

Re: Epistemology 201: The Science of Science

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From: Jason (jasonstevensNOSPAM_at_free.net.nz)

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Torkel Franzen wrote:

> Jason <jasonstevensNOSPAM@free.net.nz> writes:

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>> So the implication, a formula which is part of the "language of ZFC", is
>> used in the proof.

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> No, there is no formula in the language of ZFC used in the proof.

Okay, so you **must** be suggesting that the implication is not part of the language of ZFC. This is a strange theory of sets indeed.

> Your further comments turn on the existence of derivations in ZFC of
> formalizations of the theorems of mathematics. This is a different
> matter. The simple observation at issue is that ordinary mathematical
> proofs are not formal derivations in ZFC and in fact are nothing like
> formal derivations in ZFC.

If mathematical proofs are informal, then they must be appealing to some sort of mathematical intuition or know-how. But it is madness to rest on intuition for proofs, because so many things defy intuition. It is important to ground maths formally as a resource for when intuition fails. In this way, proofs can become formal when required, and be formalisable in principle.