Valence Asymmetries in Preference: the Case of Attraction Effect

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We show that the magnitude and direction of the attraction effect is sensitive to the valence of the options considered. We suggest that representation and evaluation of attributes are predictably different in negative domains, where the same attribute that was perceived as a promotion attribute in the positive domain, would be perceived as a prevention attribute in the negative domain. We further suggest that adding a decoy in the negative domains leads to a share increase for the option that is superior on the focal attribute, leading to both an attraction and a repulsion effect. Results from two studies support this prediction.

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SESSION OVERVIEW

Context effects have been of interest to consumer behavior researchers for the past several decades. This line of research has established that consumers’ preferences are significantly and systematically influenced by otherwise irrelevant changes in the decision context. Two of the most important and robust context effects are the attraction effect (a.k.a. asymmetric dominance) and the compromise effect. The attraction effect refers to the phenomenon whereby an asymmetrically dominated alternative, when added to a set, increases the attractiveness and choice probability of the dominating alternative (Huber, Payne and Puto 1982). On the other hand, the compromise effect occurs when the choice probability of an alternative increases when it is the middle option, compared to being an extreme option (Simonson 1989).

The three papers in this symposium further our theoretical knowledge of these two important context effects by identifying factors that amplify, nullify or reverse attraction and compromise effects. These papers focus on the consumers’ goals (e.g., promotion or prevention), attribute characteristics (e.g., positive or negative) and attribute representations (e.g., numerical or visual), and demonstrate that these robust context effects can be significantly and systematically moderated.

The first paper, by Frederick and Lee, investigates the role of attribute representation in the extent and direction of the attraction effect. The authors suggest that numerical ratings that have been used to date in this line of research increases the saliency of the dominance relationship—leading to strong attraction effects. Their results indicate that if the same information is presented in a perceptual manner (i.e., visual pictures), the attraction effect disappears or even reverses, a phenomena they name the repulsion effect.

The second paper, by Malkoc, Hoeffler and Hedgcock, critically examines the role of attribute valence in attraction effects. Their results show that the attraction effect is only robust when the options considered are predominantly favorable (positive). In negative domains adding a decoy leads to both an attraction and a repulsion effect. Specifically, the authors show that in negative domains adding a decoy leads to a share increase for the option that is superior on the focal attribute (i.e., an attribute that consumers resist trading off when negative but are willing to do so when positive). They suggest that one of the mechanisms behind this effect is the shift of attribute representations from promotion to prevention as the valence changes.

The third paper, by Levav, Kivetz and Cho, studies the fit between consumers’ goals and the attribute characteristics in determining the extent of attraction and compromise effects. They find that both compromise and attraction effects are amplified when there is a fit between regulatory states and the nature of the attributes. Specifically, when consumers are in a promotion (prevention) focus and are evaluating options that have promotion (prevention) based attribute tradeoff, they show higher context dependence, compared to when there is a mismatch of goals and attribute characteristics.

Collectively, the three papers in this symposium provide new insights about context effects in general and attraction/compromise effects in particular. These papers show that the attraction and compromise effects are systematically affected by the nature of the attributes, and that they can be attenuated and even reversed. The first paper illustrates the role of attribute representation and demonstrates that the attraction effect is reversed when attributes are presented in a visual manner (as opposed to numerical representation). Exploring valence effects, the results of the second paper point out that when the attributes considered are predominantly unfavorable; consumers’ preferences show both an attraction and a repulsion effect. Lastly, the third paper demonstrates the importance of the fit between attribute characteristics and goals, showing that when there is a high fit, both the attraction and compromise effects are amplified. Following the three papers, the discussant, Joel Huber, will comment on how the three papers inform and qualify the findings of previous research. He will also comment on some of the ways in which the three papers offer diverging perspectives on the common theme of the session. Joel will then engage the audience by inviting questions, comments, and future research ideas.

