The Effect of Preference Fluency on Consumer Decision Making

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Abstract

We propose that consumer preferences are often systematically influenced by preference fluency, i.e., the subjective feeling that forming a preference is easy or difficult. In five studies, we manipulated the fluency of preference formation by presenting descriptions in an easy or difficult to read font (Studies 1 and 2) or by asking participants to think of few vs. many reasons for their choice (Studies 3 to 5). As predicted, subjective experiences of difficulty increased choice deferral (Studies 1 to 3) and the selection of a compromise option (Studies 4 and 5), unless consumers were induced to attribute the experience to an unrelated cause. Unlike studies of decision conflict, these effects were obtained without changing the attributes of the alternatives or the composition of the choice sets. We discuss the theoretical and practical implications of the results.
Understanding the factors that determine which options consumers choose and whether they make rather than defer purchase decisions is critical for the development of marketing strategies. A major contribution of behavioral decision research has been to establish the notion of uncertain preferences, the idea that consumer preferences are not well defined but rather constructed in the process of making a choice. This constructive viewpoint suggests that different tasks and contexts highlight different aspects of the options, focusing consumers on different considerations that lead to seemingly inconsistent decisions (Bettman, Luce, and Payne 1998). Past work has focused on the effect of decision conflict and preference uncertainty on consumer choice by manipulating the content of the choice or by manipulating which content is the focus of attention (e.g., Dhar and Simonson 1992; Nowlis and Simonson 1997; Shafir 1993). Recent judgment research indicates, however, that there is more to thinking than thought content. As reviewed below, the impact of thought content can be qualified by the person’s subjective experiences during the processing of information (for a review see Schwarz 2004). To date, research on constructed preferences has highlighted contexts that change the content of thoughts during a decision process and has largely ignored the effects of experiences arising from those thoughts. The present research begins to fill this gap.

We examine the effect of changes in experiential states during the decision process. We term the subjective feeling of ease or difficulty experienced while constructing preference *preference fluency*. In the present research, we focus in on the effects of preference fluency on choosing the deferral and compromise option (Dhar and Simonson 2003). Prior research has demonstrated that purchase deferral and choice of the compromise option are both consequences of difficult decisions (Dhar 1997; Kivetz, Netzer, and Srinivasan 2004; Simonson 1989; Tversky and Shafir 1992). Building on recent research into the interplay of experiential and declarative
information, we show that the perception of subjective preference formation experience bears on the decision to defer choice and to compromise, even when this experience is due to extraneous variables, unrelated to the choice alternatives.

A major theoretical implication of our research is that in situations where preference uncertainty arises from the difficulty in trading off competing characteristics of the choice alternatives, its influence on decision behavior is potentially mediated by consumers’ subjective experience of indecision and conflict (e.g., Dhar 1997; Luce 1998). If so, it is likely that any other variable that elicits the experience of difficulty while contemplating a choice will have similar effects. The present studies hold objective tradeoff difficulty constant by presenting participants in all conditions with the same choice alternatives. To manipulate participants’ subjective experience of the difficulty of preference construction, we manipulated extraneous variables like the readability of the print font (Studies 1 and 2) and the number of reasons requested for a choice (Studies 3, 4, and 5). Throughout, we observed that variables that increase the difficulty of preference construction increase indecision, in ways that parallel the effects of tradeoff difficulty.

In the remainder of the paper, we review key findings bearing on the role of experiential information in judgment. Next, we introduce the concept of preference fluency and report five studies in which preference fluency was manipulated through variables extraneous to the choice alternatives. We discuss the implications of this research with respect to the role of preference fluency in consumer decision making and managerial tactics that might promote preference fluency to influence purchase decisions.

**Experiential Information in Judgment and Decision Making**
The emerging consensus among decision researchers is that consumers often do not have well-defined preferences that can be retrieved, and that they construct their preferences when faced with the need to make decisions (for a review, see, e.g., Bettman, Luce, and Payne, 1998; Slovic 1995). For example, Levin and Gaeth (1988) showed that consumers who tasted ground beef that was described as being “75% lean” rated it more favorably than consumers who were told that the (same) ground beef had “25% fat.” Also, Simonson and Tversky (1992) demonstrated that consumers are more likely to exchange $6 for an elegant Cross pen when they also have the option of exchanging $6 for a less attractive pen.

Past research has often focused on decision conflict and preference uncertainty resulting from the attribute values of the options and the need to choose among several about equally attractive alternatives. This focus on the impact of the content of information and attribute value tradeoffs has been complemented by increased attention to experiential information in the form of moods and emotions, first in judgment research (for a review see Schwarz and Clore 1996) and subsequently in decision making (e.g., Luce, Bettman, and Payne 1997). As research in social cognition indicates, however, experiential information is not limited to ambient affective states like moods and emotions, but includes cognitive experiences that accompany the reasoning process (Clore 1992).

