The Effect of Time Pressure on Consumer Choice Deferral

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This article investigates the effect of time pressure on choice deferral. Recent research suggests that the likelihood of deferral is contingent on the ease of making the selection decision (which option to choose) as well as the overall attractiveness of the selected alternative. We focus on how time pressure systematically impacts choice deferral by increasing the use of noncompensatory decision rules in the selection decision and by increasing the relative emphasis placed on the unique features in the deferral decision (whether to choose). Consistent with the hypotheses, we find over a series of five studies that time pressure (1) decreases choice deferral when choice involves high conflict but not when conflict is low, (2) reduces the impact of shared features on choice deferral, and (3) decreases choice deferral for sets with common bad and unique good features (approach-approach conflict) but not for sets with common good and unique bad features (avoidance-avoidance conflict). We further show that greater attention to the unique features is not a general property of decision making under time pressure but rather a consequence of the primacy of the selection decision over the deferral decision. Consistent with this premise, time pressure did not decrease the relative attention paid to common features when the task was described as purely a deferral decision. The theoretical and practical implications of the findings are discussed.

Consumers often make choices, ranging from which brand of toothpaste to buy to which stock to buy, under time pressure (e.g., Cristol and Sealey 1996). Furthermore, the very nature of many choices such as medical decisions imply a certain degree of urgency. Although prior literature has addressed the effect of time pressure when consumers are forced to choose (e.g., see Svenson and Maule 1993), it has not examined the decision processes and choice outcomes when the no-choice or the deferral option is available. For example, a consumer who inspects different brands of television sets under time pressure might be more or less likely to defer choice and choose neither than a consumer who is making the same decision without time pressure. In this article, we examine the effect of time pressure on choice deferral by studying (1) causes for deferral under time pressure, (2) how the degree and type of choice conflict moderate this relationship, (3) how decision processes mediate this relationship, and (4) boundaries under which the predicted effects operate. This effort can help to extend our understanding of consumer decision making under time pressure as well as the decision processes that underlie choice deferral.

When the no-choice option is available, consumers have to make a "deferral decision" (i.e., whether or not to choose) in addition to a "selection decision" (i.e., which brand to choose).[1] Building on recent research on choice deferral, we propose that the deferral decision is often made after the selection decision and that the likelihood of deferral is contingent on the ease of making the selection decision (Dhar 1996). In particular, we examine the effect of time pressure on deferral for choice sets where the selection decision is either easy or difficult. When choice involves conflict, consumers are likely to use strategies that involve processing more of the relevant information (Bettman et al. 1993). The difficulty of the selection decision in such cases increases the likelihood of choice deferral. However, a greater use of noncompen-

[1] Throughout the article, we will use the term "selection decision" to refer to the decision regarding which brand to choose, "deferral decision" to refer to the decision regarding whether or not to choose, and "choice deferral" to refer to the combined outcome of both of these stages.

satory decision strategies under time pressure makes the selection decision easier by avoiding difficult trade-offs and thereby decreases the likelihood of deferral. Thus, choice deferral is predicted to be lower under time pressure when conflict is involved. Conversely, in a choice set involving little conflict, time pressure is not expected to have a significant impact on the ease of selection and consequently on choice deferral. Thus, the degree of conflict is expected to moderate the effect of time pressure on choice deferral. Furthermore, the use of a noncompensatory strategy, which affects the ease of selection, is expected to mediate the effect of time pressure on choice deferral.

We further propose that the deferral decision depends not only on the ease of the selection decision but also on the overall attractiveness of the alternatives (e.g., the degree to which an option offers relatively positive or negative features). The primacy of the selection over the deferral decision suggests that when the deferral decision is made under time pressure, greater weight will be given to the features that were considered in the selection decision. In particular, we show that choice deferral under time pressure is determined to a greater degree by the attractiveness of the unique features. We test this proposition by examining the effect of time pressure on deferral for choices involving pairs with unique positive and common negative features (approach-approach conflict) and pairs with unique negative and shared positive features (avoidance-avoidance conflict). Thus, besides the degree of conflict, the type of conflict is also expected to moderate the effect of time pressure on choice deferral by affecting the attractiveness of the options.

We show that the greater attention on the unique features is not a general property of decision making under time pressure but rather a consequence of the primacy of the selection decision over the deferral decision. Thus, common features that are relatively ignored should receive greater weight when the decision task eliminates the selection decision. We examine this by comparing the weighting of common features for a store choice task (with a menu of brands in each store), where the selection decision is eliminated, with a standard brand choice task. We find that consumers under time pressure are equally likely to consider both common and unique features during store choice, as these aspects are both relevant to the deferral decision.

In the remainder of the article, we first review prior research relevant to the effect of time pressure on choice deferral and decision processes, which leads to several hypotheses that are tested across a series of five studies. Using the Mouselab program, we also examine the decision processes predicted to mediate the effect of time pressure on choice deferral. These studies suggest that the effect of time pressure on choice deferral is consistent with our predicted changes in decision strategy and selective weighting of common and unique features. We conclude with a discussion of the theoretical and practical implications of the findings.

TIME PRESSURE AND CONSUMER CHOICE DEFERRAL

In order to examine the effect of time pressure on choice deferral, we first review prior research on time pressure in forced choice and integrate this with recent work on choice deferral. A number of studies that have examined the effect of time pressure on forced choice find three general ways in which people respond to time constraints. First, consumers tend to accelerate the rate at which they examine information when deciding under time pressure (e.g., Ben Zur and Breznitz 1981). Second, consumers tend to filter information such that they focus on the more important attributes. For instance, time pressure increases the weight placed on the more meaningful features and in particular may increase the attention devoted to negative information (Ben Zur and Breznitz 1981; Svenson and Eland 1987; Wright 1974). Third, consumers choosing under time pressure may alter their decision strategy. In particular, a number of different studies suggest that a common response to limited time is for the decision maker to shift from using compensatory to noncompensatory decision rules (e.g., Payne, Bettman, and Johnson 1988; Svenson, Edland, and Slovic 1990). Thus, consumers under time pressure are likely to simplify their selection decision by using a less effortful noncompensatory decision strategy. Although the use of such strategies may often be adaptive, consumers may use heuristics under time pressure also because they have no other choice (Simon 1981).

While research on time pressure has focused on forced choice, recent consumer research has examined the decision processes and outcomes when the no-choice option is provided (Dhar 1997; Huber and Pinnell 1994; Luce 1998; Tversky and Shafir 1992). These studies find that consumers are more likely to select the no-choice option when conflict is high (i.e., both alternatives are attractive) than when conflict is low (i.e., there is a single superior alternative). An analysis of the decision processes (Dhar 1997) suggests that subjects who expressed more thoughts or made more comparisons (and presumably found the choice more difficult) were more likely to choose the deferral option. An implicit assumption that underlies such a pattern of preferences is the notion that selecting the best option within the choice set precedes the deferral decision. Thus, the difficulty of making the selection decision when choice among the alternatives involves conflict increases the tendency to defer choice.

