

Remarks on Frege's Conception of Inference

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I Whatever the ultimate fate of Frege's logicist thesis, his contribution to the theory of logical inference is indisputably great. He showed how we may represent sentences of arbitrary relational and quantificational complexity in a system where rules of inference are treated as instructions for the manipulation of formulas. In his *Begriffsschrift* he showed how the rules enable us to establish results that might otherwise be thought to depend upon an intuition of serial order.¹ Trouble set in later, with the introduction of an axiom governing the transition from a function to its course of values. But this indicates no deficiency of inference; impeccably correct inferences may proceed from false premises. Validity is one thing, truth another. Deductive inference is truth preserving, and must be so. But in another sense inference has nothing especially to do with truth. We can infer from premises independently of their truth values; a proposition does not have to be true in order for us to be able to derive its consequences. The point about the truth preservingness of validity can be put equivalently in terms of falsehood; an inference is valid if the falsity of the conclusion guarantees the falsity of the conjunction of the premises.

We may express this by saying that while an important use to which we put the machinery of logical inference is *proof*—the derivation of conclusions from premises known to be true—inference and proof are not the same. To conflate them would be as bad as to conflate pure and applied arithmetic—something Frege taught us not to do.

We can make a further appeal to Frege in defending this conception of inference. Logic is concerned with objective matters. Only confusion can result if we allow the validity of an inference to depend upon any psychological conditions. But then it must be a matter of indifference to logic whether the premises of an inference are known to be true or not.

Surprisingly, such an account would provoke a strongly negative reaction from Frege. He expressed himself in ways that seem alien to this conception of

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