EXTENDED ABSTRACTS

“Attraction, Repulsion, and Attribute Representation”

Shane Frederick, Massachusetts Institute of Technology

Leonard Lee, Columbia University

The “attraction effect” (Huber, Payne, & Puto 1982) is among the most studied of all contextual effects on choice. Many studies have shown that the presence of an inferior “decoy” option enhances the attractiveness of the option with which it is most similar, and a casual reading of the literature suggests that this phenomenon is extremely robust, and widely replicated across diverse domains.

However, we propose that the way in which attributes are represented plays a critical role in the effect—i.e. it may determine not only the effect’s magnitude, but even its direction. First, representing naturally experiential or perceptual attributes (such as taste or visual clarity) through contrived numerical ratings (e.g., picture quality rating of a TV) both permits and encourages the computation of tradeoff rates (e.g. quality points per dollar) as a basis for comparison. Second, it enhances the salience of the dominance relationship between the decoy and the target—the difference between the number 9 and the number 8 is simply more apparent and unambiguous than even highly reliable perceptual differences. Third, describing choice stimuli by a vector of numbers strips them of affective content, influencing the types of comparative processes that are invoked. Specifically, we propose that perceptually represented attributes favor assimilation effects whereas numerically represented attributes favor contrast effects. In two experiments, we found that the attraction effect was either eliminated (Experiment 1) or reversed (Experiment 2) merely by shifting attribute representation from a numeric format to a graphical format.

In Experiment 1, 560 respondents chose between gambles that varied in probability of winning and reward. For all respondents, two options included an 83% chance to win $12 (the “P-gamble”) and a 30% chance to win $33 (the “S-gamble”). For half of the respondents, the choice set also included a third, dominated decoy option—a 30% chance to win $30. Although winning amounts were always represented as a number, the probability of winning was represented either as a numeric percentage or as the shaded region of a probability wheel. When probabilities were represented nu-
merically, we observed a significant attraction effect—the decoy increased the choice share of the target $-gamble from 21% to 34%. However, when probability was presented graphically, the decoy had no effect.

In Experiment 2, 240 respondents chose between television sets of different price and image quality. Price was always represented by a number. However, image quality was represented either as photos of the TV screens (the clarity of which was manipulated by adjusting the resolution of a picture file), or by the numeric ratings of those images as judged by a separate group of respondents (8.0, 5.5, and 3.5). When image quality was represented numerically, the choice share of the target TV (low price, medium quality) was dramatically increased by the presence of the decoy TV (low price, low quality) but when image quality was represented naturally, by a picture of the TV’s, the decoy TV substantially decreased the choice share of the target (what we term a “repulsion effect”).

Until now, the repulsion effect has been studied only indirectly in research on brand extensions, where imput brand extensions not only met early deaths, but also tainted the image and market share of the brand’s core products, thereby repelling toward the competitors. Despite the managerial relevance of this phenomenon, there has been no experimental research on the repulsion effect, let alone investigations of psychological mechanisms underlying it. The experiments we describe here are among only a handful that have examined the role of attribute representation on context effects, and are the first to focus specifically on the repulsion effect.

“Valence Asymmetries in Preference: The Case of Attraction Effect”
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Extant research in decision making has dealt with context effects, examining how individuals are susceptible to seemingly small (and often rationally irrelevant) factors in the decision environment. One of the most important context effects is the attraction effect (a.k.a. asymmetric dominance). The attraction effect refers to the phenomenon whereby an asymmetrically dominated alternative, when added to a set, increases the attractiveness and choice probability of the dominating alternative (Huber, Payne and Puto 1982).

Several explanations and possible mechanisms have been offered to account for the attraction effect, such as attribute importance signals (Ariely and Wallsten 1995), changes in the range of attribute values considered (Simonson and Tversky 1992) or ease of justification (Simonson 1989). Although this phenomenon have researched extensively and found to be very robust in variant domains (consumer products, politicians, romantic dates, job candidates and medical treatments), most of this research employed options that were predominantly favorable. Past research has shown, however, that people’s motivation, perceptions, learning and evaluations are systematically affected by the valence and framing of the options considered (Baumeister et al. 2001; Higgins 1997; Kahneam and Tversky 1979).