An interesting issue that emerges is how conflict influences the likelihood of choice deferral when consumers decide under time pressure. In some cases, time pressure may result in avoiding certain choices. For example, if consumers perceive that the time available is completely insufficient to consider the alternatives carefully, they may opt out of the decision altogether. This is more likely to be the case when the decision is unstructured and involves several stages such as searching for complete in-

formation (Greenleaf and Lehmann 1995).[2] Our focus is on cases where the alternatives are relatively well defined and the consumer is considering the final moment of choice. In such cases, the deferral decision is likely to be based on the ease of selecting an option as well as the overall attractiveness of the selected option. Our objective is to understand how constraints in information processing due to limited time influence the ease of selection among the alternatives as well as the overall attractiveness of the selected alternative and its implication for deferral. We first focus on how time pressure influences the ease of selection and show how this might be moderated by the degree of choice conflict. Next, we focus on the deferral decision and how it might be influenced by the weighting of the common and unique features of the options under consideration.

When choice involves conflict and no single alternative has a systematic advantage, Bettman et al. (1993) show that decision makers are likely to make trade-offs and process more of the relevant information. Such a decision process is likely to make the selection decision difficult and result in choice deferral. Conversely, consumers choosing among the same alternatives under time constraints are likely to use a noncompensatory rule that processes less information and avoids making difficult trade-off comparisons. This shift in decision strategy due to time pressure may make the selection decision easier and consequently decrease deferral. In this vein, Dhar (1996) showed that the decision to defer choice is sensitive to the decision strategy that is used. Specifically, when choice involved two alternatives that differed on their advantages but were relatively similar in attractiveness, consumers who used a lexicographic strategy were significantly more likely to choose than consumers who were asked to make trade-off comparisons. In summary, a noncompensatory rule simplifies the selection decision between two options where each excels on certain dimension by favoring the option that is superior on the more important attribute. Consequently, the increase in the ease of selection under time pressure should decrease the likelihood of choice deferral.

The above discussion leads to the prediction that a choice involving a high degree of conflict is less likely to be deferred under time pressure. In contrast, consider a choice between two options where one option is clearly superior to the other (i.e., it is at least as good or far better on most dimensions). Since conflict is low, the selection decision is relatively easy even without time pressure as subjects do not need to make difficult trade-off comparisons. Since there is no systematic difference in the ease of the selection decision under time pressure, no difference in choice deferral is predicted. In summary,

the degree of choice conflict is expected to moderate the effect of time pressure on choice deferral by affecting the ease of the selection decision. This leads to the first hypothesis, which predicts that selection of the no-choice option will decrease under time pressure for high conflict decisions (equally attractive alternatives) but not for low conflict decisions (one alternative is clearly superior). We tested Hypothesis 1 in study 1.

> **H1:** The degree of choice conflict moderates the effect of time pressure on choice deferral. Specifically, the percentage of consumers who select the deferral option decreases under time pressure when the options are equal in attractiveness (i.e., high conflict) but not when one of the options is clearly superior (i.e., low conflict).

STUDY 1: THE MODERATING EFFECT OF THE DEGREE OF CHOICE CONFLICT

Method

Subjects were 196 undergraduate marketing students fulfilling a course requirement. The task involved making choices between two alternatives in three different product categories. Subjects were asked to imagine that they were thinking of making a purchase in the categories presented. The instructions in this and subsequent studies emphasized that there were no right or wrong answers and that the respondents should choose the option that best reflected their preferences. Subjects were told that, as in real choice situations, they also had the option of not selecting from the options provided and to look for different alternatives elsewhere (see Fig. 1 for an example).

Two factors were manipulated in a 2 (decisions made either with or without time pressure) × 2 (choice conflict was high or low) between-subjects design. We used two alternatives since previous research has suggested that decision makers are likely to use a more compensatory decision process in such a situation (e.g., Payne 1976). Time pressure was manipulated by either giving subjects a total of 45 seconds to complete the survey (15 seconds per product category), or by allowing subjects an unlimited amount of time to make decisions.[3] Time pressure was manipulated in a group setting (there were small groups of about 20 subjects) by telling the respondents in the time-pressure conditions that they had a certain amount of time to complete each decision. We then marked on the board each five-second increment until the 15 seconds were completed, and subjects were told there was no more time, and they had to move onto the next

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[2] Our focus in this article is on relatively mild time pressure that is unlikely to involve affective changes that are intensely negative. In such cases, extreme time pressure may act as a stressor, resulting in changes in affective state that could potentially influence decision outcomes (Maule and Mackie 1990; Svenson and Edland 1987).

[3] The time available was pretested ($N = 30$ students) to insure that subjects would have just enough time to complete the survey.

FIGURE 1

STUDY 1: EXAMPLE PRODUCT CATEGORY

BINOCULARS

Imagine that you would like to buy a pair of binoculars. At the store you normally shop, you find the following two alternatives. You also have the option of not buying either of them and looking for a pair of binoculars at another store.

Brand name: JASON	Brand name: NIKON
Features: - Somewhat sturdy design - 14X magnification - Black case Price: $44	Features: - Extremely sturdy design - 7X magnification - Black case Price: $69

In this situation, I would (please circle your answer below)

(a) Not buy either of these binoculars and go to another store
(b) Buy the Jason
(c) Buy the Nikon

problem, where we repeated the procedure. Other research has also used such a method (e.g., Stiensmeier-Pelster and Schurmann 1993; Svenson and Benson 1993; Verplanken 1993). As a manipulation check, following Edland (1994), respondents were asked after completing all problems, (1) "How much time pressure did you feel when making your choices?" on a 1–9 scale with endpoints of "no pressure" and "very much pressure" and, (2) "How fast did you need to make your decisions?" also on a 1–9 scale with endpoints of "not at all fast" and "very fast." In studies 2 and 3, time pressure was manipulated in a similar manner and followed by the same manipulation checks.

The choice set consisted of options that were either relatively equal in attractiveness (i.e., high conflict) or options where one alternative was clearly superior to the other option in the set (i.e., low conflict). For instance, in the category of cordless telephones, in the high conflict condition the choice was between an AT&T brand priced at $89.99, which offered "range from set = 100 feet; 10 channels for great sound; speakerphone," and a Cobra brand priced at $49.99, which offered "range from set = 200 feet; 5 channels for good sound; speakerphone." In the low conflict condition one option was constructed to be clearly superior to the other option. For example,

in the category of cordless telephones, consumers were shown a Cobra brand and an AT&T brand (the relatively superior option) where both options offered the same features and had the same price, so that the AT&T would seem superior.[4] Respondents made choices in the following three product categories, with one category on each page of the survey: cordless telephones, cameras, and binoculars. Each alternative was described on five different attributes.

