The Role of Abstract and Concrete Mindsets on the Purchase of Adjacent Products

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Most choice research has examined consumer choices in isolation (from one category at a time). However, consumers often make a series of choices from adjacent categories (in the oral care aisle one may consider buying toothpaste, mouthwash, etc). This project explores how a consumer’s mindset (abstract versus concrete) will influence the number of items purchased from a set of adjacent products. Across several studies, we demonstrate that consumers in an abstract mindset purchase significantly more items from adjacent categories, relative to those in a concrete mindset. We identify an underlying shift in regulatory focus as the mechanism behind this effect.

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substitute condition. Still, consistent with our predictions, they thought that the assortment was more attractive.

Experiment 2 examined whether increased effort in complement organizations could be attributed to greater physical distance between target products. Does the act of flipping pages to view different consumption constellations explain this increase in effort? 92 participants were asked to select a pair of pants from an online assortment containing 8 pairs of pants. Participants were randomly assigned to one of three conditions: substitutes together (the 8 pairs of pants all displayed on 1 screen), substitutes separated (one pair of pants on each of 8 screens), or complements (8 pairs of pants displayed on 8 screens surrounded by complementary products). The computer captured time measures as well as subjective responses.

Our results suggest that the physical separation of items in complementary sets cannot explain the decision difficulty found in Experiment 1: Decision times were significantly longer in the 8-page complement than the 8-page substitute condition, where page distance was objectively equal and only the organization changed. Interestingly, differences in decision time were not driven by consumers actively examining complementary products, but rather by them spending more time looking at consumption constellations overall. As in Experiment 1, individuals shopping in complementary sets consistently took longer deciding and reported greater decision difficulty. Yet, such sets also generated greater assortment satisfaction and were seen as more inviting.

A third study more closely investigates the effect of consumption constellations versus substitute presentations on information acquisition across. Using digital cameras as the target product described along product attribute and price info, we show that respondents take longer making a decision, but they acquire fewer individual pieces of information about these cameras. Yet, replicating findings from our previous study, they enjoy the experience more.

As a whole, our research shows that even when consumers purchase products from a single, specified category, whether these products are immediately surrounded by complements as opposed to supplementary products substantially changes the decision process. Marketers may want to create such complementary environments because they seem inviting and engaging to consumers. However, they should also be aware that although consumers spend more time deciding, they do not engage in more detailed examinations of either the target products or any complements.

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LONG ABSTRACT

Most choice research has looked at how consumers choose in isolation (e.g., within one category at a time). In contrast, real world consumer choice often involves making a series of choices within adjacent categories that are considered together (e.g., a consumer in the oral care aisle may consider buying one or more items among toothpaste, mouthwash, floss, etc). Although many brands are widening their within-category product lines to take advantage of this phenomena (e.g., Varadarajan 2007), such extensions into these adjacent product spaces are more likely to generate incremental sales if consumers see such products as complementary rather than as substitutes for one another. Despite its ecological relevance, relatively little research has been devoted to exploring how consumer decision processes may change purchase considerations of other products in adjacent categories.

The current project makes an initial attempt to explore how a consumer’s construal level will influence the number of items a consumer purchases when presented with multiple adjacent-category offerings. Construal level theory (CLT) argues that consumers may form different representations of the same stimuli (e.g., products), based on psychological distance. CLT posits that when psychological distance is greater, a consumer will have a more abstract construal, characterized by higher-level representations of the stimulus, focused on central features (Trope and Liberman 2003). To that end, we argue that an abstract mindset will cause consumers to perceive adjacent products in terms of their relationship to higher order goals (e.g., oral care). Conversely, CLT states that when psychological distance is reduced, consumers form a more concrete construal of a stimulus, characterized by lower-level representations, such as the sub-goals each product can attain (e.g., breath freshening). Based on the differential activation of the higher order goal, we posit that an abstract mindset will increase the overall number of adjacent products purchased, as these products will be viewed as additional means to attain their broader goal. Under a concrete mindset, less will be purchased as fewer items will be necessary for lower level goal attainment. Further, we draw on the relationship between construal level theory and regulatory focus to identify the process underlying this effect.