The notion of preference fluency is rooted in the dynamics of the reasoning process rather than in the content that is accessible. Broadly speaking, any variable that influences the cognitive experience of choosing is likely to influence the willingness to choose as well as which option is chosen. For example, if people find it easy or difficult to retrieve information from memory, or to generate relevant arguments, these accessibility experiences will be informative in their own right and qualify the implications of thought content (for reviews see Schwarz 1998, 2004).
Similarly, people may find it easy or difficult to process new information and this experience of processing fluency again affects the conclusions drawn from that new information (for a review see Winkielman, Schwarz, Fazendeiro, and Reber 2003). To date, these related cognitive experiences, pertaining to the fluency of recall and thought generation and the fluency of processing new information, have received considerable attention in the judgment literature, but their effects on preference construction have not been studied. We first review findings from the judgment literature and subsequently address implications for choice.

**Accessibility Experiences: Ease of Recall and Thought Generation**

Challenging the traditional notion that judgments are based solely on what comes to mind, Schwarz et al. (1991, Experiment 1) observed that the implications of accessible thought content are qualified by the ease or difficulty with which a given thought can be brought to mind. In their studies, participants rated themselves as less assertive after recalling 12 examples of their own assertive behavior (experienced as difficult) than after recalling merely 6 examples (experienced as easy). Apparently, they concluded from the difficulty of recalling 12 examples that they cannot be that assertive, or else recalling 12 examples would not be so difficult. Supporting this interpretation, the observed pattern reversed when the informational value of the subjective experience was undermined through a misattribution manipulation. That is, when participants could attribute the experienced difficulty to the distracting effect of background music, they reported higher assertiveness after recalling 12 rather than 6 examples (Schwarz et al 1991, Experiment 3). Subsequent research replicated this basic pattern across many content domains (for reviews see Schwarz 1998, 2004).
Which inferences people draw from accessibility experiences depends on which naïve theory of the mind they bring to bear on them, which is context dependent. One set of naïve theories pertains to the relationship between external variables, like the frequency of events in the world, and the accessibility of thought content. Consistent with Tversky and Kahneman’s (1973) availability heuristic, individuals assume that frequent events are easier to recall than rare events. Hence, ease of recall feeds into judgments of frequency (e.g., Arts and Dijksterhuis 1999; Wänke, Schwarz, and Bless 1995) as well as judgments for which perceived frequency serves as input, ranging from assessments of risk (e.g., Raghubir and Menon 1998; Rothman and Schwarz 1998) to judgments of personality (e.g., Schwarz et al. 1991). Similarly, people assume that it is easier to generate arguments for a proposition when there are many rather than few good reasons that support it. Accordingly, they are more persuaded when they have to generate few arguments rather than many, despite the fact that more arguments were brought to mind in the latter case (e.g., Wänke, Bless, and Biller 1996). Moreover, they report higher attitude strength on measures like attitude importance and certainty after generating a few rather than many arguments (e.g., Haddock, Rothman, Reber, and Schwarz 1999).

Finally, turning to consumer preferences, Wänke, Bohner and Jurkowitsch (1997) observed that consumers were more likely to prefer a BMW over a Mercedes after they generated one rather than many advantages of a BMW. In all cases, the obtained judgments were consistent with the implications of thought content when recall was easy, but opposite to the implications of thought content when recall was difficult.

All these studies provide evidence that subjective experiences accompanying thoughts can affect judgments above and beyond the effects of the content of those thoughts. This research also includes studies to rule out the possibility that thought content is responsible for the effects.
For example, in Wänke et al.’s (1997) persuasion experiment, yoked participants merely read the arguments generated by others, thus depriving them of the difficulty experience associated with argument generation. As expected, these participants were more persuaded by many rather than few arguments, testifying to the quality of the arguments themselves. Similarly, participants turn to the content of recall when their subjective accessibility experience is discredited through (mis)attribution manipulations. These manipulations change their judgments of personality (e.g., Schwarz et al. 1991) or attitude strength (e.g., Haddock et al. 1999) to be more extreme after generating many rather than few examples or arguments, again indicating that the content of their thoughts is persuasive unless qualified by the experience of difficulty.

Finally, other studies held the amount of recall constant and varied the experienced difficulty by inducing participants to contract the corrugator muscle while listing their thoughts (e.g., Sanna, Schwarz, and Small 2002; Stepper and Strack 1993). As expected, the effects of this bodily feedback manipulation, which conveys a sense of effort, paralleled the effects of listing many thoughts while holding the number of thoughts constant. In sum, experienced ease or difficulty of recall or thought generation is informative in its own right and qualifies the implications of thought content.

