von Neumann, John; Morgenstern, Oskar

Theory of Games and Economic Behavior. 2d ed.

[The first edition appeared in 1944; cf. MR0011937.] The second edition differs only slightly from the first. The changes consist essentially of eliminating the misprints discovered in the first edition and of adding an appendix which contains a derivation of the numerical character of utility from the axioms formulated in section 3. As the authors remark, the axioms in their present form do not allow for the possibility of a specific utility or disutility of gambling. To permit such a possibility, it would be necessary to modify some of the axioms. It seems likely that the really critical axiom that would have to be changed is the axiom (3:C:b) which expresses the combination rule for multiple chance alternatives. The mathematical difficulties in formulating a system which allows for a utility or disutility of gambling are likely to be considerable and, as is pointed out by the authors, the current method of using indifference curves would not diminish these difficulties.

A. Wald