Our predictions are tested in four studies. In the first study, participants’ completed a construal level manipulation (Freitas et al. 2004) then moved onto a task where they were told to imagine that the airline had lost their luggage. They were then given the opportunity to purchase replacement products from three categories (hair care, oral care and sun protection). Within each category, participants first made an initial choice (e.g., a choice between toothpastes in oral care). Next, they were presented with 5 additional items from adjacent categories (e.g., mouthwash, floss, etc.) and told to purchase any additional items which they would like from that set of options. In line with our prediction, within each category participants put in an abstract construal level purchased more additional items than participants in a concrete construal level (oral care: Mabstract = 2.1; Mconcrete = 2.9; p < 0.05; pattern replicated and was significant for all categories).

Our second study was designed to extend the findings from Study 1. As in Study 1 respondents chose a central item from the category (e.g., toothpaste in oral care) before considering additional purchases, one account for the results could be that respondents in the abstract construal condition might have had greater commitment to the goal of oral care after making an initial successful choice (Fishbach, Zhang and Dhar 2005). Thus, first choosing a toothpaste made respondents subsequently more likely to pursue the goal of good oral care through related means (e.g., additional purchases). The next study controlled for this account by offering all adjacent category items simultaneously, as a single choice. Specifically, after completing a construal level manipulation, participants were shown one category of products (e.g., oral care) containing twenty different items and asked to indicate which items from that category they would like to purchase. In support of our hypothesis, respondents assigned to the abstract construal condition made significantly more adjacent category purchases (oral care: Mabstract = 4.7; Mconcrete = 6.3; p < 0.05; results were replicated with an additional product category).

These two studies demonstrate that that one’s construal level can influence adjacent category purchases. Studies 3 and 4 test a
boundary condition and the mechanism underlying this effect. While Studies 1 and 2 demonstrate that having an abstract construal of the purchase decision increases the number of adjacent category purchases, as products unrelated to the category were not included in the choice set, one could argue that perhaps an abstract construal simply increases purchase interest generally, as opposed to only for products with shared goal-relevance. Study 3 is rules out this account by presenting respondents with an array of both goal-relevant and goal-irrelevant products. We demonstrate that being in an abstract construal increases the number of goal-relevant purchases only (replicating our initial finding) and has no effect on goal-irrelevant purchases. As prior work has demonstrated that a promotion mindset can lead to more abstract representations, in Study 4 we directly manipulate regulatory focus and demonstrate that manipulations of regulatory focus can have an analogous effect with a promotion focus leading to significantly greater adjacent product purchases.

At present, this research achieves several goals: we demonstrate that one’s construal level of a purchase decision affects the number of purchases which one makes when presented with multiple adjacent category offerings. As consumers make choices when they consider adjacent categories simultaneously has not yet been examined, we believe this research makes an important contribution to the extant research on consumer choice. Finally we believe that as the factors which influence product perceptions are of critical interest to firms these findings have clear practical implications.

The importance of value certainty in assessing multiple items simultaneously

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LONG ABSTRACT

As the other papers in this session make clear, when consumers make simultaneous decisions in multiple related domains or categories, the process has special characteristics not encountered in single product decision making. While co-promotion and even adjacent retail location can significantly impact decision outcomes, the situation becomes particularly interesting when the seller forces consumers to consider whether to buy a set of items as a bundle.

We know from previous research (Popkowski Leszczyc, Pracejus and Shen 2008) that the value of uncertain items can be strongly influenced by bundling them with certain items. Specifically, we showed that bundling an uncertain item with a second item about which consumers have high certainty about value can lead to two surprising effects. When the certain item is of low value, people tend to value the bundle less than the uncertain item alone. They would pay less for more. We call this effect Hyper-subadditivity. When the certain item has a high value, however, we get the opposite: superadditivity without complementarily, where consumers value the bundle more than the additive values of the individual items, even though none of the items are compliments.

We believe these results are due to consumer inference making about the uncertain product. Specifically, we showed that the effect is likely due to direct inference about value of the uncertain product, rather than numeric priming or inferences about the quality of the uncertain product. To further explore the specific mechanisms underlying hyper-subadditivity in bundle evaluation, we now attempt a more rigorous quantitative model of the phenomenon.

One hundred and thirty-six undergraduate business students participated in an auction where they bid their own money. We demonstrated hyper-subadditivity when the low value (high certainty) blank CDs are bundled with a medium value (low certainty) knife set. We also see superadditivity in the bundle consisting of the knife set and the (high certainty high value) DVD player. Additional information of relevance to this session includes the order in which participants considered the items and the role played by perceived retail price of each item.

Participants were asked which of the items in the bundle they considered first, plus their degree of certainty concerning the value. For the bundles consisting of the low-certainty knife set and one of the high-certainty goods (CDs or DVD player), 82.02% of the participants considered the item they were most certain about first. For the third bundle, consisting of the CDs and DVD player, with little difference in the degree of certainty in the values, most participants focused on the more expensive DVD player.

To further test our inference of value model, we consider the negative (positive) effect of the retail price of CDs (DVD player) on the retail price of the knife set, while controlling for the difference in the level of uncertainty in the estimates of the retail prices. For this purpose we estimate the following two regression models:

\[
RP_{knife} = \alpha_i + \beta_1 RP_{cd} + \beta_2 CP_{cd-knife} + \epsilon_i \\
(1)
\]

\[
RP_{knife} = \alpha_i + \beta_3 RP_{dvd} + \beta_4 CP_{dvd-knife} + \epsilon_i \\
(2)
\]

Where \(RP_{knife}\) is the estimated retail price for the knife set, \(RP_{cd} = \) the estimated retail price for the CDs, \(RP_{dvd} = \) the estimated retail price for the DVDs, \(CP_{cd-knife}\) = difference in the level of certainty in the individuals' estimate of the retail price of CD versus the knife set, \(CP_{dvd-knife}\) = difference in the level of certainty in the individuals’ estimate of the retail price of DVD versus the knife set, and \(\alpha_i, \beta_1, \beta_2, \beta_3, \beta_4\) are the parameters to be estimated, for i = 1, …n bidders (\(\alpha_i\) is an individual specific intercept, included to capture unobserved differences between individuals).

Consistent with our expectations, the estimate of the retail price for CDs has a negative effect on the retail price estimate for the knife set (\(\beta_1 = 1.14, p < .05\)), while the estimate of the retail price for the DVD player has a positive effect (\(\beta_3 = .22, p < .01\)). Furthermore, the negative effect for CDs is more substantial when the difference in the level of certainty in the individuals’ estimate of the retail price of the CDs minus the retail price of the knife set is greater (\(\beta_2 = -6.47, p < .01\)).

The results of these regression analyses, while consistent with our hypotheses, do not provide a definitive answer of the direction of inference. Further analyses provide more proof that the CDs retail price estimates influence those of the knives. When individuals are more certain about their estimate of the retail price of the knife set, their estimate of the retail price is $27.44 for CDs and $95.55 for the knife set. However, when individuals are more certain about the retail price of CDs, their estimate of the retail price is $28.04 for CDs and $66.82 for the knife set. While the CD estimate remains the same, the estimates for the knife set are lower (\(t = 1.75, df = 38, p < .10\)) when individuals are more certain about the retail price of CDs.
Discussion:

So, we can see that new evidence supports our previous conceptual model of how item uncertainty drives hyper-subadditivity in multi item bundles. Consistent with our expectations, participants reported that they considered the more certain item first, regardless of importance or price. In addition, participants views of a proxy for value (retail price) showed an impact of the certain item on the uncertain item, but not vice versa. Taken together, these findings demonstrate that when people are making a decision about multiple items, that value certainty plays a critical role. It suggests that people may often consider the more certain item first, giving it disproportionate weight in the decision process. It also suggests that great caution should be taken when combining items which vary in certainty, whether bundled, co-promoted or even merely co-located in a retail setting. Of course, the findings reported here are specific to bundles, so more research into value certainty seems warranted in other multi product domains.

REFERENCES


