

FORMS OF ANTI-INDIVIDUALISM

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Structuralism seminar

1. Antihaecceitism

The nonqualitative globally supervenes on the qualitative—possible worlds that are alike qualitatively are alike simpliciter.

Postmodal critiques:

- The modal thesis ought to derive from some postmodal thesis.
- The modal thesis is trivial in the mathematical case
- The modal thesis doesn't deliver the payoffs.

2. Eliminativist structural realism

This would seem to entail a corresponding shift from a metaphysics of objects, properties, and relations, to one that takes structure as primitive. (Ladyman, 1998, p. 418)

...the logical variables and constants [are] mere placeholders which allow us to define and describe the relevant relations which bear all the ontological weight (French and Ladyman, 2003, p. 41)

...the world has an objective modal structure that is ontologically fundamental, in the sense of not supervening on the intrinsic properties of a set of individuals. According to OSR, even the identity and individuality of objects depends on the relational structure of the world. Hence, a first approximation to our metaphysics is: "There are no things. Structure is all there is." (Ladyman and Ross, 2007, p. 130):

What could it mean for there to be a structure without nodes, relations without relata? The complaint does not arise from metaphysical conservatism, but rather from an insistence that a foundational account be properly spelled out. We need clear choices of basic notions, rules governing them, and methods for using these notions in a foundational account of scientific theories.

In lieu of a more appropriate framework for structuralist metaphysics, one has to resort to a kind of “spatchcock” approach, treating the logical variables and constants as mere placeholders which allow us to define and describe the relevant relations which bear all the ontological weight. (French and Ladyman, 2003, p. 41)

3. Bundle theory

A standard version:

- An ontology of universals, plus fusions of universals.
- Primitive predicates: ‘compresent’, ‘part’ (or ‘fusion’)
- Standard mereology

Problem: There is a bundle of universals including *being golden* and *being a mountain*. Problem assumes that a bundle is any old fusion of universals, and also:

Bundles \Rightarrow ordinary claims The ordinary claim “some object is F ” is true (or justified, etc.) if there exists some bundle of universals containing the universal F -ness as a part

Response: bundles aren’t just any old fusions:

Definition of bundles A bundle is a fusion of compresent universals. (I.e., a fusion of some universals, the U s, such that compresent(the U s).)

Problem: how to incorporate relations into bundles?

Nonstarter: bundle the relation into the bundles of its relata. (Suppose two things each bear R to something. So each gets R in its bundle. How to tell whether the things bear R to each other?)

Slightly better: define individuals as bundles of monadic universals, but then *ascribe* relations to the bundles

Problem: in purely relational structures there are no monadic universals

Problem: intrinsically alike things are identified

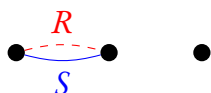
Reponse to second problem (Hawthorne, 1995): the identification may be accepted; a single bundle is multilocated

Problem: cannot “link” distinct instantiations of relations (Hawthorne and Sider, 2002)

Case 1: three duplicate particulars arranged on a line, with adjacent particulars separated by five feet. Relation R holds between the left two objects and relation S holds between the right two objects:



Case 2: as before, except now R and S each hold between the left two objects:



In each case, the facts Hawthorne provides are the same, where B is the thrice-located bundle in question:

B is five feet from itself

B is ten feet from itself

B bears R to itself

B bears S to itself

What’s needed is a link between the facts involving the relations R and S , e.g., that the *very same particulars* that instantiate R also instantiate S .