**Processing Fluency: The Ease of Processing Information**

The premise behind processing fluency is that any stimulus may be processed with differing degrees of speed, effort, and accuracy. In some cases, these processing differences arise from visual variables like figure-ground contrast, stimulus clarity, presentation duration or the amount of previous exposure. These variables influence perceptual fluency (e.g., Jacoby, Kelley, and Dywan 1989). In other cases, processing differences arise from variables like the
consistency between the stimulus and its context or the availability of appropriate mental concepts for stimulus classification. These variables influence conceptual fluency (e.g., Whittlesea 1993). While this distinction is relevant to some theoretical issues (Kelley and Rhodes 2002), perceptual and conceptual fluency have parallel effects for the issues of interest to the present research (for a discussion see Winkielman et al. 2003a,b). Hence we prefer the more generic term of processing fluency.

As is the case for accessibility experiences, the inferences that people draw from processing fluency are highly malleable. Because we have only one window on our subjective experiences, people are vulnerable to misreading the fluency resulting from one of many sources (e.g., repeated exposure) as being due to a different source (e.g., visual clarity). Thus, people who have seen the stimulus before, and hence find it easier to process, may infer that the current presentation lasted longer, or had higher clarity, than people not previously exposed to the stimulus (e.g., Witherspoon and Allan, 1985; Whittlesea, Jacoby and Girard, 1990). Conversely, visual manipulations of fluency may result in erroneous inferences of previous exposure, often referred to as “illusions of familiarity” (Whittlesea 1993).

One effect of processing fluency that is particularly relevant to decision making is its influence on judgments of truth. When the objective truth of a statement is difficult to evaluate, people often draw on social consensus information to arrive at a judgment – after all, if many believe it, there’s probably something to it (Festinger, 1954). Hence they are more likely to accept a statement as “true” when it seems familiar rather than novel. The statement’s perceived familiarity, however, is a function of how fluently it can be processed and variables like exposure frequency (e.g., Begg, Anas, and Farinacci 1992; Hawkins and Hoch 1992) or figure-ground contrast (Reber and Schwarz 1999) reliably increase the likelihood that a given statement
is accepted as true. In fact, merely presenting the same statement in a color that makes it easy or
difficult to read against the background influences truth judgments (Reber and Schwarz 1999).

The fluency of processing can also have an impact on evaluative judgments: A given
target is evaluated more positively, the more easily it can be processed. Thus, any variable that
facilitates fluent perception is likely to increase liking, from figure-ground contrast (e.g., Reber,
Winkielman, and Schwarz, 1998) and presentation time (Reber et al., 1998) to previous exposure
(as known since Zajonc's, 1968, demonstration of the mere exposure effect). For example, Reber
et al (1998) observed that participants liked a given picture more when it was preceded by a
subliminally presented matching rather than mismatching, contour. Winkielman and Fazendeiro
reported in Winkielman, Schwarz, Reber, and Fazendeiro 2003b) obtained parallel findings with
a conceptual fluency manipulation. In their studies, participants saw unambiguous pictures of
common objects (e.g., a picture of a lock), preceded by a word. Participants reported liking the
pictures more when they were preceded by conceptually related primes (e.g. “lock” or “key”) than unrelated primes (e.g. “snow”). Liking of the picture was a function of the processing
fluency resulting from the primes. Lee and Labroo (in press) obtained similar findings in the
consumer domain. They found, for example, that consumers reported more positive attitudes
toward ketchup when they were previously exposed to a closely related product (mayonnaise)
rather than an unrelated one (vitamins).

Note that these effects of processing fluency cannot be traced to differential descriptive
information about the unambiguous targets. Instead, the available evidence suggests that fluency
itself is hedonically marked and experienced as positive. Consistent with this assumption,
Winkielman and Cacioppo (2001) observed that high fluency is associated with increased
activity over the region of the zygomaticus major ("smiling muscle"), which is indicative of a
positive affective response.

In sum, the reviewed findings illustrate that judgments are not necessarily based on descriptive information about the target. Instead, the fluency with which information about the target can be processed or the ease of thought generation or recall is informative in its own right and feeds into a variety of judgments, including judgments of truth and liking. Next, we turn to the implications of these phenomena for construction of uncertain preferences.

**Preference Fluency**

Past research has examined the consequences of difficulty of deciding arising from uncertain preferences (for a review, see Bettman et al. 1998). This research typically explained choices in terms of the characteristics of the options or in terms of reasons that are used to justify the choice (e.g., Kivetz 1999; Shafir, Simonson, and Tversky 1993; Simonson 1989; Simonson and Nowlis 2000). Difficulty was often manipulated by changing the relative attractiveness of the options or by changing the choice task.