Results

Hypothesis 1 predicts that the proportion of respondents that select the deferral option will decrease under time pressure when choice conflict is high but not when choice conflict is low. A logit model was constructed to test Hypothesis 1. The dependent variable was whether

[4]A pretest (N = 44 students) was conducted in which the brands testing Hypothesis 1 were rated in terms of (1) overall product quality and (2) brand performance. On both scales, the low quality brands were rated significantly lower than the high quality brands ($p < .05$ for each scale). In the condition involving conflict, we then matched these better brands with a higher price, while in the condition involving no conflict, these brands were both given the same price.

STUDY 1: THE EFFECT OF TIME PRESSURE AND CHOICE-SET COMPOSITION ON CHOICE DEFERRAL

Product category	Choice set: Two equally attractive options		Choice set: One option clearly superior to the other	
	Unlimited time (%)	Time pressure (%)	Unlimited time (%)	Time pressure (%)
Binoculars	33	18	29	31
Cordless telephones	32	17	17	17
Cameras	43	27	20	17
Total	36	21	22	22

NOTE.—Share of respondents (N = 196) choosing neither option.

or not the no-choice option was selected and was modeled as a function of the following independent dummy variables: (1) a variable indicating whether decisions were made with or without time pressure, (2) a variable indicating whether the choice set consisted of the two alternatives that required making trade-offs or a choice set in which one option was clearly superior, (3) a two-way interaction between (1) and (2), which tests Hypothesis 1, and (4) five alternative-specific variables that capture the mean tendency to select each alternative (e.g., Guadagni and Little 1983). Our logit analysis in this and subsequent studies follows other research on choice (e.g., Dhar and Sherman 1996; Nowlis and Simonson 1996).

Consistent with Hypothesis 1, coefficient (3) above was statistically significant ($t = 1.8, p < .05$). In the choice sets that involved trade-off comparisons, preference for the no-choice option decreased from 36 percent to 21 percent when decisions were made under time pressure (see Table 1). However, in the choice sets where one option was clearly superior, preference for the no-choice option did not change (from 22 percent to 22 percent) when decisions were made under time pressure. This result was consistent across all three product categories. In addition, variables (1) and (2) in the logit model were not significant ($p > .20$). There were also no significant interactions between (3) and the product category dummies (p's $> .20$), indicating that the moderating effect of conflict on choice deferral was similar across product categories. Finally, the manipulation checks were averaged ($\alpha = 0.91$) together and showed subjects felt more time pressure when they had less time to make their decisions (6.5 vs. $4.9, p < .01$). In studies 2 and 3, the same manipulation checks showed that respondents felt more time pressure in the condition in which there was less time to make choices ($p < .01$ for each study).

Discussion

The results show that the degree of choice conflict moderated the effect of time pressure on choice deferral.

In particular, respondents under time pressure were more likely to choose when the choice set consisted of two equally attractive options (high conflict) but no more likely to choose when the choice set consisted of two options where one alternative was clearly superior (low conflict). These results appear consistent with previous findings that time pressure has a systematic effect on the preferred strategy (e.g., Edland and Svenson 1993), which impacts choice deferral by making the selection decision easier (Dhar 1996). To the extent that time pressure increased the use of decision strategies that avoided making trade-off comparisons and made the selection decision easier under high conflict, consumers were less likely to defer choice.

Study 1 focused on the effect of time pressure on the ease of selection for choice under conflict. In addition to the ease of selection, the deferral decision is likely to take into account the overall attractiveness of the selected option. For instance, even if the choice between two items is easy, a consumer is likely to select the deferral option if this item is viewed as not being sufficiently attractive. Although the attractiveness of an item depends on all its features, time pressure is expected to alter the weighting of its unique features and those that are shared with other alternatives in the choice set, thereby impacting the deferral decision.

In line with previous research that suggests selectivity in information processing under time pressure (e.g., Svenson and Maule 1993), consumers should be less likely to process attribute information that is common to both alternatives, as it may be seen as less beneficial compared to information on the unique features of each alternative.[5] In contrast, when there is no time pressure, choice conflict may direct attention to the shared features in the selection decision in an attempt to consider all relevant information when resolving the conflict (Bettman et al. 1993). Although features that are common to alternatives in the choice set do not help in making the selection decision, the attractiveness of these features should be considered in addition to the attractiveness of the unique features in making the deferral decision. However, the primacy of the selection decision over the deferral decision suggests that time pressure may result in focusing on the same features that were considered in making the selection decision (i.e., the unique features). This suggests that the deferral decision process under time pressure may not sufficiently consider the attractiveness of features that are shared by the alternatives.

We examine how the underweighting of the common features in the deferral decision process will affect choice deferral under time pressure. We do so by manipulating the attractiveness of the shared features. Under no time pressure, the shared features may not affect the selection

decision but are likely to be considered during the deferral decision. Hence, choice deferral should be lower when the shared features are more attractive (e.g., two VCRs both offer stereo sound) than when both options offer less attractive common features (e.g., both VCRs only offer mono sound). In contrast, respondents under time pressure may continue to focus on the same features in making a deferral decision as those that were considered in the selection decision. Thus, the deferral decision is less likely to take into account any improvements in the attractiveness of the common features when choices are made under time pressure. This discussion suggests the following hypothesis, which was tested in study 2.

> **H2:** Consumers will pay less attention to the common features in choice under time pressure. Consequently, the decrease in choice deferral due to an improvement in the attractiveness of the shared features will be smaller when choices are made under time pressure.

STUDY 2: INFLUENCE OF THE ATTRACTIVENESS OF COMMON FEATURES

Method

Subjects were 240 undergraduate marketing students fulfilling a course requirement. As in study 1, respondents made choices between two alternatives in several different product categories and were given the option of not choosing either alternative. Two factors were manipulated in a 2 (decisions made either with or without time pressure) × 2 (alternatives offered either relatively inferior or relatively superior common features) between-subjects design. For example, in the category of microwave ovens, the common features were either "average power to cook items in average amount of time" and "average size which cannot fit in certain foods" (relatively inferior common features) or "superior power to cook items very quickly" and "large size which can fit in most any size food" (relatively superior common features). In addition, each microwave oven offered two unique features. Subjects made choices in the product categories of microwave ovens, apartments, and automobiles.

