# Scientific Realism and a Different Kind of Novel Success

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Musgrave (1974) offers three ways in which we might understand the idea that a prediction is novel:

1. *Temporal novelty* - a theory might predict phenomena that have not been observed, prior to the articulation of the theory;
2. *Heuristic novelty* - a theory might predict phenomena that the theory was not designed to predict;
3. *Theoretical novelty* - a theory might predict phenomena that are counterpredicted by available alternative theories.

Scientific realists have famously appealed to verified novel predictions for purposes of defending the view that realism provides the best explanation for scientific success. Within such discussions the heuristic version of novelty has proved by far the most popular. In this paper I consider the implications for scientific realism of adopting instead the theoretical notion of novelty. I argue that the resulting realist thesis is more plausible on both conceptual and historical grounds.

At least relative to *theoretically* novel predictions a successful theory is *better* than available alternatives, but this alone cannot be reason to suppose that a successful theory is approximately true. Relative judgments can warrant inferences only to relative conclusions. Attention to theoretically novel predictions suggests that realists ought to consider the possibility that successful theories are more truthlike than alternatives, rather than that they are approximately true.

Theoretically novel predictions can also direct our attention towards particular constituents of a successful theory. If one theory predicts phenomena that are anomalous for an alternative, then the source of this asymmetry cannot be traced to any theoretical posits that are shared by the two theories.[1] Insofar as a verified novel prediction provides evidence that the successful theory is better than available alternatives, the realist might propose that the theoretical constituents responsible for generating the empirical excess is approximately true. The proposal closely parallels the traditional realist inference. However, rather than argue that success indicates an approximately true theory, it suggests that empirical *progress* can indicate the procurement of *new* insights which are themselves approximately true.

Putting these two ideas together, realists might suggest that empirical progress indicates the mastery of new conceptual truths. Preservation of these insights across subsequent instances of theory change would both insulate realism against historical counterexamples and suggest that science is converging on more truthlike theories. The proposal requires additional work in several directions. In the remainder of the paper I begin to fill in some of these important details, arguing that the resulting thesis is more plausible than previous realist inferences from scientific success.

References

Musgrave, A. [1974]: “Logical Versus Historical Theories of Confirmation”, *British Journal for the Philosophy of Science,* 25, pp. 1-23.

[1] Plausibly, furthermore, some posits might not be shared by the two theories yet play no role in generating the evidentiary distinction.