While the choice options and the task can influence the difficulty of the choice, the subjective experience during the decision process can also influence the perceived difficulty of the choice. In the judgment research reviewed above, individuals presumed that experiences that occurring while thinking about a judgment were related to that judgment and incorporated those experiences into their ratings. This is consistent with prior research on the “aboutness” principle (Higgins 1998). This research showed that when thoughts or feelings come to mind while a particular target is being considered, those thoughts or feelings are assumed to be relevant to the target or they would not come to mind at that moment. In preference construction, we believe that when the subjective experience of difficulty accompanies the decision making process, this
experience will induce an inference that the choice itself is difficult. As a result, the experience will mimic the effects of difficulty found in previous research that manipulated the content of the choice.

Research on the determinants of choice deferral shows that the tendency to not choose increases when the choice set offers several attractive alternatives but none that can easily be justified as the best (Dhar 1997, Tversky and Shafir 1992). Such decisions involve conflict and can be emotionally stressful (e.g., Luce 1998), because choosing one alternative implies that other alternatives and their unique attractive features should be foregone (e.g., Festinger 1962). Other sources of decision difficulty might also lead to choice deferral. If individuals experience low preference fluency when thinking about a choice, they may attribute this subjective feeling about preference formation to the difficulty of the decision. Building on prior work showing that decision difficulty promotes choice deferral, we propose that the likelihood of making a choice increases with preference fluency.

Preference fluency can also influence the relative preference among options in a choice set. In particular, some options are selected not because they are more preferred but as a way to resolve a difficult decision (e.g., Dhar and Simonson 2003). As illustrated in Figure 1, the compromise effect occurs if the choice share of one option, \( b \), relative to another alternative, \( c \), is enhanced when a third option, \( a \), is added to the choice set making \( b \) a “compromise” (middle) option. Consistent with earlier process data (Simonson 1989), many consumers who select a compromise option find the decision to be difficult and view the middle option as a way to resolve this difficulty. Thus, we propose that when the fluency of processing decreases, options whose status as conflict resolution mechanisms is transparent will gain share. In particular, we hypothesize that the compromise effect will be enhanced when preference fluency decreases.
These predictions emphasize the role of experiential information in preference construction. Many variables are likely to influence preference fluency. At one extreme are variables that are fully extraneous to the features of the choice alternatives themselves. For example, we expect that consumers are more likely to make a choice when it is easy rather than difficult to read new information about the choice alternatives (e.g., due to different print fonts). At the other extreme are variables that are inherent to the choice alternatives themselves (e.g., equally attractive options). These latter variables were the focus of previous research that manipulated the difficulty of decisions by changing the content of the choice set or the attribute tradeoff difficulty. In between these extremes are experiences that may or may not depend on the nature of the choice alternatives. For example, listing reasons for one’s preference can be experienced as difficult because the choice alternatives are similar in attractiveness or because one has been asked to list many of them.

As this discussion indicates, we propose fluency of preference formation as an integrative concept that can account for cases of indecision resulting from features of the choice alternatives as well as cases of indecision resulting from extraneous variables. The present studies focus on these latter cases. We test our proposition that increased preference fluency decreases choice deferral in two ways. In studies 1 and 2, we manipulate fluency by presenting the same choice alternatives either in an easy or in a difficult to read font. In study 3, we ask participants to think either of a few (easy) or many (difficult) reasons for their choice. Extending the exploration of processing fluency from deferral of choice to the alternative chosen, studies 4 and 5 address the influence of preference fluency on the size of the compromise effect. In these studies, we manipulate fluency by asking for a few versus many reasons for the choice. Throughout, our results indicate that the experienced fluency of preference formation has a profound impact on
choice behavior, unless the informational value of the experience is drawn into question. Importantly, these effects are obtained in the absence of any objective changes in the attributes of the individual choice alternatives, the composition of the choice sets, or the response options.

**Study 1: Print Fonts and Deferral of Choice**

Our first study tests the assumption that fluency experiences deriving from extraneous variables can affect the subjective difficulty of choice and in turn affect deferral. In this study, all participants received identical descriptions of two sets of choice objects (digital cameras and microwave ovens), except that the descriptions were printed in a font that was easy or difficult to read. We predicted that participants would misinterpret the experienced difficulty of processing information about the alternatives as being due to the difficulty of the decision, rather than the difficulty of reading the information. Accordingly, respondents should be more likely to defer choice when the information is presented in a difficult to read rather than standard font.

**Method**

As part of a large questionnaire completed for course credit, 99 undergraduate students at a large northeastern business school were presented with two hypothetical choice problems, one choice of digital cameras and one choice of microwave ovens. Each choice problem provided descriptions of two options. Like many real consumer purchase situations, subjects could either choose one of the two options presented or defer choice and continue looking for other options. Subjective difficulty was manipulated by presenting the choices to half of the participants with the descriptions presented in embossed italicized gray font (see example in Figure 2). This font has been shown to be fairly difficult to read, though it can be read accurately with some effort.
(Epley and Norwick 2004). In a pretest, 34 undergraduates rated the materials used in this study on a 9-point scale ranging from very easy to very difficult to read. As expected the materials shown in figure 2 were rated as significantly more difficult to read than the same materials presented in a standard font (Ms = 3.53 and 4.88, t(32) = 2.75, p < .01).

Results and Discussion

We predicted that participants would misinterpret the processing difficulty caused by the font as reflecting the choice difficulty, resulting in an increased incidence of choice deferral. The results supported this prediction. Whereas 71% of the participants who received the difficult font deferred the choice of a digital camera, only 56% of those who received the standard font did so. Similarly, 31% deferred the choice of a microwave oven under difficult font conditions, whereas only 18% did so under standard font conditions. The difference in deferral rates across the fonts was statistically significant, $\chi^2(1) = 4.75, p < .05$.

These results support the idea that, holding constant the choice alternatives and the response modes, preference construction can be affected by the subjective experience that occurs during choice. Since preference fluency was affected by something other than the choice alternatives or response options, one necessary condition for this fluency to affect choice is that the decision, not the manipulated source of decision difficulty (i.e. the font), be seen by participants as the cause of the fluency experience.

The present result might be explained by the tendency to minimize effort when making a choice that requires more work instead of preference fluency. For example, if we suppose that it takes more effort to read the difficult font and that this increment in effort is enough to induce people to give up on processing the information and simply defer the choice, then the result of
our first study may reflect people not having sufficient motivation to process the information in the difficult font condition versus the standard font condition. While recent research shows that the motivation to process in simple experimental settings exceeds the required levels of processing (e.g., Bettman et al. 1998), it is important to test directly whether motivation is driving this result. If this rival account explains the tendency to defer choice when the font is difficult to read, then it should not make a difference if participants are explicitly told that the font is difficult to read. Conversely, if the difficult to read font causes participants to experience low preference fluency that is misattributed to decision difficulty, then an explicit reference to the fuzzy font should diminish its impact on choice deferral by shifting the attribution for the experienced difficulty to its true source, the font. The impact of mentioning the difficult to read font is examined in Study 2.

**Study 2: Print Fonts, Attribution, and Deferral**

As discussed above, we expected the observed impact of print font on choice deferral to be reduced or eliminated when participants correctly attribute the experienced processing difficulty to the font. That is, this attribution should undermine (or explain away) the informational value of their difficulty experience, resulting in lower deferral rates that are similar to the standard font condition. Accordingly, in Study 2 we presented a choice in a difficult to read font and drew the attention of half of the participants to the unclear font.

**Method**

This study was embedded in a web-based questionnaire involving several unrelated studies. Two hundred seventeen individuals, students and non-students, participated in this study in exchange for entry into a raffle. The study involved a choice between two microwave ovens.
In this study both conditions used the difficult to read font. In one condition, participants read, “The materials shown below are from an actual retail website. We apologize that the materials below may be difficult to read. This is how they downloaded from the website.” In the other condition, participants were not given the last two sentences, but were simply told that the descriptions were taken from an actual retail website.

Results and Discussion

When participants’ attention was not drawn to the font, 49% deferred choice; deferral dropped to 28% when their attention was drawn to the font \( \chi^2 (1) = 9.57, p < .005 \). Thus, drawing attention to the font attenuated the otherwise observed effect, consistent with earlier studies on the use of experiential information. In the absence of an attentional manipulation, individuals are likely to draw on their experiences as information that is relevant to the task at hand (consistent with the “aboutness” principle; Higgins 1998), even when its source is fairly obvious (for reviews see Schwarz 2004; Schwarz and Clore 1996).

Study 3: Thought Generation and Deferral

The preceding studies manipulated preference fluency by changing the ease with which new information about choice alternatives could be processed. As predicted, decreased preference fluency increased deferral of choice. Study 3 extends this work by turning to the fluency of participants’ own thought generation. As outlined in the introduction, preference fluency is a product of both the processing of externally presented information and the internal thought generation process. Previous research into judgment formation has shown that subjective experiences related to one’s own thought generation process, not just the fluency of processing
externally perceived stimuli, can affect subsequent cognitions (e.g., Schwarz et al. 1991). In the remaining studies, we manipulate preference fluency by affecting the experience of thought generation during choice and examine its effects on preferences.

Drawing on earlier work on ease of thought generation, we asked participants in Study 3 how easy it would be for them to list either 2 or 10 reasons for their choice, before making that choice. Given the information available, we expected that 10 reasons would be difficult to generate, leading to an experience of low fluency. This experience is likely to be attributed to the decision, thus increasing the likelihood of choice deferral.

