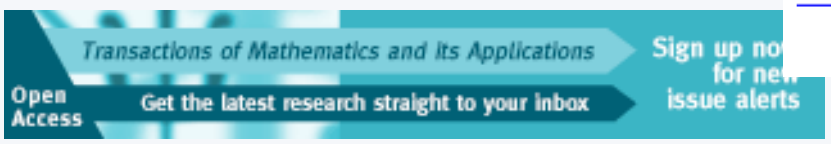




# Why Do We Prove Theorems?

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## Abstract

Ordinary mathematical proofs—to be distinguished from formal derivations—are the locus of mathematical knowledge. Their epistemic content goes way beyond what is summarised in the form of theorems. Objections are raised against the formalist thesis that every mainstream informal proof can

be formalised in some first-order formal system. Foundationalism is at the heart of Hilbert's program and calls for methods of formal logic to prove consistency. On the other hand, ‘systemic cohesiveness’, as proposed here, seeks to explicate why mathematical knowledge is coherent (in an informal sense) and places the problem of reliability within the province of the philosophy of mathematics.



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