

"In describing claims that he, as an immanent rather than a transcendent realist cannot make,

Resnik gives the following examples: he cannot claim that mathematicians, no matter what language they speak, aim to construct true theories (p 9); and

he cannot claim that if there is a Martian mathematics, then it affirms many of the truths that we do (p 9).

In light of the full details of Resnik's view—in particular, that there exists a natural number pattern independent of our minds and theories about it—why can't Resnik make these claims?

Doesn't his own theory have the resources it needs to make precisely these claims? If you think it does, explain how Resnik could justify making these claims using the resources of his theory. If not, what's missing?"

I would say that Resnik's viewpoint that we have set theory and calculus, etc. which are real but don't exist in space-time or in our minds (p. 7) essentially causes his inability to make further claims. Proofs in math are supposed to convince people of the probable truth of statements which don't come from sensory perception. A lot of proofs may only have merit psychologically and not logically, because proofs are constructed socially with relation to shared mathematical, linguistic and cultural contexts and are designed for other people to interpret.

Specifically, Resnik's immanent mathematical realism preserves a gap between ourselves and mathematical reality (p. 8). This solves some problems with uncertainty about truth but it still conflicts with the conception of universal truth. For example, take the infinity axiom (p. 16). Many people have tried to prove it. If we assumed we had a priori knowledge of infinity, we could even try to prove it by contradiction based on the realist dichotomy: if the infinite set were only imaginary, we could find finite sets with more elements (by virtue of finite sets and their elements actually existing in mathematical reality and not being imaginary). Here we're depending on immanent realism, and furthermore solving the problem of hidden lemmas by just axiomatizing infinity seems like an admission that mathematical reality is basically constructed and not discovered.

The evolution of math depends on relations between templates which were based on little information, designed not for absolute truth but just for practicality by the mathematicians. Since math is made of relations between representations of objects and also requires abstract training like Resnik says, he can't conclude that the same truths are going to be affirmed in Martian math

because they might not be realists without the same historical stage and cultural context.