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A further investigation of the attentional bias in concurrent decisions

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Abstract

Purpose of Study: An experiment was conducted to investigate whether an attentional bias explains why decision makers sometimes fail to integrate outcomes of concurrent decisions. Method: Forty-eight undergraduates recruited as participants were asked to make fictitious choices of stores located at different distances where they could purchase the same consumer products at different prices. In one condition the participants were asked to also make a choice between driving and walking to the stores, in another condition to choose between the stores when they had no other option than to walk or drive. Attitudes toward driving were independently assessed by means of a questionnaire. Findings and Results: A finding supporting the attentional bias was that participants with a more positive attitude toward driving chose more frequently to drive to stores within walking distance than participants with a less positive attitude towards driving.

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Keywords: Decision making; concurrent decisions; integration

1. Introduction

People frequently face decision tasks requiring that two or more decisions are made concurrently (Brehmer, 1992; Huber, 1990). Concurrent decisions are completely dependent if the decision maker evaluates and chooses among all combinations of the outcomes of each option entailed by each decision. Garling et al. (1997) argued that a more plausible assumption is that such decisions are frequently independent or only partially dependent.

In its simplest case integration refers to adding the utilities of the expected outcomes of one of two decisions to the utilities of the expected outcomes of the other decision. According to the principle of utility maximization, the outcomes of the two concurrent decisions are integrated when the utilities of

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the outcomes of an option available in the first decision increases the utilities of the outcomes of an option available in the second decision. If this is not the case, the outcomes of the two decisions are not integrated. Consider the following demonstration by Tversky and Kahneman (1981, p. 454) violating utility maximization:

Imagine that you face the following pair of concurrent decisions. First examine both decisions, then indicate the options you prefer.

Decision (i). Choose between:
A. a sure gain of $240
B. 25% chance to gain $1,000, and 75% chance to gain nothing

Decision (ii). Choose between:
C. a sure loss of $750
D. 75% chance to lose $1,000, and 25% chance to lose nothing

A majority of participants chose options A and D. However, in choosing between the following two alternatives, they chose B' which maximizes expected utility:

A'. 25% chance to gain $240, and 75% chance to lose $760

B'. 25% chance to gain $240, and 75% chance to lose $750

Since alternative B' is B and C combined whereas A' is A and D combined, the two decisions did not maximize expected value. Why did the concurrent decisions fail to maximize expected utility? It should first be noted that if the decisions are made independently, consistent with prospect theory (Kahneman & Tversky, 1979; Tversky & Fox, 1995; Tversky & Kahneman, 1992) each decision maximizes value. Because the value function is concave for gains and convex for losses, the value associated with a sure gain of $240 is greater than 24% of the value associated with a gain of $1,000. At the same time, the value associated with a loss of $750 is smaller than 75% of the value associated with a loss of $1,000. In addition, Tversky and Kahneman (1981) suggested that each decision is framed in a "minimal account," that is, as being made independently of the other decision. Such a decision frame may frequently be employed because it "..(i) simplifies evaluations and reduces cognitive strain, (ii) reflects the intuition that consequences should be causally linked to acts, and (iii) matches the properties of hedonic experience which is more sensitive to desirable and undesirable changes than to steady states" (p. 457).Boe and Garling (1998a, 1998b) investigated several of the possible factors that according to Tversky and Kahneman (1981) counteract integration. One factor is that the number of options and outcomes of each decision imposes cognitive strain. In line with this assumption it was demonstrated that outcomes are integrated whenthey are riskless but not when they are risky or uncertain. For instance, a choice of a consumer product is a riskless outcome that was integrated with another riskless outcome. In contrast, a choice of a lottery ticket with the consumer product as the prize is an uncertain outcome that was not integrated with another uncertain outcome. Risky or uncertain outcomes impose cognitive strain partly because the number of outcomes increases, partly because of the demand on the decision maker to imagine different possibilities. As observed by Tversky and Shafir (1992), people are often reluctant to think through the implications of each outcome in the presence of risk or uncertainty. Boe and Garling (1998a) also demonstrated that causally related outcomes were integrated whereas causally nonrelated outcomes were not. Thus, the added utility of choosing a means to an end influenced the choice when the end had been chosen or the reverse. For integration to occur, the outcomes of concurrent decisions may need to be causally linked (Tversky & Kahneman, 1981). In a similar vein, Bonini and Rumiati (1996) showed that the likelihood that participants made dependent decisions in the jacket and calculator problem increased when it was made salient that the outcomes were related. For instance, purchase choices became dependent when embedded in a shopping list.