological choices’. So, much like how we should regard as part of the world the indispensable ontology of our best theory, we should ‘regard as joint-carving the ideology that is indispensable in your best theory’ [14]. And the ideology of the best theory is one that includes structure.

The bulk of the book is concerned with this utility argument for structural realism. As such, the first part (Chapters 1-5) is spent detailing the connections between structure and other notions. After showing how structure inherits from naturalness the ability to account for similarity & intrinsicality. Sider goes on to argue that structure is primitive, nonreducible, and – most importantly – objective. Structure is, for Sider, not tied to us in any way: concepts are structural because of the way the world is, not because of their significance in our conceptual scheme/language. Yet this seems problematic. One of Lewis’s major claims concerning naturalness was that it had nothing to do with a property/predicate’s place in our conceptual scheme; all that mattered was whether the property carved at the objective ‘joints of nature’. However, as Taylor (1993) demonstrated, a ‘vegetarian’, theory-relativized account of naturalness is capable of performing all the same tasks as its more substantial, objective cousin. The upshot is we can have all the benefits of naturalness without the heavy-duty claim that the notion is objective.

Now, as structure is an extension of naturalness, we might wonder if the same trick can be pulled: is it possible to come up with a vegetarian, theory-relativized structure*? In principle, there is nothing blocking a vegetarian metaphysician from doing so. However, Sider retorts that this non-objective structure* is unacceptable.

Speaking just for myself, [non-objective structure] is incredible. It is really, really hard to believe that the fact that electrons go together, in a way that electrons-or-cows do not, is merely a reflection of something about us. … The argument here, such as it is, is that any subjectivity in the notion of structure would infect all the domains in which structure is applied. If structure is just a reflection of our language (or whatever) then so are the facts about similarity, intrinsicality, laws of nature, the intrinsic structure of space and time… And this is incredible. [18]

The source for Sider’s incredulous stare is his knee-jerk realism, according to which the fundamental aim of inquiry is to conform to, rather than make, the world. Sider admits that, ‘this picture is perhaps my deepest philosophical conviction. I’ve never questioned it; giving it up would require a reboot too extreme to contemplate; and I have no idea how I’d try to convince someone who didn’t share it’ [18]. It is commitment to this idea that pushes Sider towards objective structure. As he puts it,

The realist picture requires the ‘ready-made world’ that Goodman (1978) ridiculed; it requires the world to really be as physics says; it requires objective distinguished structure. To give up on structure’s objectivity would be to concede far too much to those who view inquiry as being merely the investigation of our own minds. [65-6, emphasis mine]

Now, I’m no internal realist (though some of my best friends are), but if I were, I’d find the above entirely unmoving – after all, one goes in for structure* precisely because one thinks these matters are a reflection of our conceptual scheme. And to assert that knee-jerk realism gives us objective structure is merely to bang the table. We therefore seem to be presented with a crossroads: if you are, like Sider, a true believer in knee-jerk realism, then you should accept objective structure. Meanwhile, if you’re of the ‘postmodernist forces of darkness’ [65] who reject knee-jerk realism, you can accept non-objective structure* and mimic Sider’s project without the objective foundation. The end result seems to be the same, as all of structure’s myriad applications can be recovered. Even this vegetarian world would have ‘joints’ to be carved.
After showing how structure helps to explicate the notions of lawhood, explanation, reference, induction, confirmation, and physical geometry, chapters 4 & 5 concern structure’s application to issues in metametaphysics. First, Sider develops a new theory of substantivity (as well as of the related notions of conventionality and subjectivity). According to Sider, a question is nonsubstantive iff it contains an expression whose candidate meanings are such that (i) each opposing view about the question comes out true on some candidate; and (ii) no candidate carves at the joints better than the rest [49]; it is substantive if the expressions involved carve nature at the joints (or near enough). Then, employing this novel theory, Sider rebuts various forms of metaphysical deflationism (the view that metaphysical questions are merely verbal/conceptual), suggesting that, ‘in the case of fundamental metaphysics, the most straightforward way to resist deflationism is to claim that the crucial expressions in the debate carve perfectly at the joints’ [71]. This strategy is viable because the metaphysician can, when challenged by the deflationist about the substantivity of a question formulated using a natural-language expression E,

...discard E, and enter the metaphysics room, so to speak. We could replace the ordinary expression E with an improved expression E* that we stipulate is to stand for the joint-carving meaning in the vicinity. The question we ask in the metaphysics room, cast in terms of E* rather than E, is substantive. Indeed, it is superior to the original question, for it concerns reality’s fundamental structure, rather than its merely conventional or projected aspects. [74]

As a test-case for his account of substantivity, Sider show how the personal identity debate is nonsubstantive (because ‘there is no perfectly fundamental unity relation over person stages’ [73]) while the extended simples debate is metaphysically deep (despite the fact that such a dispute is ‘conceptually shallow’, having ‘few implications outside rarified metaphysics’ [74]).

