Special Session Summary  Context Effects in Choice

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[to cite]:

[url]:
http://www.acrwebsite.org/volumes/8809/volumes/v31/NA-31

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The importance of context effects has been underscored by numerous researchers in the field (Bettman, Luce, and Payne, 1998; Simonson and Tversky 1992). Building on the existing literature, this session investigates the impact of context on choice from three different theoretical perspectives.

The first presentation by Chernev examined how traditional context effects, such as extremeness aversion, are affected by the internal properties of choice alternatives. It was proposed that the compromise effect is not only a function of the relational properties of the choice alternatives but also depends on the proximity of the attribute ratings describing each of the alternatives. This proposition was tested in a context in which one of the choice alternatives was scale-equivalent, that is, it had equal values on both attributes. The data from two experiments showed that the presence of such alternatives can fundamentally change consumer evaluations of the extremeness of the options in the choice set.

The second presentation by Nowlis, Dhar, and Simonson examined the impact of context effects by focusing on the role of different types of tradeoffs that consumers must make when deciding how much of an item to buy. For example, consumers must often make tradeoffs between different levels of brand equity, price, flavor, size, and nutritional information. It was proposed that when consumers make multiple tradeoffs, the order in which these tradeoffs are considered can affect the overall amount that is chosen, due to differences in the manner in which different types of tradeoffs are resolved. In this context, it was argued that tradeoffs involving positive associations are likely to be resolved by purchasing several options whereas tradeoffs involving negative associations might lead to a lower purchase incidence.

The third presentation by Gershoff and Kivetz investigated the role of context effects in choice by examining how existing products may serve as the reference for fairness evaluation and choice of newer versions. The authors show that fairness perceptions and choice are highly sensitive to differences in common production methods: disabling alternatives (i.e., “versioning”), enhancing alternatives, or producing alternatives using different processes. Three studies demonstrated that the interaction between marginal costs and counterfactual thinking underlies the detrimental effect of versioning on fairness judgments and subsequent purchase behavior.

At the end of the session, Joel Huber led the discussion to integrate the individual presentations into a more general framework. He noted that the research presented defines three novel context effects that can be easily characterized: The first paper tells us that balance matters, the second that the agenda matters, and the third that the story matters. He further noted that these are all interesting and compelling context effects in their own right. The discussion underscored the importance of developing a broader perspective on the role of context effects to investigate the impact of the decision context on consumer choice.

“Context Effects without Context: Scale-Equivalence and Attribute Balance in Choice”
Alexander Chernev, Northwestern University

One of the major findings that have emerged from recent decision research is the presence of extremeness aversion in choice (Simonson and Tversky, 1992). The principle of extremeness aversion predicts that adding an adjacent nondominated alternative will draw a larger share from the extreme than from the middle alternative. To illustrate, consider a set of two-dimensional alternatives \([x, y, z]\) such that \(y\) is between \(x\) and \(z\) (e.g., \(x_1 < y_1 < z_1\) and \(x_2 > y_2 > z_2\)). The extremeness aversion principle predicts that because \(y\) has smaller advantages and disadvantages with respect to \(x\) and \(z\), whereas both \(x\) and \(z\) have larger advantages and disadvantages with respect to each other, \(y\) will be preferred in the choice set \([x, y, z]\) relatively more than in either of the sets \([x, y]\) and \([y, z]\).

An implicit assumption of the extremeness aversion principle is that decision makers rely exclusively on the choice context to determine the extremity of each alternative, such that advantages and disadvantages of each alternative are defined relative to each other. In this context, it is assumed that the middle option, defined such that its attribute values are between the values of the other alternatives, is always the option that becomes the compromise choice. The assumption that the middle option becomes the compromise is also very intuitive because the values of the middle alternative on each of the attributes lie between the values of the other, more extreme options.

Research presented in this article challenges the assumption that extremeness aversion is based only on the relational properties of the choice alternatives. It is argued that in certain cases individuals can use the available attribute ratings to construct reference points that are in turn used to evaluate the extremity of the choice alternatives. In this context, it is proposed that the middle option is not always the compromise alternative, and that in some cases one of the adjacent options can actually become the compromise. The viability of this proposition is tested by identifying a scenario in which individuals are likely to form a reference point that differs from the reference point implied by the relational properties of the alternatives. To illustrate this scenario, I introduce the notion of scale equivalence and discuss how the presence of scale-equivalent alternatives might affect extremeness aversion in choice.

Consider four alternatives, each described on two attributes as follows: A (50,70), B (60,60), C (70,50), and D (80,40), where the numbers in parentheses reflect an option’s ratings on each of the two attributes. Note that option B has a unique property: it has equal values on both attributes. I refer to this option as the scale equivalent and argue that it can fundamentally change consumer evaluations of the extremeness of the options in the choice set.

How might scale equivalence of an option in the choice set affect consumer decisions? This research argues that scale equivalence is likely to make the adjacent option B a reference point in extremeness judgments and, as a result, this option will be perceived to be less extreme relative to the other alternatives in the set. This argument leads to the counterintuitive prediction that in the set BCD the compromise alternative is not option C, as predicted by prior research, but the scale-equivalent option B. Consequently, it is argued that adding option D to the set BC will not necessarily increase the share of option C because the latter might not be perceived as the compromise option.

Data from two studies document the impact of scale equivalence on extremeness aversion in choice. It is shown that scale equivalence of an alternative increases the likelihood of this alternative being perceived as the compromise option and subsequently being chosen by an extremeness-averse person. Both qualitative and quantitative analyses of consumers’ rationale for selecting the compromise option suggest that the scale-equivalent alternative is
likely to become the compromise alternative due to the parity of its attribute ratings. In fact, the scale-equivalent alternative was commonly referred to as the middle option even when it was one of the adjacent alternatives in the set. Consumers also indicated that the selection of the scale-equivalent alternative is both easier to justify and less likely to be criticized.

The data offered by the second experiment provide insights into the boundary conditions of the scale equivalence effect, documenting its contingency upon individuals’ information-processing strategy. In this context, the scale equivalence effect was found to be less pronounced in the context of a decision task designed to induce attribute-based processing of the available information. This finding offers a new perspective on the common assumption that, when evaluating an option’s extremeness, consumers compare its values attribute-by-attribute across all alternatives. Contrary to that assumption, the data show not only that within-attribute comparisons occur, but also that the effects of these comparisons on extremeness aversion can be stronger in relative terms than the cross-attribute comparisons. Moreover, this finding suggests that the evaluation of an option’s values on a given attribute can also be a function of how its scaling properties relate to the scaling properties of the other attributes describing the same option.

“The Effect of Tradeoff Resolution Order on Consumer Choice”
Stephen M. Nowlis, Arizona State University
Ravi Dhar, Yale University
Itamar Simonson, Stanford University

Consumer choice consists of brand, incidence, and purchase quantity decisions. In contrast to standard choice models, both brand choice and choice incidence have been shown to be influenced by the context (e.g. Nowlis and Simonson 1997; Dhar and Nowlis 1999). However, while there has been some prior research on how much is chosen (e.g., Wansink, Kent, and Hoch 1998), a question that is still unanswered in the literature is whether the purchase quantity decision will also be systematically influenced by the choice context. In this research, we focus on how the order in which attribute tradeoffs are resolved can impact the amount and variety of a product that is chosen. Since consumers typically consider incidence, brand choice, and purchase quantity decisions, the interaction between them is important to get a better understanding of consumer choice in the marketplace.

Prior work on brand choice and choice incidence has shown that decision conflict is an important variable in determining what is chosen and whether a choice is made. This research has found that increased conflict can result in the greater choice of a status quo option (Luce 1998) or an increased tendency to defer a choice (Dhar 1997). In our research, we build on this work to suggest another important consequence of decision conflict; namely, that it can also affect the amount that is chosen. In particular, we propose that as the decision becomes more difficult, consumers will resolve this difficulty by choosing a greater overall amount and greater variety. By spreading out the choice of options among several different product configurations, consumers can reduce the difficulty of the decision.

If the purchase quantity decision is affected by decision difficulty, this can have important consequences for decision making that occurs in stages. In particular, consumers often resolve attribute conflict in a specified sequence. For instance, a consumer in a store might see products organized by one type of attribute (e.g., brands), and then decide among different levels of that attribute before deciding on the next attribute (e.g., sizes). We propose that the order in which these tradeoffs are resolved will have a systematic effect on the amount that is chosen. In particular, if a more difficult attribute is faced in the first stage of a decision, we predict that the consumer will then choose more of this attribute than if an easier attribute were considered in the first stage of the decision. When more of an attribute is chosen in the first stage, this will translate into more chosen in the second stage as well. For instance, if a consumer decides among different brands before deciding among different sizes, that consumer might choose more than if the size decision preceded the brand decision.

We conducted a number of studies which support our framework and predictions. These studies manipulated the order in which tradeoffs were considered, and the types of tradeoffs that were required. Across the experiments, we find that when a more difficult attribute is encountered in the first stage rather than the second stage of the decision, more overall is chosen and more variety is chosen. Furthermore, this effect is mediated by the amount of conflict felt in the decision. We also show that when the conflict in an attribute decision is reduced, this eliminates the effect of order on amount chosen. Finally, we extend our results to situations involving negative tradeoffs, and examine the implications of our findings for the way in which products are organized on store shelves.

