

Whose Logic is Three-valued Logic?

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One of Imre Ruzsa's most important achievements in philosophical logic is his system of intensional logic with semantic value gaps. These gaps are a means of handling the difficulties which are caused by partial predicates, or descriptions which do not or do not uniquely denote, or variables denoting an object which is not an element of the appropriate domain. In the case of sentences, the semantic value gap – truth value gap – is not a genuine truth value, only a lack of such, and the presence of truth-value gaps is perfectly reconcilable with a realist attitude to semantic issues, and can serve as a means for a logic of empirical investigation.

The question then arises: what happens if there are “genuine” truth-value gaps, e.g. sentences which are meaningful but undecidable in the strongest sense: even God does not know whether they are true or not. It would have consequences not only to our logic but for the divine logic, too. Michael Dummett has argued that the latter must be a kind of three-valued logic, while the former must be intuitionist logic.

In my paper I will investigate what type of sentences could have the chance of being undecidable in the strong sense. Of course, if a sentence is “strongly undecidable”, we will never know that it is so; my chances therefore are very – but not infinitely – limited.