Choice Overload With Repeated Choice Exposures: the Role of Preference Retrieval and Variety

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Research on the psychological conflicts underlying choice overload has investigated one-off choices, whereas consumers often experience repeated choice exposures over time. We show that when consumers cannot retrieve their initial preferences, the choice overload effect reverses and choosing from smaller sets generates less decision confidence than choosing from larger sets.

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Conflicted Choices: New Perspectives on Choice Conflict
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Paper #1: When Two is Better than One: Polarization and Compromise in Unrestricted Choice
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Alexander Chernev, Northwestern University, USA
Aaron R. Brough, Pepperdine University, USA

Paper #2: By Tradeoff or by Criterion: Bottom-Up Construction of Constructive Decision Rules
Aner Sela, University of Florida, USA
Itamar Simonson, Stanford University, USA

Paper #3: Blurring Similarities and Differences: The Role of Category Width on Salient Comparison Orientation
Selin A. Malkoc, Washington University, USA
Gülden Ülkümen, University of Southern California, USA

Paper #4: Choice Overload with Repeated Choice Exposures: The Role of Preference Retrieval and Variety
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SESSION OVERVIEW
In many everyday decisions consumers experience choice conflict, stemming from the need to make difficult trade-offs between the available choice alternatives. Understanding how consumers choose when faced with decision conflict is important because their choices ultimately influence their happiness and well being. Prior research suggests that experiencing choice conflict might lead consumers to choose a compromise option that provides moderate levels of performance on all desired attributes (Simonson 1989; Simonson and Tversky 1992), defer choice and avoid purchasing any of the available options (Dhar 1997; Tversky and Shafir 1992), or seek variety and purchase multiple options (Simonson 1990). This special session aims to advance our understanding of how consumers deal with decision conflict. The four papers offer a diversity of innovative perspectives that enhance the breadth of our knowledge in this area of research, providing a coherent yet diverse set of findings.

The first paper, by Bonezzi, Chernev and Brough, argues that the strategy consumers use to resolve decision conflict is contingent on purchase quantity restrictions. In particular, this paper shows a polarization effect, whereby, when purchase quantity is not restricted to a single option, consumers tend to resolve decision conflict by choosing multiple options with extreme attribute values rather than a single compromise alternative. This polarization effect in unrestricted choice is attributed to consumers' desire to resolve decision conflict by maximizing gains rather than minimizing losses.

The second paper, by Sela and Simonson, argues that certain features of a choice problem can prompt consumers to deal with choice conflict by adopting either compensatory (trade-off based) or lexicographic (criterion-based) decision strategies. In particular, attribute frames that appear generic and not unique to the choice-set being evaluated induce criterion-based decision-making. In contrast, attribute frames that make the attributes seem local and relevant to the particular problem at hand induce tradeoff-based decision-making. Notably, while criterion-based decision strategies lead to selection of compromise alternatives, tradeoff-based decision strategies lead to selection of extreme alternatives.

The third paper, by Malkoc and Ülkümen, argues that the degree of decision conflict consumers experience when choosing among two or more products can be influenced by the comparison focus adopted. In particular, focusing on the similarities among the available choice alternatives increases decision conflict, compared to focusing on the differences among the available choice alternatives. Importantly, this paper shows that the width of the categories to which consumers are exposed before making a choice influences the comparison focus they will adopt for the choice at hand, thus influencing decision conflict.

The fourth paper, by Botti, Iyengar and Gu argues that psychological conflict stemming from choosing from larger versus smaller choice sets can be mitigated by repeated choice exposures. Repeated choice exposures reduce conflict by increasing familiarity with the choice task and allowing consumers to retrieve previously-established preferences, thus decreasing the cognitive and emotional conflict associated with perusing a great number of options in larger choice sets. However, when consumers cannot retrieve their initially established preferences, the choice overload effect reverses and choosing from smaller sets generates less decision confidence than choosing from larger sets.

Taken together, these four papers advance our understanding of how consumers make decisions under conflict. Overall this session offers a coherent set of innovative perspectives that enhance the breadth of our knowledge in an established area of research. We expect this session to appeal to a broad audience, and be of particular interest to researchers studying choice and decision making. Data collection in all papers is complete, or at an advanced stage of completion. All participants have agreed to present, should the session be accepted.

When Two is Better than One: Polarization and Compromise in Unrestricted Choice

EXTENDED ABSTRACT

When faced with a decision involving tradeoffs between the available choice alternatives, consumers often attempt to resolve decision conflict by selecting a compromise option (Simonson 1989; Simonson and Tversky 1992). In particular, prior research on the compromise effect has shown that the choice share of an option increases when it becomes the middle alternative in a choice set, rather than one of the extremes (Kivetz, Netzer, and Srinivasan 2004). Choosing a compromise option resolves conflict by enabling consumers to minimize tradeoffs between attributes of the available options by avoiding the lowest levels of performance on any single attribute (Simonson and Tversky 1992).

Most of the existing research on the compromise effect, however, has investigated situations in which consumers are restricted to choosing a single alternative from a given set of options (Benartzi and Thaler 2002; Dhar and Simonson 2003; Simonson and Nowlis 2000). In reality, however, purchase quantity is often discretionary and consumers frequently choose multiple items. This raises the question of whether and how removing the single-option restriction from the choice task will influence consumer preferences for how to resolve decision conflict.

In this research, we argue that when choice is unrestricted, consumers tend to resolve decision conflict by choosing multiple options with extreme attribute values rather than a single compromise alternative. We propose that this polarization effect is a function of the degree of decision conflict experienced by consumers. In par-
ticular, we argue that preference for multiple extreme options is more pronounced when decision conflict is high rather than low, a prediction opposite to previous findings in the context of restricted choice, which show that heightened decision conflict increases preference for the compromise option at the expense of the extremes. We attribute this polarization effect to consumers’ desire to maximize gains on each attribute, rather than settling for intermediate performance on both.

We documented this polarization effect in unrestricted choice across three empirical studies. In experiment 1, we documented the polarization effect by showing that when choice is unrestricted, preference share of the compromise option declines as consumers opt to resolve decision conflict by selecting multiple extreme options rather than a single intermediate one. Consistent with the compromise effect, choices across four product categories showed that when participants could select only one of three available options (ABC), preference for B was higher than when the set consisted only of AB or BC. However, when participants were permitted to select two options, preferences shifted toward the combination AC rather than B. For example, in the headache medications category, participants were shown three options which varied in how quickly they relieved pain (onset) and how long they lasted (duration). In restricted choice, people preferred medication B, which had a moderate onset and moderate duration. However, in unrestricted choice, preference for B declined and instead people preferred a combination of two extreme medications—A, which had the shortest onset but shortest duration, and C, which had the longest onset but longest duration. This polarization effect was consistent across each of the four categories tested.

In experiment 2, we provided evidence that choice conflict drives this polarization effect by showing that the polarization effect becomes more pronounced as decision conflict increases. We manipulated conflict by varying the range of attribute values of the two extreme options (A and C) while holding constant the attribute values of the compromise option (B). For example, in the sunscreen category, the difference in UVA protection between the two extreme options A and C was 40% in the low conflict condition but 80% in the high conflict condition. These results are consistent with our theory that the polarization effect occurs as consumers attempt to resolve conflict differently in unrestricted versus restricted choice.

In experiment 3, we provided further evidence for the underlying process by showing that the polarization effect is more likely to occur when consumers focus on maximizing gains rather than minimizing losses. Prior to articulating their preferences, participants in one condition listed the advantages of each option in the choice set, whereas participants in another condition listed the disadvantages of each option. Results indicated that the polarization effect in unrestricted choice was attenuated among participants who focused on the disadvantages rather than on the advantages of each option.

The present research provides an important contribution to the literature on choice conflict and the compromise effect. Contrary to prior findings that in restricted choice consumers attempt to resolve decision conflict by selecting a compromise option, we show that in unrestricted choice, consumers are less likely to select the compromise option and instead display a preference for extreme options. Our results further suggest that the greater the conflict a consumer experiences when deliberating about the different choice options, the more likely he is to choose multiple extreme options rather than a single intermediate one when choice is unrestricted. From a conceptual standpoint, our findings lend support to the notion that the polarization effect occurs because people wish to resolve conflict by maximizing gains; polarization is likely to occur when people focus on the advantages of having both options, but is likely to be attenuated when people recognize the disadvantages of choosing extreme options.

**By Tradeoff or by Criterion: Bottom-Up Construction of Constructive Decision Rules**

**EXTENDED ABSTRACT**

When faced with a choice problem, decision makers often engage in tradeoffs to identify the best option. Alternatively, they may first identify the most important attribute(s) and then proceed to select the best option given these criteria. These strategies roughly correspond to compensatory and lexicographic decision strategies, respectively, which have been discussed extensively in the JDM literature (Bettman, Luce, and Payne 1998).

However, whereas the traditional view sees the choice between such decision strategies as a top-down process, largely determined by people’s information processing goals (e.g., balancing accuracy vs. cognitive effort, minimizing negative emotion, or maximizing ease of justification; Bettman et al. 1998), we propose that the tendency to focus on tradeoffs versus criteria can be driven by bottom-up features of the choice problem itself. That is, certain problem domains and attribute frames may cause decision makers to focus on tradeoffs, whereas others call for use of generic criteria.

Moreover, choice based on criteria (i.e., the lexicographic strategy) itself has generally been treated as contingent on people’s ability to recruit relevant beliefs and preferences in a top-down manner, either from memory or from other available sources (e.g., a consumer may choose based on the belief that reliability is the most important attribute for a car). However, we demonstrate that people may use the lexicographic strategy and choose based on criteria even when they cannot retrieve or otherwise rely on meaningful preferences and values. Namely, criterion-based decision making may be driven not only by the availability of relevant criteria but by a metacognitive belief that one should have consistent priorities in a certain domain.

We identify two bottom-up factors that influence the choice between tradeoff- and criterion-based decision-making. First, we argue that attribute descriptions or frames that appear generic and not unique to the choice-set being evaluated, tend to induce criterion-based decision-making. In contrast, attribute frames that make the attributes seem local and relevant to the particular problem at hand induce tradeoff-based decision-making. In addition, we show that dispositional and situational influences (e.g., nonconscious primes) can induce tradeoff-versus criterion-based decision-making, causing people to use lexicographic strategies even in the absence of applicable criteria.

We demonstrate these propositions in five studies using the compromise effect (Simonson 1989; Simonson and Tversky 1992). Prior research has demonstrated that selection of the compromise (i.e., middle) alternative typically reflects compensatory tradeoff-making (Dhar, Nowlis, and Sherman 2000; Khan, Zhu, and Kalra 2011). In contrast, choice of an extreme option is more likely to reflect criterion-based selection (i.e., the belief that one attribute is more important).

In study 1, we show that three-option choice problems involving generic attributes tend to produce extreme choices whereas problems in which the attributes seem more local and relevant only to the specific product at hand lead people to choose the middle option. Further, we show that the tendency to compromise is stronger among people high in self-monitoring (Snyder 1987), whereas the tendency to select an extreme option is stronger among low self-monitors. This suggests that the tendency to use a tradeoff versus criterion-
based strategy may be influenced by general individual dispositions that affect the tendency to base decisions on situational cues versus inner attitudes and beliefs.

In study 2, participants were primed with words related to either calculation (e.g., compute, exchange), principles (e.g., faith, opinion), or neutral words (e.g., birds, fabulous). Then, they made choices from a number of three-option choice-sets. The results indicate that, whereas the calculation prime increased the tendency to select the middle option compared to the control condition, the principles prime increased the tendency to select an extreme option. Thus, a mere “principles mindset” caused people to employ a criterion-based decision strategy.

One might argue that a principles prime and low self-monitoring decrease the tendency to choose the middle option because they lead people to reflect on their preexisting attitudes for familiar options. However, study 3 demonstrates that these effects are independent of existing attitudes by using a truly hypothetical product with hypothetical attributes. We first primed half of the participants with principles by having them write about a situation in which their decision was strongly influenced by personal values and principles. The other half served as control group. We then asked participants to choose among three made-up options differing on two made-up attributes. Whereas 82% chose the middle option in the control condition, this decreased to 64% in the principles prime condition ($p < .06$). Taken together, these results suggest that criterion-based decision-making may be driven in part by a metacognitive notion that one has or should have relevant criteria in a certain domain, independent of the actual availability of such criteria.

Study 4 demonstrates how specific task characteristics can activate one mode of preference construction versus the other. Before making choices, some participants rated the importance of each of the two attributes that define the choice set on two separate scales (one for each attribute), which highlights the distinct goal underlying each polar dimension. Others rated the attributes on a single bi-polar scale, which highlights the tradeoff between them. The results indicate that participants who rated the attributes separately were more likely to choose an extreme option compared to a control condition, whereas those using a single bi-polar scale were more likely to choose the middle option.

Our last study (in progress) examines how the framing of attributes as generic (e.g., capacity and portability for a BBQ grill) versus local (e.g., cooking area and weight) induces criterion-versus tradeoff-based decision-making, respectively, resulting in increased choice of extreme options versus an increase in the choice of the compromise option.

Taken together, the studies make an important contribution by demonstrating that the choice of decision strategies itself may be constructed, based on bottom-up factors rather than top-down information processing goals.

**Blurring Similarities and Differences: The Role of Category Width on Salient Comparison Orientation**

**EXTENDED ABSTRACT**

Almost all purchase decisions consumers make involve a comparison between two or more products. When purchasing a car, computer, or even a wristwatch, consumers focus on either the similarities or differences between options. Retailers often strategically sway what consumers pay attention to (e.g., a salesclerk pointing out similarities or differences), hoping to influence their ultimate choice. We suggest that the adopted comparison focus has important implications for whether two products are perceived to be similar or different - regardless of their objective similarity. Furthermore, consumers’ perceptions of product similarity have other important consequences on decision conflict and preference strength. For instance, to the extent that consumers view options as similar, they would have a harder time differentiating them and thus increasing their choice difficulty, decreasing their strength of preference and influencing their willingness to pay for options.

Previous literature suggests that certain contexts make similarities or differences relatively more salient and the decision makers are likely to adopt this salient comparison focus in their evaluations. However, this research is mute on whether there is any factor that would lead consumers to deviate from this salient focus. We argue that while important, contextual salience might not be sufficient in understanding why consumers adopt or not adopt a salient comparison focus. In particular, we examine how the width of categories consumers have been previously exposed to (Ulkuken, Chakravarti, and Morwitz 2009) would influence the adaptation of salient comparison focus.

Our theory suggests that being exposed to narrower (broader) categories leads to use of more (less) dimensions in evaluations and decisions (Ulkuken et al. 2009). Accordingly, we argue that while the uni-dimensional broad categorizers will follow the cues given by the context and adopt the salient comparison focus, while the multi-dimensional narrow categorizers will attend to both similarities and differences – regardless of the salient cues in the environment. We also show that this shift in comparison focus alters perceptions of similarity, and influence choice conflict, evaluations of a new product offering, and preference strength.

In study 1 ($N = 86$) participants first completed the category width (CW) manipulation, where they responded to questions about themselves that had either many, narrow response categories (narrow condition), or few, broad response categories (broad condition). Next, they considered two backpacks, which were described by a salesclerk as either similar to or different from each other. Participants made a choice and reported their relative consideration of the similarities and differences – regardless of the salient cues. We found that CW moderates the effect of salient orientation on consideration of similarities and differences. That is, while the broads adopt the focus (similarities or differences) suggested by the context, narrow’s are less sensitive to the context and consider both similarities and differences.

Study 2 ($N = 108$) extended this effect to similarity perceptions as it pertains to multi attribute products. Participants first completed the same CW manipulation. Next, they made choices between two target products in three categories (beer, TV, car). Target products were presented together with two additional products that either had more extreme attribute values (designed to make the target products more similar) or fell between the target products (and made the target products appear more different). Participants indicated their perceived similarity of the two products, both on attribute level and overall. We find that while broad categorizers adopted the salient cue and thus found the options more similar (dissimilar) when the surrounding options were extreme (in between), the similarity judgments of the narrow categorizers were uninfluenced by the salient cues.

In study 3 ($N = 92$), we explored the downstream consequences of this effect to consumers’ strength of preference and decision conflict. Participants first completed the same CW manipulation. Next, they saw a furniture catalog and made a choice between two target chairs. We manipulated salient comparison focus by visually varying the background chairs to be either similar or different from target chairs. Participants reported their decision confidence and conflict,
preference strength, and their relative consideration of similarities and differences. As expected, we found that broad categorizers who focus on the salient similarities (differences) experienced higher (lower) decision conflict, and lower (higher) confidence and preference strength. As expected, this was not the case for narrow categorizers. Moreover, these effects were mediated by the relative consideration of similarities and differences.

Lastly, in study 4 (N = 84) we investigate a different context where similarity perceptions are of utmost importance. We explore consumer’s responses to a stock out, where the new alternative offered is either similar to or different from their original selection.

Participants completed a different manipulation of CW, followed by a choice among several backpacks. They were told their selection was out of stock and were offered an alternative backpack, which was either objectively similar to or different from their selection. We measured participants’ attitudes toward the new backpack, and their consideration of similarities and/or differences while choosing. As before, we found that the focus manipulation influenced attitudes only for broad categorizers, such that participants liked the new offering more when they focused on its similarity to the original backpack, than when they focused on its difference. Moreover, as in study 3, relative consideration of similarities and differences mediated the effect.

In four studies we show that the experienced choice conflict, preference strength and product evaluations are significantly influenced not only by the salient comparison orientation, but also by the width of categories consumers are previously exposed to in an unrelated context. Using multiple manipulations of similarity orientation, we demonstrate that consumers exposed to broad categorizations experience more choice conflict when a similarity (vs. difference) orientation is made salient. In contrast, consumers exposed to narrow categorizers consider both similarities and differences between products regardless of the salient comparison orientation.

Choice Overload with Repeated Choice Exposures: The Role of Preference Retrieval and Variety

EXTENDED ABSTRACT

Research on choice overload has shown that the psychological conflicts involved in choosing from larger, versus smaller, sets can decrease satisfaction and decision confidence (Iyengar and Lepper 2000). And yet, in real life consumers seem able to cope with large assortments better than researchers would expect, as they not only regularly make choices from these assortments, but also demand more choices and variety. How can we reconcile consumers’ apparent ability to handle extensive choice with the evidence for its detriments? One possibility is that participants in choice overload studies are typically asked to make one-shot decisions, whereas in real life consumers often have the option to make repeated choices over time. One may expect that repeated choice exposures mitigate choice overload. Larger sets, relative to smaller ones, increase the likelihood of finding the option that best matches individual preferences because of their greater variety. In the one-shot decisions investigated in choice overload, this benefit is overwhelmed by the higher level of cognitive and emotional conflict associated with perusing numerous, versus fewer, options, which results in lower decision confidence. In contrast, it is plausible that repeated choice exposures reduce conflict by increasing familiarity with the choice task (Alba and Hutchinson 1987), and therefore enhance consumers’ confidence with decisions made from larger sets.

