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Existence and Description in Formal Logic

Dana Scott

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Note added in proof (1990). Since the writing of this paper, the author worked for many years on intuitionistic logic. In such a framework the Law of the Excluded Middle is not available, and the problem of what to do about nondenoting descriptions is not quite obvious. A particular solution was found by the author in 1975 and published under the title "Identity and Existence in Intuitionistic Logic" for the 1977 Durham

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Philosophical Applications of Free Logic

Conference on Applications of Sheaves in the Springer-Verlag Lecture Notes in Mathematics, vol. 753 (1979), pp. 660–696. Many authors have remarked on the need for partial elements in models for intuitionistic logic and have given semantical interpretations—and these interpretations agree with the approach advocated in the 1979 paper. When intuitionistic logic is specialized to classical logic (say, by adding Excluded Middle), then the result is exactly as suggested here in this 1967 paper. The author feels that the additional experience with the nonclassical theories shows that principles advocated are both workable and sound.