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FAQ

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Outline of a Theory of Strongly Semantic Information

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Abstract

This paper outlines a quantitative theory of strongly semantic information (TSSI) based on truth-values rather than probability distributions. The main hypothesis supported in the paper is that the classic quantitative theory of weakly semantic information (TWSI), based on probability distributions, assumes that truth-values supervene on factual semantic information, yet this principle is too weak and generates a well-known semantic paradox, whereas TSSI, according to which factual semantic information encapsulates truth, can avoid the paradox and is more in line with the standard conception of what generally counts as semantic information. After a brief introduction, section two outlines the semantic paradox entailed by TWSI, analysing it in terms of an initial conflict between two requisites of a quantitative theory of semantic information. In section three, three criteria of semantic information equivalence are used to provide a taxonomy of quantitative approaches to semantic information and introduce TSSI. In section four, some further desiderata that should be fulfilled by a quantitative TSSI are explained. From section five to section seven, TSSI is developed on the basis of a calculus of truth-values and semantic discrepancy with respect to a given situation. In section eight, it is shown how TSSI succeeds in solving the paradox. Section nine summarises the main results of the paper and indicates some future developments.

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