Results

Hypothesis 2 predicted that choice deferral under time pressure would be less sensitive to the improvement in the attractiveness of the shared features of the alternatives provided. A logit model similar to that used in study 1 was constructed to test Hypothesis 2. The dependent variable was whether or not the no-choice option was selected and was modeled as a function of the following independent dummy variables: (1) a variable indicating whether decisions were made with or without time pressure, (2) a variable indicating whether the common features were

TABLE 2

STUDY 2: THE EFFECT OF TIME PRESSURE ON THE SENSITIVITY TO COMMON FEATURES

	Unlimited time		Time pressure	
Product category	Moderately attractive common features (%)	Very attractive common features (%)	Moderately attractive common features (%)	Very attractive common features (%)
Microwave ovens	50	27	28	19
Apartments	72	21	55	16
Automobiles	82	29	60	19
Total	68	26	47	18

NOTE.—Share of respondents ($N = 240$) choosing the no-choice option.

relatively inferior or superior, (3) a two-way interaction between variables (1) and (2), which tests Hypothesis 2, and (4) five alternative-specific variables. Consistent with Hypothesis 2, coefficient (3) above was statistically significant ($t = 1.7, p < .05$). When there was no time pressure, the share of the no-choice option was 26 percent when the options offered relatively superior common features and 68 percent (a change of 42 percent) when the options offered relatively inferior common features (see Table 2). In contrast, the preference for the no-choice option increased from 18 percent to 47 percent (a change of 29 percent) under time pressure. Thus, the share of the no-choice option was significantly less sensitive to the deterioration in the common features (by 13 percent = 42 percent − 29 percent) under time pressure, as tested by the logit model. Consistent with the first study, coefficient (1) in the model was significant ($t = 2.8, p < .01$), as the overall choice incidence was greater when decisions were made under time pressure by an average of 15 percent (these choice sets correspond to the high conflict situations). In addition, coefficient (2) in the model was significant ($t = 6.8, p < .01$), which shows that subjects were more likely to choose when the common features were very attractive, as would be expected. Finally, there were no significant interactions between (3) and the product category dummies (p's $> .20$), indicating that the effect of common features on choice deferral was similar across product categories.

Discussion

The results from study 2 support the notion that choice deferral under time pressure is less sensitive to the attractiveness of the shared features. In particular, under time pressure, the deferral decision was more likely to follow the selection decision in its focus on the unique features of the alternatives. Without time pressure, however, the deferral decision was more likely to consider the attractiveness of the shared features.

While the first two studies focused generally on con-

flict, one can distinguish between conflict that arises between attractive alternatives (approach-approach) from that based on choice between unattractive options (avoidance-avoidance; e.g., Miller 1944; Schneider 1992). Thus, besides looking at the degree of conflict as in study 1, we can also examine how the type of conflict might moderate choice deferral under time pressure. While prior research has shown that deferral is greater for avoidance-avoidance choices (Murray 1975), recent studies have induced the two types of conflict by altering the relationship among the alternatives that are compared. Specifically, since selection decisions are likely to eliminate shared features, the two types of conflict can be produced by providing alternatives that share their attractive or their unattractive features. Following prior research (e.g., Dhar and Sherman 1996; Houston and Sherman 1995), we consider cases where the options (1) share bad features and offer unique good features and (2) share good features and offer unique bad features. Thus, the choice may be experienced as approach-approach or avoidance-avoidance conflict depending on whether the good or the bad features of the two alternatives are seen as unique.

Our assumption of a greater focus on unique features under time pressure suggests that choice deferral will vary systematically depending on the type of choice set outlined above. When options offer common bad and unique good features, we expect the common (bad) features to receive less weight under time pressure in the deferral decision, as per Hypothesis 2. Since both alternatives offer unique good features, this would result in them being viewed as more attractive in relation to the no time-pressure condition where attention is also paid to the shared (bad) features. Further, the greater use of a noncompensatory decision rule under time pressure also increases the ease of the selection decision. Thus, for sets with common bad and unique good features (hereafter referred to as unique good pairs), the ease of the selection decision as well as the reduced attention on the shared bad features under time pressure should decrease choice deferral.

When the options in the set offer common good and unique bad features, the deferral decision process will underweight the common (good) features under time pressure, as per Hypothesis 2. In this case, however, an increased emphasis on the unique features, which are bad, will make both alternatives seem less attractive and should increase choice deferral. Thus, the deferral decision process suggests that, in this case, time pressure will increase choice deferral. On the other hand, the selection decision process might lead to the opposite effect, as respondents under time pressure are more likely to use a noncompensatory decision rule, which increases the ease of the selection decision. These opposing forces in the selection and deferral stages make it less clear how choice deferral will be affected by time pressure when the options offer common good and unique bad features (unique bad pairs). This leads to Hypothesis 3, which predicts that the type of conflict will moderate the effect of time pressure on choice deferral. Specifically, in line with the

preceding arguments, time pressure should have a greater effect on choice deferral when the choice set consists of unique good pairs than when the choice set consists of unique bad pairs. We tested Hypothesis 3 in study 3.

> **H3:** The type of choice conflict moderates the effect of time pressure on choice deferral. Specifically, the percentage of respondents selecting the deferral option decreases under time pressure when consumers are choosing from unique good pairs (approach-approach conflict) but not when consumers are choosing from unique bad pairs (avoidance-avoidance conflict).

STUDY 3: THE MODERATING EFFECT OF THE TYPE OF CHOICE CONFLICT

Method

Subjects were 262 undergraduate marketing students fulfilling a course requirement. Respondents made choices between two alternatives in three different product categories and had the option of not choosing either alternative, as in prior studies (see Fig. 2). Two factors were manipulated in a 2 (decisions made either with or without time pressure) $\times$ 2 (alternatives had either common bad features and unique good features, or alternatives had common good features and unique bad features) between-subjects design. As an example of a choice set with common good features and unique bad features, subjects chose between "Apartment A" and "Apartment B," which both offered "good new furniture and has dishwasher and refrigerator," and "Apartment A" had "a high security deposit and no parking," while "Apartment B" had "high rent and up four flights of stairs." Thus, each alternative offered four features (two unique and two common). In the condition with unique good pairs, subjects chose between two apartments where both had "high security deposit and no parking," while one apartment offered "new wall-to-wall carpeting and color TV with cable" and the other apartment offered "good new furniture and has dishwasher and refrigerator." Three product categories were tested, including apartments, automobiles, and vacations, and the features for these categories were adapted from Dhar and Sherman (1996).

Results

We predicted that the type of choice conflict would moderate the effect of time pressure on choice deferral. Time pressure is expected to decrease deferral when respondents are choosing between unique good pairs but produce no systematic effect when they are choosing between unique bad pairs. A logit model like the ones used in the first two studies was constructed to test Hypothesis 3. The dependent variable was whether or not the no-choice option was selected and was modeled as a function

FIGURE 2

STUDY 3: EXAMPLE PRODUCT CATEGORY

APARTMENTS

Imagine that you are looking for an apartment and have arrived at the following two choices. You also have the option of skipping these options and looking for others.