Method

Undergraduate students from a northeastern university and a western university participated in this study. Some participants were paid to complete a large questionnaire that included the present study, and others were recruited in their dorms to complete a very brief questionnaire without compensation. In both cases, all participants were asked to make two choices (see appendix for sample materials), one among digital cameras and another among microwave ovens (N=289). They were shown descriptions and pictures of two options in each choice problem. Before making their choices, half of the participants were asked to rate how easy or difficult it would be to come up with 2 reasons for choosing a specific option on a seven point scale ranging from very difficult (1) to very easy (7). The other half of the participants had the same task, except they were asked to rate the difficulty of generating 10 reasons for their choice before making their choice. Participants were not required to list their reasons, although we indicated that we might ask them to do so later on, but merely rated how difficult they thought it would be to generate them. Earlier research by Wänke et al. (1997) indicated that
drawing attention to the likely difficulty in this way is sufficient to elicit the effects usually observed with actual thought generation. After rating the difficulty of generating reasons, subjects were asked to either choose one of the two options or choose to continue looking for other options.

Results and Discussion

As expected, participants rated generating 10 reasons as more difficult than generating 2 reasons (Ms = 3.55 and 4.62, respectively, t(280) = 5.50, p < .001), for the digital camera choice. More importantly, 61% of the participants asked about 10 reasons chose to defer the choice, whereas only 49% of the participants asked about 2 reasons did so (χ²(1) = 4.10, p < .05). Across conditions, those who chose to defer the choice, rated coming up with reasons as more difficult than those who did not defer the choice (3.64 for deferral versus 4.63 for no deferral, t(280) = 4.99, p < .001).

Mediational analyses were conducted to test whether the difficulty rating mediated the effect of the number of reasons on choice deferral. As stated above, the number of reasons had a significant effect on choice deferral and on the difficulty ratings. Using a logistic regression to predict choice deferral, we tested the effect of adding rated difficulty as a predictor to an equation that already contained number of reasons as a predictor. We found evidence of full mediation; the coefficient of reasons became non-significant (B = .018, p = .57) with the addition of rated difficulty, while rated difficulty remained significant (B = .342, p < .001).

A similar pattern was observed in participants’ choices of microwave ovens. Generating 10 reasons was rated as more difficult than generating 2 reasons (Ms = 3.64 and 5.08, t(287) = 8.38, p < .001). Those who rated the difficulty of generating 10 reasons chose to defer the
choice more than those asked about 2 reasons (32% versus 22%, $\chi^2(1) = 3.50$, $p=.061$). Lastly, those who chose to defer rated generating reasons as more difficult than those who did not defer the choice (3.71 for deferral, 4.60 for no deferral, $t(287) = 4.23$, $p < .001$). Again, mediation analyses confirmed that difficulty fully mediated the effects of number of reasons. As mentioned above, the number of reasons had a significant effect on choice deferral and on difficulty ratings. When difficulty was added to a logistic regression predicting choice deferral, the effect of number of reasons became non-significant ($B = .004$, $p = .92$), while the effect of difficulty remained significant ($B = .338$, $p < .001$).

In summary, Study 3 extended our findings in two ways. First, we found that the subjective experience resulting from thought generation can influence choice. As expected, greater preference fluency led to decreased choice deferral. Together with the earlier studies, this result provides evidence that fluency experiences of various origins can influence choice. Second, in study 3, we measured the experience of difficulty directly. In the earlier studies, we presumed that experienced difficulty was mediating the effects of the change in font on choice deferral. Here, we used the direct measure of perceived difficulty to show that this experience fully mediated the effects of our fluency manipulation on choice.

**Study 4: Thought Generation and the Compromise Effect**

The first three studies examined one consequence of low preference fluency, choice deferral. The next two studies examine the effect of fluency on the compromise effect (Simonson 1989). The compromise effect has typically been demonstrated with three item choice sets, where the options require a tradeoff between two attributes (e.g. price and quality). This effect arises from the tendency to choose an option more often when that option lies between two (or
more) other options on the relevant attributes, as opposed to being an “extreme” option in the set. Thus, an option can be chosen more or less depending on its relative position in a particular choice set. Recent research has shown that difficulty in a choice situation can affect preference for the middle or compromise option (Dhar and Simonson 2003). In the present studies, we will manipulate the fluency of the choice without changing the choice alternatives or the response options. Study 4 uses the same fluency manipulation as study 3 and examines its effect on the tendency to choose the middle option in a forced choice situation.

Method

Undergraduate business students from a northeastern university were asked to make a hypothetical choice among three digital cameras (N = 178) as part of a large questionnaire completed for course credit. The choice sets included a common core set of two cameras, where one was more expensive and higher quality (option B) than the other (option C). Half of our participants saw a choice set which included these two cameras in addition to an even higher quality and higher price camera (option A). The other half of the participants saw a choice set which included the two core cameras in addition to a lower price, lower quality camera (option D). A sample choice set is shown in the appendix (see figure 1 for a diagram of the choice set). Before indicating their choice, half of the participants were asked to rate how easy or difficult it would be to generate 2 reasons for their choice. The remaining participants were asked about 10 reasons before indicating their choice.

