AN INTUITIVE INTERPRETATION OF SYSTEMS OF FOUR-VALUED LOGIC

NICHOLAS RESCHER

It is well known that, despite their formalistic usefulness (in proving the independence of axioms, for example), the *interpretation* of systems of many-valued logic is a matter of considerable difficulty. The aim of the present paper is to present an approach to some of the familiar systems of four-valued logic using a very natural intuitive interpretation of the truth-value assignments.

It would appear on first thought that the most plausible and tempting possibility of interpreting the truth-values of four-valued logic would be somewhat as follows:

Truth-value	Interpretation I	Interpretation II
1	necessarily true	true
2	contingently true	probably true
3	contingently false	probably false
4	necessarily false	false

It is plain that both 1 and 2 must be taken as *designated* truth-values in this scheme; for we wish to keep to the customary meaning of a "tautology" (i.e., a propositional schema always taking designated truth-values) as a schema that is "uniformly *true* for every truth-value assignment to its constituents."

In both instances, negation would be characterized by the familiar matrix:

	$\sim$
1	4
2	3
3	2
4	1

But the same vitiating difficulty arises alike in both cases with regard to the matrix for conjunction. Consider what entry is to correspond to *2 & 3*.