APARTMENT A	**APARTMENT B**
Features: - Good new furniture - Has dishwasher and refrigerator - High security deposit - No parking	Features: - New wall-to-wall carpeting - Color TV and cable - High security deposit - No parking

In this situation, I would (please circle your answer below)

(a) Not choose either of these apartments and look for other apartments

(b) Choose apartment A

(c) Choose apartment B

of the following independent dummy variables: (1) a variable indicating whether decisions were made with or without time pressure, (2) a variable indicating whether the choice set consisted of unique good or unique bad pairs, (3) a two-way interaction between (1) and (2), which tests Hypothesis 3, and (4) five alternative-specific variables. Consistent with Hypothesis 3, coefficient (3) above was statistically significant ($t = 2.8, p < .01$). For choice between unique good pairs, the share of the no-choice option was 56 percent, and decreased to 29 percent under time pressure (see Table 3). However, in the choice sets with unique bad pairs, the share of the no-choice option did not significantly change (56 percent vs. 53 percent) when decisions were made under time pressure. In all three categories, the share of the no-choice option decreased significantly under time pressure when the options in the set offered common bad and unique good features. In addition, coefficient (1) in the model was significant ($t = 3.8, p < .01$) and coefficient (2) was also significant ($t = 3.1, p < .01$). Finally, there were no significant interactions between (3), the coefficient of interest, and the product category dummies (p's $> .20$), indicating that the moderating effect of the type of conflict on choice deferral under time pressure was similar across product categories.

TABLE 3

STUDY 3: THE EFFECT OF TIME PRESSURE AND CHOICE-SET COMPOSITION ON CHOICE INCIDENCE

Product category	Choice set: Common bad features and unique good features		Choice set: Common good features and unique bad features	
	Unlimited time (%)	Time pressure (%)	Unlimited time (%)	Time pressure (%)
Apartments	50	22	49	58
Automobiles	66	41	69	60
Vacations	53	24	51	40
Total	56	29	56	53

NOTE.—Share of respondents ($N = 262$) choosing the no-choice option.

Discussion

The three studies so far have focused on how time pressure affects the selection and deferral decision processes, and thereby choice deferral. Study 1 shows that the effect of time pressure on choice deferral depends on the degree of conflict; when choice conflict is high, time pressure

can simplify the selection decision and decrease deferral. Studies 2 and 3 show that the type of conflict is also important in determining the effect of time pressure on choice deferral. Study 2 finds that common features are less likely to be considered in the deferral decision process under time pressure. This makes choice deferral under time pressure less sensitive to an improvement in the attractiveness of the shared features. Study 3 finds that unique features are more likely to drive the deferral decision under time pressure. When choice resembles approach-approach conflict, time pressure decreases choice deferral by increasing the attention paid to the unique good features and by making the selection decision easier through the use of a noncompensatory strategy. In contrast, when choice resembles avoidance-avoidance conflict, time pressure makes the alternatives appear less attractive in the deferral decision through the greater focus on the unique bad features, but also makes the selection decision easier with no significant effect on choice deferral.

We focused on two aspects of the decision process in making our predictions: (1) time pressure increases the use of noncompensatory decision rules in making the selection decision, and (2) time pressure decreases the focus on shared features in making the deferral decision. Although the results presented are consistent with our premise, the first three studies had some limitations. First, although utmost care was taken to ensure that subjects followed the instructions about the amount of time to be spent on each problem, the paper and pencil methodology makes it difficult to be certain that subjects followed the instructions exactly as described. Second, although the results are consistent with the proposed shift in information processing under time pressure, we did not observe the processing strategies that were used by the subjects. An alternative explanation for the results could be that subjects under time pressure who faced a difficult choice did not have the time to consider the deferral option, as it comes after the selection decision.[6] One advantage of observing the choice processes is that these can then be used to perform a mediational test for the proposed differences in the underlying mechanisms. The next two studies use the Mouselab program (Johnson et al. 1993) in order to measure the decision processes that underlie our hypotheses: the ease of the selection decision due to a greater use of noncompensatory decision rules and the selective weighting of unique features under time pressure. Furthermore, we test whether the use of a noncompensatory decision strategy is indeed what is mediating the effect of time pressure on choice deferral.

> **H4:** The degree of noncompensatory decision processing mediates the effect of time pressure on choice deferral.

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[6]Note that this explanation applies more to the results of study 1 but cannot explain the difference in deferral under time pressure observed in study 3.

STUDY 4: THE MEDIATING EFFECT OF THE DECISION PROCESS

Method

Subjects were 143 undergraduate marketing students fulfilling a course requirement. The task and instructions were similar to the previous studies. One group of subjects made choices without any time limits, and the other group was given 15 seconds for each choice problem in three different product categories: televisions, microwave ovens, and cameras. As in study 1, the options were relatively equal in attractiveness (i.e., high conflict), with each described on several features (see Fig. 3 for an example). For instance, in the category of televisions, the two options varied on the following five features: picture quality (on a scale of 0 to 100), number of speakers, size of screen, other, and price. Television A offered a picture quality of 85, six speakers, an 18-inch screen, a sleep timer, and was priced at $179. Television B offered a picture quality of 95, two speakers, a 24-inch screen, sleep timer, and was priced at $249.

The experiment was conducted using Mouselab, a computer-based process tracing technique. Information was displayed in closed boxes presented in an option X attribute matrix, where subjects could reveal the information in each box by moving a mouse-controlled cursor to the relevant box. Mouselab recorded which boxes were opened, in what sequence, and how much time was spent in each box. Subjects began the experiment with instructions on how to access information in the boxes by using the mouse. They then completed a practice problem before making decisions in each of the three categories. For those in the time-pressure condition, a small circle appeared on the screen, which ticked down as the time available was reduced. If subjects did not make a choice before the time was used, the program beeped, instructed them to "please make a choice or indicate a value," and would not allow them to open any more boxes. Similar to the previous studies, subjects were provided with the no-choice option. Finally, after all choices were made, subjects were asked, as a manipulation check, "How much time pressure did you feel when making decisions?" and responded on a scale of 0 (no time pressure) to 10 (great time pressure).

As with other time-pressure research that has used Mouselab (e.g., Payne et al. 1988), we calculated different measures that can provide evidence of the degree to which subjects use noncompensatory or compensatory processing strategies. First, we calculated the number of acquisitions of each piece of information, referred to as ACQ. Second, we measured the average time spent acquiring each piece of information, known as TPER-ACQ. Third, we calculated the variance in the proportion of time spent on each attribute, referred to as VAR. Finally, we calculated the relative degree to which subjects made attribute or alternative-based transitions. For example, if a subject first checked the price of one tele-

FIGURE 3

STUDY 4: EXAMPLE PRODUCT CATEGORY

Welcome! On the next screens you will be asked to make several decisions and to answer more questions during this experiment. There are no right or wrong answers. You will only need the mouse in front of you to complete the experiment. In order to go on, please move the cursor into the box at the bottom of the screen and click a mouse button.

(*Next page*). During this experiment, you will make decisions based on information you collect from the computer screen (*subjects are then given additional information on using the Mouselab program and complete a practice problem. Also, subjects making choices under time pressure are given instructions for doing this, and the screen where the choices are made also shows a small clock in the upper left hand corner which ticks down as time advances*).

