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Raymond M. Smullyan, *Diagonalization and Self-Reference*. Oxford Logic Guides 27, New York, Oxford University Press, 1994; xv + 396 pp. and Raymond M. Smullyan. *First-Order Logic*. New York, Dover Publications, 1995 (originally published in 1968 by Springer-Verlag.); xii + 158 pp.

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Here are two books, written 26 years apart. The older one deals with a very specific area of logic, the newer one with a common thread that runs through a variety of logical fields. Yet they are recognizably by the same author and display the features, both mathematical and stylistic, that typify Smullyan's writings.

The focus of *Diagonalization and Self-Reference* is the development of a unified framework for the fixed-point theorems that occur in different areas of mathematical logic, such as recursion theory, combinatory logic, and proof theory. To this end Smullyan introduces the notion of a sequential system. To quote his definition, "By a *sequential system* S we shall mean a triple $(N, \Sigma, \rightarrow)$, where N is a set, Σ is a collection of functions of various numbers of arguments, all arguments and values being in N, and $\rightarrow$ is a transitive binary relation on the set of all finite non-empty sequences of elements of N."

Of course, this definition is highly general, which provides for the flexibility to deal with disparate applications. For example, consider the statement: