

## SIGNIFICANCE LOGICS

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1 *Introduction\** Over the last few years, there have been a number of papers supporting the adoption of a 3-valued significance logic. Some of these papers carry the logic further and look into theories of classes and relations. Goddard [2] and Routley [7] give justification for a 3-valued significance logic and delve into its effects on predicates, relations, and classes. Routley [7], p. 188-189, also gives an axiomatisation of a functionally complete predicate logic. Goddard [3] contains an account of two sentential 3-valued significance logics, **T1** and **T2**. Routley, in [8], develops a number of significance logics. Routley [9] and Goddard [4] give further evidence in favour of a 3-valued significance logic in reply to a criticism from Lambert [6]. Philosophical problems regarding significance, especially that concerning sentences and statements, are sorted out in Part I of Goddard and Routley's book, [5].

In this paper I want to take for granted the 3-valuedness of significance logic and the characterisation of the three values given by Goddard and Routley for atomic sentences, i.e., sentences with no logical connectives or quantifiers. Although the assignment of values to atomic sentences is not always clear, I propose to examine the assignment of values to compound sentences, taking for granted some assignment of values to atomic sentences.

I want to follow up Goddard's systems **T1** and **T2** in [3] and Routley's significance logic in [7] and present a sequence of significance logics, each with a characterisation of its own. The problem of determining the value to assign to a compound sentence leads to the problem of determining a subset of the set of all 3-valued connectives and quantifiers such that these and only these connectives and quantifiers are used in determining the values of compound sentences. One then needs criteria to characterise the

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