(*Next page*). Next, imagine that you are shopping for a television set. One of the features, which we describe as Quality/Reliability ratings, is taken from *Consumer Reports* where "0" means very bad quality/reliability, and "100" means perfect quality/reliability. You may now proceed to the next question. At the bottom of the next screen, you will be asked to indicate whether or not you would buy one of these televisions. You can choose to buy neither of them (and go to another store), choose the first television, or choose the second television.

	Television A	Television B
Picture quality	85	95
# of speakers	6	2
Size of screen	18 inches	24 inches
Other	Sleep timer	Sleep timer
Price	$179	$249

Which television would you choose?

Choose one:	Neither television	Television A	Television B

vision set and then the price of the other television set, this would be coded as an attribute-based transition, but if they first checked the price of one television and then the picture quality of that same television, this would be coded as an alternative-based transition. The measure we used is the number of alternative-based transitions minus the number of attribute-based transitions divided by the total number of alternative-based and attribute-based transitions combined, known as PATTERN (see, e.g., Payne 1976; Payne et al. 1988; Sen 1998; Sen and Johnson 1997). PATTERN can range from +1.0 to −1.0 with more negative values representing more attribute-based processing. Prior research has found that under time pressure there are (1) fewer ACQ, (2) reduced TPERACQ, (3) greater VAR, and (4) a more negative PATTERN (e.g., Payne et al. 1988). We expect to replicate these results, so as to show that processing indeed was following more of a noncompensatory process under time pressure.

However, of more importance to this research is to show through a mediation analysis that the use of a noncompensatory process under time pressure is indeed what may be driving the difference in the share of the deferral option. In particular, to show mediation, we must demonstrate three relationships (Baron and Kenny 1986). First, we must show that the independent variable, time pressure, significantly affects the mediator, the measure of noncompensatory processing. Second, we must show that the processing measure significantly affects the dependent variable, choice deferral. Third,

TABLE 4

STUDY 4: DECISION PROCESSES INVOLVED IN CHOICE
DEFERRAL UNDER TIME PRESSURE

Dependent measure[a]	No time pressure	Time pressure
ACQ	15.9	11.6
TPERACQ	.741	.601
VARIANCE	.024	.033
PATTERN	−.276	−.284
DEFERRAL (%)	20.6	9.3

[a]ACQ = Number of information boxes opened, TPERACQ = time per information acquisition, VARIANCE = variance in the proportion of time spent on each attribute, PATTERN = index reflecting degree of attribute-based (−) and alternative-based (+) processing, DEFERRAL = proportion of subjects choosing neither alternative.

we must show that the effect of time pressure on choice deferral is reduced or eliminated if the processing measure is also included.

Results

Choice Effects. As was shown in study 1, we found that consumers under time pressure were less likely to defer choice for options that are relatively equal in attractiveness. Averaged across the three categories, 21 percent of subjects chose the deferral option without time pressure and 9 percent selected it under time pressure (Table 4). A logit model like the one used in study 1 showed this effect to be significant ($t = 2.9, p < .01$). The direction of these results was consistent across all three categories. In addition, the results from the manipulation check showed that those with limited time felt significantly more time pressure than those with unlimited time ($\bar{X} = 6.2$ vs. $\bar{X} = 2.9$, $F(1, 142) = 55.7, p < .001$). In study 5, subjects also felt significantly more time pressure when decision time was limited ($p < .001$).

Processing Effects. We next examined the process measures. As expected, subjects acquired fewer pieces of information (ACQ) when making decisions under time pressure ($\bar{X} = 15.9$, $\bar{X} = 11.6$, $F(1, 427) = 51.0$, $p < .001$). In addition, they spent less time per each acquisition (TPERACQ) when making decisions under time pressure ($\bar{X} = 0.74$, $\bar{X} = 0.60$, $F(1, 427) = 109.9$, $p < .001$). In terms of the variance spent examining each attribute (VAR), there was greater variance under time pressure ($\bar{X} = 0.033$, $\bar{X} = 0.024$, $F(1, 427) = 12.9$, $p < .01$). These results are consistent with Payne et al. (1988). Finally, there was no significant difference in the relative degree of attribute-based processing (PATTERN) across the time-pressure conditions ($\bar{X} = -0.276$ without time pressure vs. $\bar{X} = -0.284$ with time pressure, $p > .50$). This may in part be due to the fact that PATTERN assumes that attribute based transitions reveal a more noncompensatory decision process. However, when there are only two alternatives, a compensatory strategy

that is often used is the additive-difference rule even though it involves more attribute-based transitions (Dhar 1996; Luce, Bettman, and Payne 1997).

Mediation Analyses. Hypothesis 4 predicts that choice processing under time pressure is likely to be noncompensatory, which in turn will mediate the change in choice deferral. We completed the mediation analysis, using VAR, which has previously been shown to vary with the mode of processing (e.g., Payne et al. 1988). As mentioned above, we found that VAR was significantly affected by time pressure, satisfying the first criterion for mediation. Next, we found that VAR has a significant relationship on choice deferral ($t = 2.2, p < .05$), which satisfies the second criterion for mediation. Finally, the third criterion of mediation also receives support, as the effect of time pressure on choice deferral is much weaker when VAR is included as a variable ($t = 1.5, p < .10$, vs. $t = 2.9, p < .01$, as mentioned above). Thus, in support of Hypothesis 4, the mediation analysis shows that VAR at least partially mediates the effect of time pressure on choice deferral.

As stated previously, although the deferral decision should consider both shared and unique features, the primacy of the selection decision increases the likelihood of focusing on the same features that were considered in the selection decision (i.e., the unique features) when choices are made under time pressure (e.g., Dhar 1997; Tversky and Shafir 1992). If such a decision process is indeed driving the results, it suggests that the relative attention paid to the common features even under time pressure can be increased by modifying the nature of the task. Specifically, if the task is represented as a store choice (i.e., whether to buy from a store), the selection decision is eliminated, and subjects should be equally likely to attend to unique and common features even under time pressure. Thus, the usual primacy of the selection decision over the deferral decision may be reversed, depending on the decision task. We test this hypothesis for the case where alternatives offer unique good and common bad features (unique good pairs). In study 3, which looked at brand choice, we found that the share of the deferral option was lower under time pressure for unique good pairs. Since time pressure is not expected to increase the attention paid to the unique (good) features for a store-choice task, it should have no systematic effect on deferral. We examine these predictions in the next study using Mouselab.

H5a: The ratio of unique to common features examined is greater under time pressure for the brand choice task.

H5b: The degree to which unique and common features are examined under time pressure is moderated by the decision task. Specifically, the relative attention paid to unique features compared to common features increases under time pressure for brand choice but not for store choice.

H6: For unique good pairs, choice deferral decreases under time pressure for brand choice but not for store choice.

