Debarnot, M.-T. (1987). The Zij of Habash al-Hāsib: A Survey of MS Istanbul Yeni Cami 784/2. *Annals of the New York Academy of Sciences.*

Fictionalism and Counterpossibles

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Can we account for the content of mathematical talk without countenancing abstract objects? Platonists say no, nominalists say yes. The platonist accounts for the content of such talk via direct reference to abstract objects. As the nominalist is committed to a different view of the ontological domain – one on which everything that exists is concrete – she cannot take the realist, direct referential approach. She thus incurs the burden of accounting for the content of mathematical statements otherwise. Fictionalism is a prominent anti-realist strategy for meeting the nominalist explanatory burden. Contrary to the platonist's categorical acceptance of the apparent commitments of mathematical statements, the fictionalist accepts such commitments only hypothetically, as a means to capturing the concrete content of mathematical statements. One brand of fictionalism – namely, counterfactualist fictionalism (CF) – captures fictionalism's hypothetical stance via counterfactual conditionals: the existence of abstract objects is entertained counterfactually, and the content of mathematical statements is what holds in such counterfactual scenarios [4, 1]. On this approach, the truth-value of categorical sentences involving apparent commitment to numbers is parasitic on the truth-value of counterfactual statements involving the supposition of the existence of numbers. To bear out his proposal in a principled way, the CF-ist needs a systematic account of the truth-conditions of counterfactuals, one that delivers adequate verdicts of truth/falsity with respect to categorical statements involving abstract objects.

That an account of counterfactuals adequate for CF exists is put into doubt by the orthodox semantics of counterfactuals [6, 3], viz. its vacuous verification of counterfactuals with impossible antecedents (or counterpossibles). If nominalism is read as a thesis that holds of (metaphysical) necessity, the statements the CF-ist hypothetically entertains within the antecedents of counter- factuals (e.g. 'There exist numbers') are metaphysical impossibilities. But then, a combination of nominalism and an orthodox semantics yields the verdict that all fictionalist counterfactuals are vacuously true. This result is unacceptable from the viewpoint of CF.

The trivialising result can be avoided if we accept an alternative semantics, one on which counterpossibles can be non-vacuously true or false [1], [5]. Williamson's recent defence of a vacuous semantics for counterpossibles [7, 8] suggests, however, that this revisionary road is best taken as a last resort.

This presentation considers the prospects of CF in light of the newly sustained case

against non-vacuous treatments of counterfactuals. We survey available lines of fictionalist resistance – e.g. endorsing an unorthodox semantics for counterfactuals, modifying the fictionalist strategy – and argue that they are insufficient if they are put forward as ad hoc repairs. This leads us to a powerful desideratum: any defense of an alternative fictionalism must provide a parallel and connected revision of the standard semantics for counterfactuals.

Relying on previous work by Fine [2] and Yablo [9], we suggest that a proposal meeting this desideratum can be formulated via a state-based approach. On our approach, the metaphysical impossibilities entertained by CF are inconsistent, null-states; consequently, the approach con- serves orthodoxy in that counterfactuals whose antecedents refer to such states are vacuously true. Nevertheless, our state-based approach also allows us to extract a proper part of such inconsistent states that involve only concreta, and are thus consistent by nominalist lights. We suggest that the structural properties of such consistent parts of inconsistent states account for the intended predictions of CF. We thus argue that a core of CF can be vindicated despite accepting a vacuist account of counterpossibles.

References

1. Cian Dorr. There Are No Abstract Objects. In Theodore Sider, John Hawthorne, and Dean W. Zimmerman, editors, *Contemporary Debates in Metaphysics.* 2008.
2. Kit Fine. Truthmaker Semantics. In *A Companion to the Philosophy of Language*, pages 556–577. John Wiley and Sons, Ltd, 2017.
3. David Lewis. *Counterfactuals.* Basil Blackwell, London, 1971.
4. David Lewis. Truth in Fiction. *American Philosophical Quarterly, 15*(1):37–46, 1978.
5. Daniel Nolan. Impossible Worlds: A Modest Approach. *Notre Dame Journal of Formal Logic, 38*(4), October 1997.
6. Robert Stalnaker. A Theory of Conditionals. In Nicholas Rescher, editor, *Studies in Logical Theory*, pages 98–112. Blackwell, 1968.
7. Timothy Williamson. Counterpossibles. *Topoi, 37*(3):357–368, 2018.
8. Timothy Williamson. *Suppose and tell: the semantics and heuristics of conditionals.* Oxford University Press, Oxford, 2020.
9. Stephen Yablo. *Aboutness.* Princeton University Press, Princeton (N.J.) Oxford, 2014.