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Gila Sher, *The Bounds of Logic: A Generalized Viewpoint.* MIT Press, Cambridge, Massachusetts, 1991, 178 + xv pages.

Reviewed by

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Gila Sher opens her book *The Bounds of Logic* by quoting from the introductory chapter to Barwise and Feferman's 900-page survey of a quarter century's experimentation with those bounds: "Whatever the fate of the particulars, one thing is certain. There is no going back to the view that logic is [standard] first-order logic" [Barwise and Feferman *1985*, 23]. The research effort devoted to model-theoretic and alternative logics since the 1960s has been immense. Most of this effort has gone into the study of their properties, focusing especially on completeness, compactness, and Löwenheim-Skolem theorems. By contrast, little has been done to clarify the philosophical implications of the very existence of these logics for the status of standard first-order logic. What *is* logic if it is no longer standard first-order logic? What exactly differentiates the logical from the non-logical? Could there be explicit criteria for logicality which would force even the advocate of the "first-order thesis" to concede that logic is more than what we continue to call *standard* first-order logic?

Determining what is or is not logic depends on deciding which expressions in the language under consideration should count as logical. Therefore a question underlying all of the above questions is that concerned with distinguishing between logical and nonlogical constants. In a recent paper addressing this question and including a brief survey of other attempts to do so, Kosta Došen notes that in the history of modern logic the dominant attitude even among "philosophically inclined" logicians has been "a certain skepticism as to whether the distinction between logical and nonlogical expressions can be clearly drawn. Most logicians, like so many followers of Protagoras, are content with just listing what they take as logical constants" [Došen *1989*, 363]. Alfred Tarski, for example, was being either skeptical or open-minded when he made the following comment in his famous paper, "On the Concept of Logical Consequence":