
The Puzzle of Non-Contingent Scientific Explanation

Alastair Wilson*†¹

¹University of Leeds – United Kingdom

Abstract

Science indisputably provides us with explanations. It is natural to think that these include non-contingent explanations: explanations where the explanans and the explanandum necessarily co-vary. Potential examples in contemporary science include mathematical explanations, geometrical explanations, topological explanations and grounding explanations. While some progress has been made in understanding how these explanations are used, their metaphysical foundation remains shaky. I raise a general puzzle about non-contingent explanations, in the form of a trilemma facing scientific realists who endorse them: either scientific explanation is disjunctive in character, or non-contingent explanations are not genuinely explanatory, or non-contingent explanations incur a substantial metaphysical commitment in terms of objective structure amongst (physical and metaphysical) impossibilities. I then raise some objections against each horn of the trilemma.

Some relevant background reading in case that's helpful:

Jansson, L. and Saatsi, J. (2019). "Explanatory Abstractions", *The British Journal for the Philosophy of Science* 70 (3): 817–844

Shaheen, J. (2017). "The Causal Metaphor Account of Metaphysical Explanation", *Philosophical Studies* 174(3): 553-578.

Wilson, A. (2018). "Grounding Entails Counterpossible Non-Triviality", *Philosophy and Phenomenological Research* 96(3): 716-728.

*Speaker

†Corresponding author: A.J.J.Wilson@leeds.ac.uk