For all these applications, structure is of minimal use if we don’t know how it works. Thus, in the second part of the book (Chapters 6-8), Sider details his theory of structure. In particular, after arguing for going ‘beyond the predicate’, Sider introduces the grammatical structure operator, \( \mathcal{S} \). This allows the development of a theory of fundamentality, cast in terms of structure. According to Sider, the fundamental is complete (every nonfundamental fact holds in virtue of the fundamental), pure (fundamental facts include only notions that perfectly carve at the joints), subpropositional (\( \mathcal{S} \) applies to quantifiers, names, predicates, etc., not just complete sentences), absolute (fundamentality is all-or-nothing, rather than comparative), determinate (no vocabulary ‘distinctive of indeterminacy’ is structural [137]), and itself fundamental (structure is itself structural).

Two issues are worth flagging up. First, commitment to purity brings with it a substantial problem: Supposing that ‘city’ is not a structural notion, claims like

(I) There is a city in-virtue-of Fundamental Fact F

cannot be fundamental, though, given completeness, (I) must hold in virtue of some fundamental truth. Thus purity ‘requires facts about the relationship between the fundamental and the nonfundamental to be themselves nonfundamental’, and ‘it requires there to be facts in virtue of which in-virtue-of facts hold’ [107].

Sider’s solution is to introduce metaphysical semantics, which specifies truth-conditions for ordinary sentences in purely joint-carving terms. Unfortunately, we’ve ‘no chance of actually giving a metaphysical semantics for any significant fragment of a natural language’ [117]. Instead, we should content ourselves with specifying ‘toy’ metaphysical truth-conditions, ‘not to be a real metaphysical semantics, but rather to convince us that there is a real metaphysical semantics, even if that… is too complex for us to discover’. But these toy promissory notes are cold comfort to those who are genuinely troubled by the relationship
between the fundamental and the nonfundamental. In fact, one can see the impossibility of our being able to specify metaphysical truth-conditions as a strong reason for preferring a conception of fundamentality which forgoes purity.

Second, Sider thinks that structure is absolute, rather than comparative. However, as he admits, we need a comparative notion for many of structure’s applications. To reconcile this, Sider suggests distinguishing the fundamental notion of structure from the notion of structure-in-application; the former is absolute, while talk of the latter can be defined-up via the provision of a metaphysical semantics. However, when it comes to actually giving this semantics, Sider is brutally honest: ‘I’d like to do this, but I don’t know how’ [132]. So Sider seems stuck: he needs the comparative notion, but he wants to have only the absolute and he doesn’t know how to derive the former from the latter.

Interestingly, a ‘more structural than’ operator would allow Sider to capture the comparative notion, and could be used to define-up the absolute notion. However, Sider cannot accept such an operator, because it would violate his commitment to purity. But why not abandon purity and go in for the comparative notion of structure (especially in light of the above difficulties concerning purity)?

Chapter 8 involves Sider contrasting his theory of fundamentality with five friendly rivals (‘friendly’ in that these all offer pictures similar to Sider’s, rivals because their fundamental notions aren’t structure): two accounts derived from Fine (2001), one employing both Fine’s notions of ground and of being real, the other invoking only the latter, a Truthmaking account, Schaffer’s entity-grounding story, and an entity-fundamentality view. In the end, Sider concludes his structure-fundamentality is preferable, though some of the alternatives (especially the second Finean account) aren’t too shabby. Anyone interested in fundamentality would do well to read this discussion, as Sider offers several substantial criticisms to the rival accounts (and, to his credit, highlights problems his account faces too).

Finally, in the third part of the book (Chapters 9-12), Sider returns to applications, demonstrating how structure allows metaphysicians to make headway on metaphysical debates concerning the nature and status of ontology, logic, time, and modality. The book then closes with a sample ‘worldview’ built using structure and only the most minimal ontology and ideology. The discussion of ontology is particularly interesting, with this chapter undoubtedly setting the tone for future metaontological debates. Taking the line above about ‘entering the metaphysics room’, Sider suggests that we ought to conduct our ontological debates using the language of Ontologese, whose quantifiers are stipulated to carve at the joints [172]. Consequently, Ontologese ontological questions are, by definition, substantive, even if ordinary language ontological questions are not. (One might worry, can we mere mortals speak Ontologese? While Sider doesn’t directly address this point, he clearly thinks we can, provided we already understand English. This is because, barring the fact that they carve at the joints, Ontologese quantifiers behave exactly like the ordinary English quantifiers.) After (convincingly) arguing that the debate must be about the joint-carvingness of the quantifiers, Sider offers four potent objections to Hirsch-style quantifier variance [181-188]. He also objects to ‘Easy Ontology’ deflationism, which holds that questions of ontology are settled by analytic truths. Sider concludes by discussing a variety of ontological issues (ontological commitment, NeoMeinongian conceptions of ontology, and higher-order, plural, and generalized quantification) in light of his ontological realism.

Though I have occasionally been critical, this book is a masterwork, weaving together numerous disparate topics in metaphysics, logic, and philosophy of language, all under the banner of advancing realism about structure. Reading and thinking carefully about it will prove fruitful to anyone interested in metaphysics. I am confident that this book will doubtlessly structure future debates about fundamentality, substantivity, metametaphysics, and metaphysical realism.
References