Results and Discussion
The manipulation was successful as shown by the ratings of difficulty. As expected, generating 2 reasons was rated as significantly less difficult than generating 10 reasons (Ms = 4.73 and 3.50 respectively, t(178) = 4.93, p < .001). To test for the compromise effect, we computed the choice share of option B relative to Option C (see Simonson and Tversky 1992). The compromise effect would be revealed if the relative share of Option B was higher in the choice set that included Option A (i.e., when B was the compromise) than in the set with Option D (where B is an “extreme”). The choice shares are presented in Table 1. There was a marginally significant compromise effect in the 2-reasons condition. The choice share of option B among those who chose B or C was 69% when the choice set contained A and only 47% when the choice set contained D, for a compromise effect of 22% ($\chi^2(1) = 3.00, p = .083$). The magnitude of the compromise effect doubled to 44% in the 10 reasons condition, (76% vs 32%, $\chi^2(1) = 12.8, p < .001$).

In summary, as we expected, the tendency to choose the middle option was enhanced by inducing a subjective feeling of difficulty (i.e., reducing the sense of preference fluency) during the choice task. Participants apparently (mis)attributed the difficulty associated with the task of generating 10 reasons to the difficulty of the choice task. This difficulty then induced them to choose the compromise option. In the next study, will try to shift the attribution for the feeling of difficulty away from the choice, thereby eliminating the effect of difficulty on the tendency to choose the compromise option.

**Study 5: Thought Generation, Attribution, and Compromise**

In study 5, we utilize the set up from study 4 and add one additional manipulation. We tell participants in this study how many reasons participants in a previous study were able to
generate. We expect that participants who are told that others could not generate many reasons will reason that the difficulty they are experiencing is not unique to them and is actually a product of the challenging task of generating many reasons. This should shift their attribution for their own feeling of difficulty toward the thought generation task and away from the choice. If this manipulation successfully shifts attributions away from the choice task, then in conditions where participants are told others could not generate many reasons, the 10 reason generation task should not increase the tendency to choose the middle option compared to the 2 reason condition.

Method

As part of a large questionnaire completed for course credit, undergraduate business students at a northeastern university were asked to choose from among three microwave ovens (N = 218). The materials described three microwave ovens that varied in price and quality, following the typical design of a compromise choice set. Participants were asked to rate the difficulty of generating 2 or 10 reasons before making a choice. One question was added after the rating of difficulty of generating reasons and before making a choice. This question first informed subjects that, in a previous study, the average number of reasons that students could generate for this choice was 2.4 or 9.6, (manipulated between participants) and then asked respondents how many reasons they thought they could generate.

Results and Discussion

As expected, the share of the middle option was highest when participants were asked to generate 10 reasons and told that other students averaged about 10 reasons (70%), rendering the experienced difficulty particularly diagnostic. However, this share dropped significantly to 48% ($\chi^2 (1) = 6.92, p < .01$) when participants were told that others could only generate 2.4 reasons. In this case, the experienced difficulty was likely to be attributed to the unreasonably difficult task,
not to one’s idiosyncratic difficulty in forming a preference. This tendency to choose the middle option was the same (48%) for those participants who were asked to generate 2 reasons and told that others could generate 2.4 reasons. The difference between the middle-option share in the 10-reason/9.6 others’ reasons condition and the other two conditions is statistically significant ($\chi^2(2) = 8.49$, $p < .05$).

In sum, this study replicates the influence of preference fluency on the compromise effect observed in study 4. It further demonstrates that this influence is due to information provided by the subjective experience and hence attenuated when the informational value of the experience is called into question, as seen in study 2.

**General Discussion**

A great deal of research has shown that preferences are constructed online, once a decision is presented. This research has examined how the preference construction process is affected by all sorts of variables relating to the choice alternatives, the choice set, and the response options. This research has documented, among others, the effect of asymmetric dominance and compromise effects on choice and the effect of equally attractive options on purchase deferral (e.g., Dhar 1997; Huber et al. 1982; Simonson 1989). Previous research into preference construction manipulated how individuals processed the content of the choice. In the present research, we propose that, in addition to the content of the choice (e.g. attribute values), purchase decisions are also influenced by the cognitive experience that occurs during the processing of the choice content (i.e. preference fluency). We tested this proposition by manipulating preference fluency, holding the content of the choice constant.
Summary and Theoretical Implications

The findings of this research indicate that preference fluency, or the consumer’s subjective feeling regarding the ease or difficulty of forming a preference, is an important determinant of whether a purchase decision will be made and which option will be chosen. The results of Studies 1 and 2 demonstrated this principle using a manipulation of font clarity. When participants had difficulty reading the description of the options (i.e. low preference fluency) and their attention was not drawn to the true source of the experience (i.e. the fuzzy font), they were more likely than the control group to defer the purchase decision. However, once the fuzzy font was highlighted, the effect of information processing difficulty disappeared.

