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Expressibility in Two-Dimensional
Languages for Presupposition

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Formal two-dimensional languages were shown by Herzberger [4] to provide an interesting philosophical alternative to three-valued languages.[1] He claimed that these languages would probably prove valuable in the investigation of semantic presupposition, and indeed they have. (See the works cited in [1].) In this paper, I characterize the expressive power of certain propositional two-dimensional languages.

I have discussed in detail the motivation for a two-dimensional analysis of presupposition in [2], so I will give only a brief intuitive account of that analysis here.[2] Two-dimensional languages are four-valued languages, where each value assigned to a sentence is the result of two distinct valuations. The first valuation assigns a truth-value to each atomic sentence; and there are two truth-values: *true* and *false.* The second valuation assigns what I call a *security-value* to each atomic sentence. The security-value of a sentence intuitively registers information relevant to determining presuppositions. In English, the relevant information includes: whether names and definite descriptions denote, whether the complements of factive verbs are true, and whether predicates are sortally appropriate to the terms they combine with. Usually, if any of these fails for a sentence, that sentence will have a false presupposition. There are exceptions—for example, 'Santa Claus exists' does not have a false presupposition, although 'Santa Claus lives at the North Pole' does. With the exception of certain constructions such as those that make an explicit attribution of existence, then, a subject-predicate sentence is secure only if the conditions mentioned above are met.