“The Psychology of Versioning: Context Effects and Counterfactual Thinking as Determinants of Fairness Perceptions and Choice”
Andrew D. Gershoff, Columbia University
Ran Kivetz, Columbia University

Firms often produce an assortment, or line, of different versions of their products to offer to consumers. For example, HP sells computer printers that print at 15, 19, and 25 pages per minute. There are a number of ways that firms can manufacture these different versions of their products (Shapiro and Varian 1998). First, firms may use entirely different production processes. Alternatively, firms may create different versions using largely the same processes by producing a base product and making adjustments to it. For example, firms may produce value-enhanced versions by taking an existing product and augmenting it in some way to make a new version of the product. Firms may also create value-subtracted versions by taking an existing product as a base and offering it as a new product with some of its features disabled. This method, labeled by Shapiro and Varian (1998) as “versioning,” is commonly used to produce different versions of software and often hardware. Note that while value-enhancing costs the firm more to produce a more preferred alternative, value-subtracting costs the firm more to produce a less preferred option. The present research proposes that consumer preference and perceptions of product alternatives will be systematically affected by the method employed to create the product version.

Prior research has shown that a consumers’ willingness to pay for an alternative may be influenced by the perception of the fairness of the alternative’s price (Campbell 1999; Kahneman, Knetsch and Thaler 1986). Consumer perception of price fairness is proposed to be governed by a rule of “dual entitlements” that suggests that buyers are entitled to a price and sellers are entitled to a profit (i.e., price minus marginal cost) associated with a reference transaction (Kahneman et al. 1986). Higher prices compared to the reference transaction are perceived as unfair if the firm’s costs have not changed. However, when a firm’s costs increase, a higher price is perceived as fair.

Recent research has suggested that consumers may use a number of potential reference transactions in their evaluation of fairness including past prices, competitors’ prices, and vendor costs (Bolton, Warlop, and Alba 2003). We suggest that alternative
versions of a product offered by a firm will also serve as a reference, allowing consumers to use one version of the product to evaluate the fairness of the exchange for another version. For instance, an original version of the product may become the reference transaction against which the fairness of the exchange for a newer version can be judged. Further, using theory on counterfactual reasoning (e.g., Kahneman and Miller 1986) and fairness to develop hypotheses, it is proposed that compared to versions that are created by different processes and by value-enhancement, value-subtracted versions reduce (or even reverse) the perceived differences between the versions in terms of the marginal cost, effort, and time for the firm to produce. Thus, consumers will perceive the manufacturing process to be less fair and be willing to pay less for value-subtracted versions compared to identical alternatives that are described as being produced by different processes or value-enhancement.

Three completed studies test the robustness of the effects in terms of evaluation of products within a firm as well as choice of alternatives between firms. In study one, one hundred and seventy-six respondents were provided with “Consumer Reports” information about identical computer printers that differed only in terms of pages printed per minute and a description of the manufacturing process. The descriptions were based on actual processes used in the industry. Depending on condition subjects were told either that the company added a computer chip to the slower printer to produce the faster printer (enabled condition), that the company added a chip to the faster printer to produce the slower printer (disabled or versioning condition), or that the two printers were made with different circuitry (different process condition). Respondents preferred the slower printer less, were willing to pay less for it, and rated the manufacturer as less fair in the disabled (versioning) condition. Subjects were told that the company added a chip to the slower printer to produce the faster printer (enabled condition), that the company added a chip to the faster printer to produce the slower printer that the company added a chip to the slower printer to produce the faster printer (disabled or versioning condition), or that the two printers were made with different circuitry (different process condition). Respondents preferred the slower printer less, were willing to pay less for it, and rated the manufacturer as less fair in the disabled (versioning) condition.

Study two further investigated versioning effects in a choice setting as well as explored the asymmetry found in study one. Specifically, study two examined how perceptions of fairness depend on whether consumers are considering purchasing the base product from which a new version has been created or the new version that has been created from a base product. One hundred and forty-six respondents participated in the between-subjects 3 (production method: different processes, enabling, disabling) × 2 (consumer perspective: considering the base vs. new product) design. In all conditions, respondents made a choice between two brands of printers that were both described by “Consumer Reports” as printing 15 pages per minute (X-15 and Y-15). Additional information described the “Brand X” manufacturing process as well as another “Brand X” printer that was not under consideration by the respondent. Depending upon condition, either the X-15 printer under consideration was a base for the other printer, the other printer was a base for X-15 printer, or the two were described as being independently produced. Additionally, the production method was described as either changing the circuitry to enable the printer to print faster (enabling condition), disable the printer so it prints slower (disabling or versioning condition), or using separate circuitry (different process condition). Results indicated an interaction between production method and consumer perspective. Choice share, preference, and ratings of fairness were lower for respondents considering an otherwise identical printer in the versioning condition when the printer was described as being the result of a disabled faster printer compared to being the base used to produce a disabled slower printer. No similar differences in choice share, preference, or ratings of fairness were found between printers in the enabling conditions.

Study three examined the key role of counterfactual reasoning and marginal costs in determining perceptions of fairness and subsequent purchase of versioned products. The results indicate that the violation of a basic principle—that lower quality products should cost less to produce—underlies the detrimental effects of versioning tactics. Further, when the relationship between quality and marginal cost is (counterintuitively) negative, consumers engage in increased counterfactual thinking, which mediates these effects. Additional studies are currently being conducted to further explore the underlying mechanisms and boundary conditions of the effect of versioning on perceived fairness and consumer choice.

REFERENCES