STUDY 5: REVERSING THE PRECEDENCE OF THE SELECTION DECISION OVER THE DEFERRAL DECISION

Method

Subjects were 166 undergraduate marketing students fulfilling a course requirement. Two factors were manipulated in a 2 (time pressure or none) × 2 (brand choice or store choice) between-subjects design. As in study 4, this study was conducted using Mouselab. In this study, subjects in the time-pressure condition were given 18 seconds for each choice problem in three different product categories: portable computers, restaurants, and automobiles. All items offered three unique good features and three common bad features. For example, in the restaurants category, subjects chose between Restaurant A, which offered "good desserts and drinks, wide selection, and easy to get to," and Restaurant B, which offered "good appetizers, good entrees, and plenty of parking." Both restaurants had a "long wait, dull atmosphere, and unfriendly waiters." As in prior studies, half the subjects had to decide whether they would eat at Restaurant A, Restaurant B, or neither/go to another restaurant (hereafter referred to as "brand choice"). The other half of the subjects were told that both restaurants were in a particular mall, and they had to decide whether they would choose this mall or go to another mall (hereafter referred to as "store choice"). Finally, we checked the success of the time-pressure manipulation by asking the same question from study 4.

Results

We tested Hypothesis 5 by investigating the ratio of unique to common features that were examined. To do this, we constructed a value for each respondent, which was the number of unique features examined minus the number of common features examined divided by the total number of unique and common features examined (which is similar in style to PATTERN used in study 4). The value of this number can range from +1.0 to −1.0, with positive numbers indicating a greater focus on unique features and negative numbers indicating a greater focus on common features. An ANOVA model was then constructed with this ratio as the dependent measure and with the time pressure manipulation and the store/brand choice manipulation as the two independent variables. The interaction of these two variables tests Hypothesis 5b, while the simple effect of the time pressure manipulation within the brand choice decision tests Hypothesis 5a. Consistent with Hypothesis 5a, consumers focused more

TABLE 5

STUDY 5: THE EFFECT OF TIME PRESSURE ON CHOICE DEFERRAL FOR BRAND CHOICE AND STORE CHOICE

Product category	Brand choice		Store choice	
	Unlimited time (%)	Time pressure (%)	Unlimited time (%)	Time pressure (%)
Portable computers	27	18	44	68
Restaurants	50	41	79	79
Automobiles	45	26	86	70
Total	41	28	70	72

NOTE.—Share of respondents (N = 166) choosing the no-choice option.

on unique features than common features when deciding under time pressure for brand choice ($\bar{X} = 0.334$ vs. 0.179, $F(1, 247) = 19.1$, $p < .001$). This result is consistent with our assumption in studies 2 and 3. In addition, and consistent with Hypothesis 5b, the interaction was significant ($F(1, 496) = 7.5$, $p < .01$). Compared to brand choice, there was no difference across time pressure on the ratio of unique to common features examined in store choice ($\bar{X} = 0.149$ vs. $\bar{X} = 0.154$).

Next, we examine the results pertaining to Hypothesis 6, which predicts that choice deferral will decrease under time pressure for brand choice but not for store choice. We constructed a logit model to test Hypothesis 6, which was similar to those used in the first three studies. This model included the main effect of time pressure, the main effect of brand/store choice, product category dummies, and the interactions. Hypothesis 6 is tested by the interaction between time pressure and whether subjects made brand or store choices. As predicted, we found that choice deferral decreased under time pressure for brand choice (by 13 percent) but was relatively unchanged for store choice (an increase of 2 percent). The interaction from the logit model testing this effect was significant ($t = 2.0$, $p < .05$) and was consistent across all three product categories (Table 5). Since subjects were more likely to consider common (bad) features in store choice decisions, there was also a significant main effect for brand/store choice ($t = 5.7$, $p < .01$), indicating that subjects were overall more likely to defer in store choice.

Discussion

This study found that the ratio of unique to common features examined is greater under time pressure for brand choice (Hypothesis 5a), which is consistent with our explanation for the results obtained in study 3. We also found that this ratio is greater for brand choice than store choice under time pressure (Hypothesis 5b). Accordingly, choice deferral was lower under time pressure for the brand-choice task but not for the store-choice task, supporting Hypothesis 6. This study lends important in-

sights into previous work on deferral, suggesting that an increase in choice deferral due to choice conflict arises because of the primacy of the selection decision over the deferral decision. Conversely, when subjects view the task as whether or not to choose from a choice set, they are more likely to consider all relevant features even under time pressure.

In addition to examining decision processes using Mouselab, we conducted a separate study that examined the memory for attributes under time pressure (e.g., Nowlis 1995). Research on consumer memory suggests that if an attribute can be recalled, then it is likely that it served as an input for choice (Lynch, Marmorstein, and Weigold 1988). If common features receive relatively less weight than unique features when decisions are made under time pressure, we would expect better recall for unique features compared to common features when time is limited. We conducted a study that measured the recall of common and unique features for the options with unique good, common bad features and unique bad, common good features. Subjects were 231 undergraduate marketing students fulfilling a course requirement. Two factors were manipulated in a 2 (decision made either with or without time pressure) × 2 (alternatives had either three common bad features and three unique good features, or alternatives had three common good features and three unique bad features) between-subjects design. After subjects had made their choices and without prior warning, they were asked to recall as many features as they could from the last category they had seen, vacations. We found that when decisions were made under time pressure an average of 1.3 unique features each and 0.6 common features were correctly recalled, for a ratio of 2.17. Without time pressure, on the other hand, an average of 1.4 unique features each and 1.1 common features were correctly recalled, for a ratio of 1.27. The difference between these ratios is significant ($t = 2.4$, $p < .01$), further supporting the Mouselab findings in study 5.

DISCUSSION

Consumers often face situations that require making decisions quickly. We examined the effect of time pressure on choice deferral to gain a better understanding of decision making under time constraints and the processes that underlie choice deferral. We proposed that time pressure influences choice deferral by altering the ease of deciding which option to choose (the selection decision) as well as by increasing the weight of unique features in determining whether or not to choose (the deferral decision). Conceptually, the choice of the deferral option can decrease under time pressure either if the selection decision is made easier or if the information that is attended to in the deferral decision process makes the options seem more attractive. Our studies examined the effect of time pressure on choice deferral by (1) testing predictions regarding choice deferral for different degrees and types of choice conflict and thus considered conflict

to be a moderating influence, (2) using process tracing methodologies to gain support for the proposed mechanisms and showing that the use of a noncompensatory rule can mediate the relationship, and (3) testing the boundaries under which the predicted effects operate. These studies are summarized next.

