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The Role of Schema and Available Information in Individual Decision-Making Tasks: An Empirical Study of Locally Rational Decision-Making

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While it has long been recognized that irrelevant information may overload decision-makers and lead to inferior performance (Ackoff 1967; Lucas 1975; Hollnagel 1987), the idea that relevant information leads to better decision making performance is a widely accepted axiom (Cook 1968; Adams and Swanson 1976; Zmud 1979; Ahituv and Neumann 1987; Keller and Staelin 1987; Nichols 1987). It is intuitively appealing to believe that managers will make better decisions with additional information, so long as relevant and sufficient time is available to process it. This seemingly simple, sensible assertion, however, was challenged by Glazer, Steckel and Winer (1992), who report that in certain circumstances even relevant information may lead to inferior performance. The term, "locally rational decision-making" describes a phenomenon in which relevant information about a relatively unimportant local objective may lead to better performance on that objective, but worse performance overall, because attention is distracted from more important factors.

The purpose of this study was two-fold. Since Glazer et al. defined and studied this phenomenon in the context of small groups, the first purpose was to identify whether locally rational decision-making occurs at the individual decision-making level.

The second purpose was to gain a better understanding of the causes of locally rational decision making as a first step in dealing with the problem. A decision-maker's pre-existing schema (domain memory structure) provides the lens through which incoming data is viewed, thus determining which information is most salient, which will be encoded, and how the new information will be organized in memory (Rumelhart 1980; Taylor and Crocker 1981). This study, therefore, investigated whether an individual's

schema (domain memory structure) affects the propensity to make locally rational decisions.

A quasi-experiment using an advertising media buying task was used to test for the presence of locally rational decision-making at the individual level, controlling for the order of information presentation, mode of information presentation and information overload. All subjects received the same base of information necessary to perform the decision task. Half the subjects were provided with additional accurate and relevant information that pertained to a relatively unimportant part of the task. Results revealed that these subjects allocated more resources to that part of the task that had a smaller impact on overall task performance, and on which they were given the additional information. These results demonstrated the phenomenon of locally rational decision-making at the individual level.

Measurement of subjects' schematic development for the task domain was based on Johnson hierarchical clustering (Johnson 1967; Olson and Biolsi 1991). Results revealed that both subjects with and without well-developed schemas for the task domain made locally rational decisions. Although subjects with less developed schemas performed better overall than did subjects with well-developed schemas for the task domain, all subjects, including experienced domain practitioners, were prone to making locally rational decisions.

The results of this study highlight the fact that effective decision-making is greatly dependent on the individual's ability to identify and focus on that aspect of the decision that has the greatest impact and risk to the overall strategic goal. Decision-makers should be aware of the bias of locally rational decision-making and recognize that the weight one puts on information should not result from its availability in the environment.

NOTE: a longer version of this paper is available.

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