

The Logic of Confirmation and Theory Assessment

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Abstract

This paper discusses an almost sixty year old problem in the philosophy of science -- that of a logic of confirmation. We present a new analysis of Carl G. Hempel's conditions of adequacy (Hempel 1945), differing from the one Carnap gave in §87 of his *Logical Foundations of Probability* (1962). Hempel, it is argued, felt the need for two concepts of confirmation: one aiming at true theories and another aiming at informative theories. However, he also realized that these two concepts are conflicting, and he gave up the concept of confirmation aiming at informative theories. We then show that one can have Hempel's cake and eat it, too: There is a (rank-theoretic and genuinely nonmonotonic) logic of confirmation -- or rather, theory assessment -- that takes into account both of these two conflicting aspects. According to this logic, a statement H is an acceptable theory for the data E if and only if H is both sufficiently plausible given E and sufficiently informative about E . Finally, the logic sheds new light on Carnap's analysis (and solves another problem of confirmation theory).

Keywords: Hempel, Carnap, logic of confirmation, plausibility-informativeness theory, ranking functions

Subjects: [General Issues: Confirmation/Induction](#)

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