We first examined the effect of the degree of choice conflict when decisions were made under time pressure. When choice conflict was high and there was no time pressure, consumers were likely to make trade-off comparisons, which made the selection decision difficult and resulted in choice deferral. However, since time pressure increased the use of noncompensatory decision rules that made the selection decision easier, we anticipated and found that choice deferral decreased for decisions involving high conflict. In contrast, when choice conflict was low by virtue of a choice set with a clearly superior alternative, time pressure had no effect on the ease of selection, and there was no difference in choice deferral in relation to the no time-pressure condition. Thus, this study provided some initial support for the idea that the degree of choice conflict moderates the effect of time pressure on choice deferral.

The next two studies examined how the attractiveness of the alternatives is altered by the deferral decision process under time pressure, which then affects choice deferral. In one study, we showed that the increased focus on the unique relative to the common features under time pressure made choice deferral less sensitive to the attractiveness of the common features. In another study, we examined how time pressure systematically influenced choice deferral in sets that offered common and unique features that were either good or bad. When the options in the choice set offered common bad and unique good features, consumers choosing under time pressure were expected to find the alternatives more attractive by placing less weight on the common features and to find the selection decision easier by using a noncompensatory rule. However, when the options in the choice set offered common good features and unique bad features, time pressure was expected to decrease the attractiveness of the options by increasing attention on the unique bad features but also to make it easier to choose by using a noncompensatory decision rule. Overall, we expected and found that time pressure reduced choice deferral when the options offered unique good and common bad features but not when they offered unique bad and common good features. Thus, there was support for the proposition that the type of conflict moderates the relationship between time pressure and choice deferral.

We next used Mouselab to examine the two proposed underlying mechanisms. In one study we replicated prior research showing an increased use of noncompensatory strategies under time pressure and found that an increased use of noncompensatory strategies at least partially seems to mediate the effect of time pressure on choice deferral. Thus, we found support for our premise that changes in selection-decision strategies are responsible for the de-

crease in choice deferral under time pressure for decisions involving conflict. In a second study using Mouselab, we contrasted what we had found for brand-choice decisions (selection and deferral decisions) with what might be expected for store-choice decisions (pure deferral decisions). We predicted and found that in brand-choice decisions, consumers under time pressure focused more on unique features than common features, whereas for store-choice decisions, there was no significant change in the weight placed on the common features. This suggests that the greater attention on the unique features is not a general property of decision making under time pressure but rather a consequence of respondents making the selection decision before the deferral decision when the deferral option is provided.

Theoretical Implications

Recent consumer research has examined how conflict influences decision processes and outcomes when the no-choice option is provided. In addition, previous work has shown how decision processes in forced choice are affected by time constraints. The aim of this article was to show how systematic changes in the selection and deferral decision processes due to time pressure would combine to influence choice deferral. To the extent that selection decisions precede deferral decisions and both are influenced systematically by the amount of time available, it extends our understanding of factors and mechanisms that lead to choice deferral in particular and consumer decision making in general.

Past research on time pressure has focused on single-stage decisions. A general implication of our findings is that time pressure will systematically distort choices when decision making requires multiple stages. In particular, research has shown that modifying decision sequences can have a systematic impact on the option that is chosen (e.g., Hauser 1986; Simonson, Nowlis, and Lemon 1993). To the extent that time pressure is going to have more severe effects on later stages of decision making, one can make predictions about the precise pattern of choices that will be observed in multistage decision making. Moreover, modifying the sequence of the selection and deferral decisions may result in different degrees of choice deferral for the same choice set. For instance, if unique features are more salient when the deferral decision is made after the selection decision, it suggests that altering the sequence of the two stages (asking consumers to first decide whether to choose and then which to choose) may alter the focus on unique and shared features and, consequently, the likelihood of deferral (Dhar and Nowlis 1999).

Our approach primarily assumed that time constraints are similar to other task-related factors that influence the relative costs and benefits involved in information processing (Payne, Bettman, and Johnson 1993). Although past research suggests that strategies shift in adapting to the task by making efficient effort-accuracy trade-offs,

these studies have not considered the option of choice deferral. An interesting question is whether the type of decision processes observed in the current studies are consistent with the notion of an adaptive decision maker. In this case, the normative benchmark against which judgments of accuracy are compared would have to take into account the reservation utility of the individual. Generally speaking, the neglect of shared features is problematic for an adaptive framework since whether or not a feature is considered in a deferral decision should depend on its importance weight and not whether it is shared or unique in the choice set provided.

Our research was confined to simple binary choice sets. Another line of future research might look at the effect of the number of brands in the choice set when choices are made under time pressure. For instance, a number of studies have shown that consumers prefer the middle option in a three-option choice set when conflict is high (Simonson and Tversky 1992). In such a case, we would expect that the share of the compromise option would decrease under time pressure as subjects would use noncompensatory rules that favored extreme options. Indeed, the authors have conducted such a study and found the predicted effects (Dhar, Nowlis, and Sherman 1998).

Marketing Implications

The effect of context on choice deferral suggests that managers should consider not only the attribute values of their brands but also the relationship among the available alternatives. For instance, choice deferral may be greater when no single alternative is easily seen as the best, even though each option by itself is quite attractive. Additionally, we know that a number of decisions are made by consumers under time pressure and that consumers often spend a limited amount of time making decisions in many product categories. To the extent that the effect of context on deferral varies with time constraints, it is important to determine how time pressed is the consumer while shopping in a given category. In this vein, the effect of increased brand proliferation on deferral is likely to be diminished in categories where subjects choose using simple noncompensatory rules.

Many real world situations involve choice among several attractive alternatives that require difficult trade-offs. To the extent that decision difficulty increases deferral, marketers should try to persuade consumers to use strategies that decrease selection difficulty and thus choice deferral. The current research shows that one way to induce choice would be for the seller to generate time constraints where none exist. As an example, consider someone looking for a new apartment who is deciding among several attractive options. In this case, the realtor could casually mention that there is a second prospective consumer and that these apartments are available if the lease is signed immediately. This technique may be successful even when there is very little uncertainty of losing one of the alternatives. For instance, electronic stores often give a

nominal discount if the consumer makes an immediate purchase decision. Although the discount may itself provide an incentive to purchase, adding the time constraint may also restructure the decision in a manner that makes the choice easier. In addition, there is an increasing number of Internet sites that auction products. Many of these sites give a limited amount of time in which to bid for the products, and since difficult trade-offs are likely to be involved, this might encourage consumers to be more likely to make a choice.

Recent research has shown that the characteristics of the products to which new features are added are important determinants of the impact of these features (e.g., Nowlis and Simonson 1996). Our findings suggest that, more generally, the impact of unique features is even greater when decisions are made under time pressure. This would suggest that relatively unimportant features that are seen as unique may be particularly useful in differentiating options and determining choice when consumers have a limited amount of time to decide. For instance, features that are actually irrelevant such as "flaked coffee crystal" can appear to be valuable in certain contexts (Carpenter, Glazer, and Nakamoto 1994), and such an effect might become even more pronounced when decisions are made under time pressure.

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