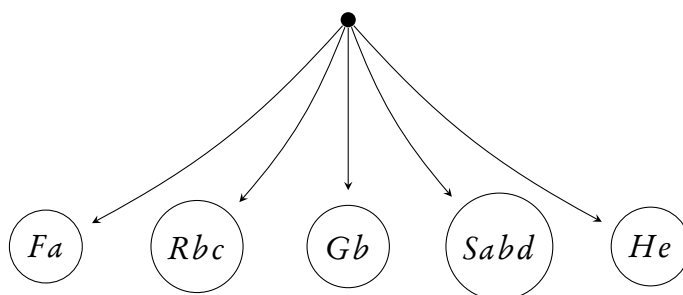
4. Ground and monism

In mathematics, I claim, we do not have objects with an ‘internal’ composition arranged in structures, we have only structures. The objects of mathematics ... are structureless points or positions in structures. As positions in structures, they have no identity or features outside a structure. (Resnik, 1981, p. 530)

Each mathematical object is a place in a particular structure. There is thus a certain priority in the status of mathematical objects. The structure is prior to the mathematical objects it contains, just as any organization is prior to the offices that constitute it. The natural-number structure is prior to 2, just as “baseball defense” is prior to “shortstop” and “U.S. Government” is prior to “vice president.” (Shapiro, 1997, p. 77)

Priority monism (Schaffer, 2010) The Cosmos grounds every other entity

But *how* does this grounding work? What is it about the Cosmos, at the fundamental level, that enables it to ground sub-Cosmos facts? Without an answer to this question, monism becomes either underspecified (another criticism in the spirit of Wilson (2014)) or “magical”:



Fundamentality-theoretic monism (vague): everything fundamental is at the level of the Cosmos. Clearer statement: no fundamental properties or relations of sub-Cosmos entities.

No such account has actually been given. Will require a great many fundamental properties. And no reason to think that they will obey simple laws.

How does the situation change given Schaffer’s current view about grounding, which features laws of metaphysics governing variables concerning sub-world entities?

5. Bare particulars

“Bare particulars”: individuals *do* exist, but have no fundamental monadic properties; their only fundamental features are relations.

Concerns about how bare particulars would be “individuated” are misguided. If concepts of existence and certain relations are fundamental, there is no need for a further ground of the existence of bare particulars.

Perfectly good metaphysics, but not really structuralist either. Bare particulars give structuralists only a little of what they want.

6. Weak discernibility

Individuals are strongly discernible iff some monadic predicate applies to one but not the other; individuals are weakly discernible iff some binary predicate applies to the two in different patterns (e.g. Rxx but not Rxy , Rxy but not Ryx , etc.)

“...bodies can be identified by their relations to one another; then a particular body is no more than a particular pattern-position” (Saunders, 2003, p. 163).

Concern 1: weak discernibility doesn't imply or enable any account of what individuals are that implies that an individual “is no more than a particular pattern-position”.

But perhaps the importance of weak discernibility is that it enables a reduction of identity. For example, if the fundamental predicates are just F and R , $x = y =_{\text{df}} (Fx \leftrightarrow Fy) \wedge \forall z((Rxz \leftrightarrow Ryz) \wedge (Rzx \leftrightarrow Rzy))$.

Objection 1: the definition makes laws involving identity more complex.

Objection 2: Permuted worlds/models $W(a, b)$ and $W(b, a)$ are i) distinct, and ii) given in fundamental terms

7. Algebraic and quantifier generalism

Dasgupta's (2009; 2015) “algebraic generalism”:

Ontology: universals, both properties and relations

Ideology: “term functors”, which are used to form names of complex universals, plus the predicate ‘obtains’.

Example: the term functor c is the surrogate for existential quantification. If R is a two-place relation then cR is a one-place property, the property we'd normally describe as that of bearing R to something, and ccR is the zero-place “property” we'd normally describe as something bearing R to something. Instead of saying $\exists x \exists y Rxy$, Dasgupta would say: “ ccR obtains”.

- Clear theory

- Accommodates relations, “linkage”.
- Doesn’t require monadic properties
- Blocks permutations in a strong sense: permuted scenarios receive the same fundamental description

Related view: Quantifier generalism: quantified facts are fundamental.

