Living without state-independence of utilities*

Brian Hill

Groupe HEC
I ' 1 rue de la Liberation
78350 Jouy-en-Josas
France
hill.brian@wanadoo.fr
www.hec.fr/hill

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Abstract

This paper is concerned with the representation of preferences which do not satisfy the ordinary axioms for state-independent utilities. After suggesting reasons for not being satisfied with representations using state-dependent utilities, an alternative representation shall be proposed involving state-independent utilities and a *reliability factor* on acts. The latter represents the degree to which purported acts can actually succeed in yielding promised consequences given particular states. This factor captures the interdependencies between states and consequences. Two sets of axioms are proposed, each permitting the derivation of subjective probabilities, state-independent utilities, and a reliability factor, and each operating in a different framework. The first framework involves the concept of a *decision situation* - consisting of a set of states, a set of consequences and a preference relation on acts; the probability, utility and reliability functions are elicited by referring to other, appropriate decision situations. The second framework, which is technically related, operates in a fixed decision situation; particular "subsituations" are employed in the derivation of the representation.

Keywords: Elicitation; Subjective Probability; Subjective Expected Utility; State-dependent **utility; Small** worlds.

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