Accordingly, in this work, we explore how consumers react to context effects, like asymmetric dominance, when they are choosing among predominantly unfavorable options. We suggest that attribute representation and evaluation are significantly altered in negative domains, which reverse attraction effects in predictable ways. We argue that when attributes values are negative or unfavorable, consumers shift their representations. An attribute (e.g., battery life) that is reasonably good is viewed more as a promotion attribute, (which consumers would like to have more of). However, when the same attribute has values that are predominantly unfavorable, then consumers are more likely to view it as a prevention attribute, whereby their focus shifts to attempting to avoid the lower levels. This focus on the prevention of highly negative values, in turn leads to increased choice of the option that is superior on the prevention attribute—irrespective of the decoy introduced to the set. More importantly we suggest that this representational shift is more pronounced for the attributes that are more focal (critical). Based on the aforementioned theorization, we predicted to observe asymmetric dominance in the positive domain when a decoy is introduced. However, in the negative domains, we expected both a repulsion and an attraction effect, where the choices systematically favor the critical attribute and ignore the decoy option. We report results from two studies that systematically manipulate the favorability of the attributes and find support for our predictions.

In Study 1, participants were asked to imagine purchasing a digital camera, represented on ergonomics and battery life (focal attribute) that could have a value between −10 and +10. Option A was superior on ergonomics and option B was superior on battery life. The third option was either an A decoy (A’) or a B decoy (B’). We also manipulated the attribute valence by keeping the absolute values of the attributes same, but adding a negative sign. The results replicated the attraction effect in the positive domain. When no decoy was present, 35% of the participants choose option A. However, when A’ was introduced to the set, choice for A went up to 63%. Conversely, when B’ was added, only 22% of the participants chose option A. In the negative domain however, the 60% preference for A when no decoy was present, was decreased when A’ (37%) or B’ (43%) was introduced to the set. In another words, no matter whether A or B was the asymmetrically dominating alternative, participants indicated a preference for option B, which was superior on battery life (the focal attribute).

After demonstrating the proposed effect in a controlled setting with absolute negative numbers, Study 2 attempted to replicate the findings in a more externally valid context (i.e., where the stimuli had relative valence difference). We used a vacation scenario, asking participants to choose a hotel that was presented on two attributes: beach safety (focal attribute) and years since remodel. In the positive (negative) domain, the safety of hotels ranged from 6 to 19 deaths in a million (180 -235/1,000,000) and the years to remodel were 2 to 7 years in positive and 9 to 15 years in the negative domain. The results replicated study 1. Specifically in the positive domain, the choice share increased for option A (superior on safety) when A’ was introduced to the set (29% to 52%) and decreased when B’ was present (29% to 23%). In the negative domain though, adding both A’ (23% to 38%) and B’ (23% to 49%) increased the share of option A, which dominated on the focal attribute (beach safety).

In conclusion, we introduce attribute valence as a moderator of the attraction effect and show that one of the most robust context effects is eliminated (and even reversed) when identical attributes are presented in an unfavorable format. We further show this change takes place in a systematic manner and in negative domains introduction of any decoy leads to a higher choice of the option that is superior on the focal attribute.

“Too Much Fit? How Regulatory Fit Can Turn Us Into Buridan’s Asses”
Jonathan Levav, Columbia University
Ran Kivetz, Columbia University
Cecile Cho, Columbia University

This research is motivated by the idea that the robust phenomenon of context effects in consumer choice are a function of not only lack of well-defined preferences, but also of goal states and the multiple goals that drive one’s judgment and choice. The idea that
there is a relationship between task type and the attribute type being considered for the choice options has been supported in decision research (Nowlis and Simonson 1997). Similarly, research on goal-attribute compatibility suggests that an attribute’s relevance to a goal influences the weight of the attributes being considered, whereby the attribute that is more compatible with the goal is given greater weight over another less goal-relevant attribute (Chernev 2004).

