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Platonism in the Field of Mathematics – Limitations, Justification, and Individuation

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Abstract

In this talk, we examine several core theses of mathematical Platonism, outlining both the general Platonic commitments it inherits and the features that distinguish it within the philosophy of mathematics. Particular attention is given to the epistemological challenges that arise from the abstract and non-causal nature of mathematical objects, challenges that have historically strengthened nominalist critiques and encouraged interpretations of Platonism as metaphysically obscure.

To address these concerns, the paper investigates a set of prominent individuation strategies for mathematical entities—focusing on structural, epistemic, and criterion-based accounts—and compares them with respect to explanatory adequacy, ontological economy, and their ability to respond to nominalist objections. The analysis shows that while purely structural accounts clarify identity conditions, and epistemic accounts illuminate access, neither alone neutralises nominalist pressure.

The central claim is that a hybrid view—grounding individuation primarily in structural relations while supplementing them with epistemic constraints tied to mathematical practice—offers the most resilient Platonist response. Such a model preserves realist commitments without appealing to obscure metaphysics, though it leaves a residual tension between abstraction and epistemic access that marks a genuine limit of the Platonist framework rather than a refutation of it.

The aim is thus to clarify the theoretical role of individuation in contemporary Platonist defenses and to argue that its success is partial but philosophically significant within the ongoing Platonist–nominalist debate.

Keywords: Philosophy Of Science, Philosophy Of Mathematics, Platonism, Nominalism,

Individuation