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Translation Errors in the Aggregation of Consumer Recommendations

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There has been a substantial increase of websites providing consumers with information about products and services. This information is usually presented in the form of verbal reviews and numerical ratings. It is assumed implicitly that consumers can integrate adequately the information across the two presentation modes (verbal and numerical). Research on compatibility effects between stimulus and response formats, however, suggests that preference consistency is higher (lower) in cases of compatible (non-compatible) formats, implying that information aggregation across the two modes is inefficient. The results of two experiments confirm this conjecture. Decision makers are not aware of this effect.

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EXTENDED ABSTRACT:

An increasing number of consumers uses the internet rather than brick and mortar stores for their purchase decisions. One important difference between traditional stores and virtual marketplaces is that the latter do not allow consumers to inspect directly the physical properties of goods and commodities. This lack of immediate experience triggers uncertainty about the specific properties and the overall quality of the products. One way to reduce this uncertainty is to allow consumers to share their experiences in the form of reviews and recommendations. Indeed, many of the leading internet marketplaces (e.g., Amazon.com, EPionions.com) offer consumers the opportunity to publicize their experiences in the form of verbal statements and numerical ratings. Verbal statements usually are free-format short essays, whereas numerical ratings provide a complementary summary in the form of quantitative ratings.

These two different information formats, verbal and numerical, need to be integrated by consumers to adequately aggregate the available information. Prior research on the internal consistency of preferences suggests that such integration might often be less than optimal. One explanation for such preference reversals is based on the compatibility between stimulus and response. According to the compatibility hypothesis (Fitts and Seeger, 1953), "the weight of any input component is enhanced by its compatibility with the output" (Tversky, Sattath and Slovic, 1988, p. 376). We extend this line of research by studying compatibility effects in information aggregation across different information formats (verbal and numerical). We predict higher rates of preference reversals when the stimulus format (verbal or numerical) does not match the response format (verbal or numerical).

We used a two-stage design to test this conjecture. On stage 1, participants rated the attractiveness of 12 fictitious products. This allowed us to derive an individual ranking of the products. For each product, participants saw 10 recommendations that were presented either as brief verbal statements (e.g., "this product was excellent" or "this product was average"), or as numerical ratings on a 5-point scale (1 to 5 stars). The verbal statements were pre-tested, and rated by independent raters, to match the 5-point numerical scale. We also varied the variance (low or high) and the mean (low, intermediate, or high) of the recommendations. Each of the 12 products was described by a unique combination of the presentation mode, the variance, and the mean of the recommendations.

After a 10-minute filler task, subjects entered stage 2 of the experiment. They were shown pairs of the products as used on stage 1. For each product subjects saw the corresponding 10 recommendations. Subjects were asked to provide a summary evaluation of each of the two products. The evaluation was either in a matching or a non-matching format. For instance, if the products were accompanied by verbal recommendations, subjects in the matching-format condition were asked to provide a summary evaluation of the products in the form of verbal statements (they were shown 5 pre-tested verbal statements) and asked to summarize the product. The options ranged from "this product was very bad" to "this product was excellent." In the non-matching condition, subjects were asked to click on a 5-point rating scale (1 to 5 stars). After summarizing each of the two products, subjects had to pick their preferred one. Comparing the evaluations of the rankings derived from stage 1 and the choices of stage 2 allowed us to study the internal consistency of preferences for each individual.

In study 1 we employed a 2 (stimulus mode: verbal or numerical format) x 2 (response mode: matching or non-matching format) between-subjects design to study how preferences are affected by the compatibility of the provided information. Our results confirmed that preference reversals are significantly higher for non-matching formats as compared to matching formats. Preference reversals were particularly pronounced for high variance products. In study 2 we allowed participants to select the response mode, verbal or numerical, by themselves. The majority of subjects preferred the numerical response mode, even in cases in which the products were presented verbally. This led to in an increase in preference reversals. This finding suggests that subjects did not anticipate the importance of compatibility between stimulus and response format on preference consistency. In all studies DMs showed the highest levels of preference inconsistencies for products with identical means but different standard deviations, suggesting that DMs have more trouble exhibiting consistent preferences for high variability options (and considerably less difficulty for options with mean differences).

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