

Capturing Consequence

Alex Paseau (Oxford)

Philosophy of Mathematics Seminar
25th January 2016

Consider the simple valid English argument ‘Felix is a cat, therefore there is a cat’. Its propositional formalisation p/q is not propositionally valid. In contrast, its formalisation in first-order logic $Fa/\exists xFx$ is first-order valid. This example illustrates an apparently well-established moral: first-order formalisations underwrite the validity of more natural-language arguments than propositional formalisations. Teachers of logic often invoke this moral when introducing first-order logic to students who know only propositional logic. My talk will show that this moral is false, at least if unqualified. As I will explain, there is a precise and important sense in which first-order logic does not improve on propositional logic so far as respecting natural-language validity is concerned. First-order logic captures natural-language validity facts better than propositional logic only if formalisations are constrained in some other way.