Our work builds on this research on goal-attribute compatibility, but from the perspective of context-dependent choice. Drawing on the literature on regulatory orientation and fit, we propose that when there is fit between the one’s regulatory goal and the nature of the attributes being considered, context dependence increases. In other words, instead of fit being “good,” as implied by the regulatory fit literature, fit actually leads to more non-normative choice. We test this prediction using the compromise and asymmetric dominance effect framework in four studies (Huber, Payne, Puto 1982; Simonson 1989).

Study 1 tested the main hypothesis using the compromise effect paradigm, creating a tradeoff conflict involving attributes that are both high in promotion strength (versus both high in prevention strength). We predicted that preference for the compromise option would be higher when the participant’s goal state was promotion-oriented (fit) than when the participant’s goal state was prevention-oriented (nonfit). (We also conducted the same test for a prevention-oriented goal state.) Participants were given a series of trinary-choice tasks involving various purchase scenarios. Regulatory orientation was manipulated by having respondents report their hopes and aspirations (or duties and obligations; Higgins, Roney, Crowe and Hymes 1994). Two sets of attributes were used to create a tradeoff conflict for each of the choice scenarios. For example, a laptop category had two attributes that both mapped onto either promotion (processor speed and RAM memory) or prevention concerns (warranty and weight). Results showed robust support for the hypothesized fit effect; for seven out of the eight categories we used, the relative choice share of the compromise option was higher when there was a fit between the primed goal orientation and the attribute type.

In Study 2 we tested for the hypothesized too much fit effect using the asymmetric dominance test. Again, conflict was created using two promotion- or two prevention-type attributes. As with Study 1, respondents first completed the same priming tasks before making their choices in eight purchase categories. The effect differentials for the fit vs. no fit conditions were consistent with our hypothesis for six of the eight categories. For the vacation package item, for example, the asymmetric dominance effect was 17% under fit versus 5% under no fit for choices involving prevention-consistent attributes of “number of flight stopovers” and type of travel insurance included in the package.

We propose that the explanation behind this pronounced tendency to make context dependent choices under fit is that of decision conflict. Our underlying premise is that the greatest degree of context-dependent choice occurs when one is faced with the conflict of choosing between options that differ on two similarly weighted attributes. We tested this explanation in Study 3 by directly measuring perceived conflict and decision difficulty. To operationalize this we used choice deferral (i.e., an explicit no choice or “decide later” option) as one of the options, in addition to the two choice options. Next, respondents rated their preference for delaying their purchase, and the difficulty of choosing either of the two product options should they be forced to choose. We predicted that respondents in the fit condition (e.g. promotion prime-promotion attribute type) would have higher preference to delay their decision and rate the decision as more difficult. Results were consistent with our prediction: The ratings of “prefer to delay” and “difficulty of choice” were significantly higher under fit than under non-fit for seven of the nine categories tested.

Study 4 addressed the role of attribute weighting in the too much fit effect observed in the previous studies. In this study, attribute types used to create conflict were “mixed,” such that each choice would involve having to tradeoff between a promotion and a prevention-consistent attribute. We predicted that the attribute that fit the participant’s primed regulatory orientation would receive greater weight, and hence lead to a reduction in the share of the compromise option in favor of the attribute that is consistent with the primed goal state. We used the compromise effect task from study 1, except here attribute types were mixed, such that each choice option included one promotion and one prevention attribute. Choice shares were greater for the option that was superior on the goal-consistent attribute than on goal-inconsistent attribute. Ratings of importance were also higher for goal-consistent attributes than for goal-inconsistent attribute for thirteen out of sixteen attributes tested, lending further support to the notion that the observed fit effect occurs due to conflict and that this conflict occurs due to augmented weighting of the goal-consistent attribute.

In contrast to an abundance of consumer behavior and social psychological research that suggest that fit is “good,” our findings indicate that in certain decision contexts fit can actually increase non-normative choice.

REFERENCES