7.1 Holism and expressive resources

- Each form of generalism is holistic: to describe a complex system, a single sentence is needed—a ramsey sentence or its translation into term-functorese for the entire system.
- So for certain infinite systems we’ll an infinite sentence, or a term-functorese translation
- My main concern concerns parsimony: infinitary logical concepts must be fundamental
- Further concern in the case of algebraic generalism: unclear whether the view generalizes
- Defense of the idea that ideology more important to parsimony than ontology: additions to ideology require distinctive laws

7.2 Holism and explanation

Each form of generalism will also make explanations of particular matters of fact highly complex, when cast in fundamental terms.

8. Dasgupta’s argument again

From a certain “realist” point of view, the complaint about undetectability carries little weight.

The complaint about redundancy, for a realist about fundamental concepts, is problematic because arbitrary “aspects” of structure needn’t correspond to fundamental concepts.

Judgments of redundancy of structure, on this viewpoint, become admittedly fraught (Dasgupta and Turner, 2015).

Galilean ideology spatial-distance-at-a-time, temporal distance, affine connection

Newtonian ideology spatial-distance-at-a-time, temporal distance, affine connection, same-place-as

Alternate Newtonian ideology cross-time-spatial-distance, temporal distance

9. How far to go?

Would a parallel argument to Dasgupta's show that even charge and mass should be eliminated from classical physics? (Turner, 2015)

Distinction: permutations of situations allowed by a theory are allowed *by that very theory, as originally stated*, vs permutations of allowed situations are allowed *by a permuted version of the theory*. (Thanks to Jeff Russell.)

Which is bad? If the argument is based on redundancy then perhaps only the former is bad. If the complaint is about unobservable facts, then even the latter should be bad. But then, where to stop? Won't *any* theory contain "constants"?

References

Barnes, Elizabeth (ed.) (2015). *Current Controversies in Metaphysics*. Routledge.

Dasgupta, Shamik (2009). "Individuals: An Essay in Revisionary Metaphysics." *Philosophical Studies* 145: 35–67.

— (2015). "Quality and Structure." In Barnes (2015).

Dasgupta, Shamik and Jason Turner (2015). "Postscript." In Barnes (2015). Postscript to Turner (2015).

French, Steven and James Ladyman (2003). "Remodelling Structural Realism: Quantum Physics and the Metaphysics of Structure." *Synthese* 136: 31–56.

Hawthorne, John (2006). *Metaphysical Essays*. Oxford: Oxford University Press.

- Hawthorne, John and Theodore Sider (2002). "Locations." *Philosophical Topics* 30: 53–76. Reprinted in Hawthorne 2006: 31–52.
- Hawthorne, John (O’Leary-) (1995). "The Bundle Theory of Substance and the Identity of Indiscernibles." *Analysis* 55: 191–96.
- Ladyman, James (1998). "What is Structural Realism?" *Studies in History and Philosophy of Science* 29: 409–24.
- Ladyman, James and Don Ross (2007). *Every Thing Must Go: Metaphysics Naturalized*. Oxford University Press. With David Spurrett and John Collier.
- Resnik, Michael (1981). "Mathematics as a Science of Patterns: Ontology and Reference." *Noûs* 15: 529–50.
- Saunders, Simon (2003). "Indiscernibles, General Covariance, and Other Symmetries." In Abhay Ashtekar, Jürgen Renn, Don Howard, Abner Shimony and S. Sarkar (eds.), *Revisiting the Foundations of Relativistic Physics. Festschrift in Honour of John Stachel*, 151–73. Kluwer.
- Schaffer, Jonathan (2010). "Monism: The Priority of the Whole." *Philosophical Review* 119: 31–76.
- Shapiro, Stewart (1997). *Philosophy of Mathematics: Structure and Ontology*. New York: Oxford University Press.
- Turner, Jason (2015). "Can We Do without Fundamental Individuals?" In Barnes (2015).
- Wilson, Jessica M. (2014). "No Work for a Theory of Grounding." *Inquiry* 57: 535–79.