In this paper, however, we hypothesize a more complex relationship between repeated choices and decision confidence, and specifically that this relationship depends on the interaction between preference retrieval and variety. When the preferences expressed in an initial choice cannot be retrieved in a subsequent choice, lower variety will progressively reduce the confidence of consumers choosing from smaller, relative to larger, sets and reverse the choice overload effect. In contrast, when these preferences can be retrieved, these consumers’ original greater confidence will persist over time despite lower variety.

We build this hypothesis on two findings. First, consumers construe their preferences based on the available alternatives and tend to retrieve these initial preferences when making subsequent choices (Hoeffler and Ariely 1999). Second, variety is less important when preferences are more clearly established, as in the case of small-set choices, than when they are more uncertain, as in the case of large-set choices (Simonson 1990). If consumers cannot retrieve their preferences in subsequent choices, for example because the initial selection becomes unavailable, they need to re-engage in the choice task and re-construct their preferences. For consumers choosing from smaller, relative to larger, sets, repeated exposures to the choice task are unlikely to further reduce the already low level of decision-related conflicts; rather, reiterated attempts to preference construal will just heighten the disadvantages of limited variety (Chernev 2003) and gradually reduce their higher initial confidence. Conversely, if the preferences initially construed can be retrieved at a later time, these consumers’ original greater confidence is unlikely to be negatively affected by low variety. Consumers choosing from smaller, versus larger, sets will be more likely to simply retrieve those preferences without re-engaging in the choice task, thereby maintaining their initial relative superior confidence over time.

We test these predictions in two studies. In the first study, we prevented participants from retrieving their preferences and expected a reversal of the choice overload effect. Participants were exposed for 10 subsequent days to the same selection of iTunes, either 300 songs (large-set condition) or 30 songs (small-set condition). Each day, participants were emailed a survey. The first part of the survey assessed their satisfaction with the song chosen in the previous day, the second part required them to choose another song, and the third part included questions about the choice-task difficulty. Because each selected iTune was downloaded on participants’ computers, they had to re-engage in the choice task at each exposure. Consistent with choice overload, on the first exposure participants reported greater difficulty and stress, and lower decision confidence, in the large-, versus small-, set condition. Over the subsequent nine exposures, the choice process became easier and less stressful for participants confronted with a larger, relative to a smaller, set. As predicted, decision confidence decreased in the small-, as compared to the large-, set condition, and on the last exposure choosing from a smaller set generated lower confidence than choosing from a larger set.

In the second study we allowed participants to repeat their choices. This study involved five choice exposures on five consecutive days to the same selection of chocolates that was either large (large/same: 50) or small (small/same: five), such that participants were free to choose the same chocolate in different days. We confronted these two conditions with a third one that, similar to the large-set condition in study 1, offered greater variety but no possibility for preference retrieval. In this third condition, participants were also exposed to a small set of five chocolates, which however changed every day, forcing participants to re-engage in the choice task at each exposure (small/different). Each day participants chose a chocolate from one of the three sets, tasted it, and answered a questionnaire similar to the one employed in study 1.
Consistent with choice overload, on the first exposure choosing from both smaller sets was considered easier, less stressful, and conducive to greater decision confidence than choosing from the larger set. Over repeated exposures, choosing became increasingly easier and less stressful for participants in the large-set condition than for those in both small-set conditions. As we predicted, however, decision confidence remained higher in the small/same condition relative to the large/same condition, indicating that the choice overload effect persisted over time. In addition, in line with previous results, participants in the small/different condition became increasingly less confident relative to those in the other two conditions, indicating that variety is less important when preferences can be retrieved.

In conclusion, these results suggest that choice overload can be mitigated by repeated choice exposures, but only when consumers cannot settle on the preference they have construed within the initial choice-set boundaries.