The Impact of Hierarchical Decisions on Choice Extremeness

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EXTENDED ABSTRACT

When consumers make a choice from a large number of alternatives, instead of viewing all available options at once and arrive at a final choice in one step, they often engage in a hierarchical decision process (e.g., Hauser 1986; Tversky and Sattath 1979). In the present article, we explore how making hierarchical choices (vs. one-step ones) impacts the extremity of consumers' preference in situations where alternatives are grouped into subsets trading off on two key attributes (e.g., tastiness and healthiness of food items). Although there is ample evidence showing that consumers tend to be loss-averse and opt for the middle-options when choosing from alternatives trading off on two attributes (e.g., compromise effect, Simonson and Tversky 1992; Simonson 1989), what remains relatively unclear is whether the same effect holds when they follow a hierarchical decision process.

Our research suggests that the choice following a hierarchical process would differ significantly from the original one in a one-step choice. We build our investigation on the theory of goal-based choice (e.g., Barsalou 1983; Dhar and Simonson 1999) and the theory of self-perception (e.g., Bem 1967; 1972) and propose that, as compared to a one-step decision, a hierarchical decision provides consumers with the opportunity to identify their preference such that they would behave in a way that is consistent with the initial choice, resulting in more extreme final choices. This hypothesis is derived on the notion that people form their attitudes and preferences partially by inferring from their own behaviors, especially when the attributes/preferences are weak or ambiguous (Bem 1972; Schnall and Laird 2003). To the extent that in a typical trade-off context all attributes involved are important, consumers tend not to hold a strong, pre-existing, or fixed preference. This ambiguity in preference, in turn, leads to compromises that are acceptable on all dimensions when people need to trade off on multiple attributes in a one-step decision (e.g., Simonson 1989; Simonson and Tversky 1992). However, in a hierarchical decision context, the initial choice for a category in some ways forces consumers to declare a preference between the competing attributes and choose a subset dominating in one of the attributes. Phenomenally, we should expect that, compared with a one-step choice, individuals are more likely to go for the extreme options in a hierarchical choice context.

Study 1 (n=172) was conducted with undergraduate students using a 2 (decision process: one-step vs. two-step) x 1 between-subjects design. All participants were asked to choose a snack as the reward for a filler study. In the one-step condition, participants chose from 4 snack options (A to D: whole natural almonds, slat roasted almonds, multigrain chips, and classic chips). In the two-step condition, participants chose between almond and chips snacks first, and then chose within the selected subset. The results showed that there was a significant increase in the choice share of the extreme option A (38.71% to 61.70%, Z = -1.98, p<.05), and a decrease in the middle option B (61.29% to 38.30%) in the two-step (vs. one-step) condition. Similarly, there was an increase in the choice share of the extreme option D (46.88% to 85.48%, Z = -3.96, p<.01) and a decrease in the middle option C (53.13% to 14.52%) in the two-step (vs. one-step) condition.

In study 2 (n=201), we directly manipulated the trade-off between two attributes using a 2 (decision process: one-step vs. two-step) x 1 between-subjects design with Mturk workers. They were instructed to solve as many puzzles as they can within 2 minutes. They were also told that viewing color patterns with calming or alerting effects can help solve puzzles. In the one-step condition, participants were asked to choose from 6 color patterns (A to F) with calming and alertness ratings. In the two-step condition, participants first chose between “patterns that make your mind calmer” and “patterns that make your mind more alert”, and then chose a pattern within the selected subset. The results replicated our findings about the extremeness effect in study 1.

In study 3 (n=238), we tried to eliminate the extremeness effect using a 3 (decision process: one-step vs. two-step free-choice vs. two-step random-choice) x 1 between-subjects design with Mturk workers. In the one-step condition, participants chose a snack from four options of almonds. In the two-step free-choice condition, participants first chose between “original almonds” and “almonds with coatings”, and then chose within the selected subset. In the two-step random choice condition, participants first chose between the two types of almonds by flipping a coin and then chose a snack from it. The comparisons between the one-step and the two-step free choice condition replicated our earlier findings about the extremeness effect. The comparison between the one-step and the two-step random-choice condition showed that, the increase in the choice share of the extreme option A (natural raw almonds) in the two-step random-choice condition was not significant (45.24% vs. 36.84%, Z = 0.80, p > .20), neither was the decrease in the choice share of the middle option B (low salted roasted almonds) (54.76% vs. 63.16%, Z = 0.80, p > .20). Similarly, the changes in the choice shares of options D and C were not significant. These results showed that, while a two-step process can make people choose more extreme options, it is on the condition that the subset decision is not attributed to an external (random) factor.

First, our research shows that when consumers make a single choice, breaking this task into multiple steps of a hierarchical process (e.g., subset decision and final choice) can make them focus on a particular goal and choose extreme options to highlight the goal. Our research also indicates that consumers need to re-evaluate the benefits of a compromising versus a maximizing strategy in their decisions. It seems intuitively wise to choose the middle options when consumers make trade-off decisions between two important aspects/attributes. However, in the cases when we are better off having more extreme options, simply changing the decision procedure can help us circumvent the instinct of choosing a compromised option.

REFERENCES