Studies 3 and 4 employed a different manipulation of preference fluency, focusing on the ease of thought generation rather than the ease of processing new information. In these studies, participants were asked to think of either two or ten reasons for choosing a particular option. We showed that the difficulty of generating many reasons, which decreases preference fluency, increases the likelihood of choice deferral (Study 3) and of choosing a compromise option (Study 4). Mediational analysis confirmed that choice difficulty mediated the impact of the number of reasons on choice deferral. Study 5 showed that the effect of subjective difficulty on the compromise effect is moderated by the interpretation of that feeling. When participants attribute difficulty to the reason generation task rather than the decision, the effect on choice is eliminated.

Together, these findings demonstrate that a subjective experience arising from characteristics of a choice can affect which option is chosen and whether any option is chosen at all. The feeling of difficulty can be the result of incidental variations in how the choice is presented or it can arise from the choosers’ own thought generation activities. In our studies,
when individuals were not given cues about the true source of their subjective experience, they attributed it to the choice, presumably because the experience occurred during choice related cognitive processing.

These findings provide one reason why expressed consumer preferences may be unstable. To the extent that choices vary in their mode of presentation and that consumers vary in their internal states, the preference fluency experienced during choice will also vary. This variation will induce changes in expressed preferences. Preference fluency may also have significant implications for the reconstruction of memories of past choices and inferences drawn from those memories. For example, does the fluency at the time of choice get stored as part of the memory of that choice? If not, options chosen in part because of fluency effects may be misremembered as being more attractive than they really were. Alternatively, if fluency is better remembered than attribute values, then inferences about the choice options may be based on the recalled fluency. For instance, a memory of high fluency (i.e. an easy choice) may cause consumers to make biased inferences, such that chosen options are distorted to have more positive attribute values and forgone options are distorted to have less positive attribute values. Conversely, memory of low fluency may attenuate such effects.

Future research might further examine the processes underlying the impact of preference fluency on choice and the boundaries of preference fluency effects. Regarding process, it will be interesting to examine whether low fluency when forming a preference directly affects choice, or whether the effect of preference fluency is mediated by choice confidence, risk perception, and/or a decrease in the perceived attractiveness of options. Furthermore, the present research has focused on two particular contributors to preference fluency – font clarity and number of reasons, and on two behavioral consequences – choice deferral and compromise. Future research
might extend the range of both independent and dependent variables, which will provide insights into the boundaries of preference fluency effects.

It would be interesting to examine the possibility that fluency mediates some established choice effects. Studies have shown that many variables present in the consumer environment, such as assortment size (i.e., the number of available options), distraction (e.g., loud music), cognitive load (e.g. having to perform a secondary task), and anticipation of regret can affect choices. Future research could test whether these effects operate primarily through their effects on fluency. Regarding the impact of assortment size, one might interpret the findings of Iyengar and Lepper (2000) in terms of preference fluency. For example, the lower purchase deferral rate observed after evaluating six, compared to 24, jams might be explained using the notion of preference fluency.

It is also important to examine additional cognitive and behavioral dependent variables that might be influenced by preference fluency. For example, preference fluency might affect risk attitudes as well as price-quality tradeoffs. Future research might also examine the conditions that moderate the degree of impact of a given level of preference fluency on choice. For example, one might conjecture that preference fluency will play a greater role under conditions of low involvement and low task importance. Future research could also look at inferences that are drawn about the choice options based on high or low preference fluency. For example, low fluency might lead to inferences of high similarity or high attractiveness among the choice options.

We should note that our results do not imply that preference fluency is detrimental to effective consumer decision making. Just as the study of heuristics, required documenting biases to understand the underlying mechanisms, our study of fluency required varying fluency, holding
everything else constant. In natural settings, truly difficult decisions tend to have lower
preference fluency. Deferring these decisions or compromising in the face of these decisions are
often adaptive responses. However, understanding the impact of preference fluency provides
important insights into the drivers of consumers’ choices.

Practical Implications

Marketers want consumers to buy their products and, accordingly, try to offer the target
customers the most attractive set of options. Much of the academic and applied marketing
research has focused on ways to achieve this goal and present products so as to maximize sales
(e.g., the right assortment, persuasive ads). The present research highlights the importance of a
new class of tactics designed to increase the likelihood that a customer will make a purchase,
rather than go elsewhere or procrastinate. Specifically, our findings indicate that conditions that
promote preference fluency often play a key role in determining whether a purchase will be
made. This is particularly important because many marketplace decisions are perceived as
difficult by consumers. Importantly, marketers should not assume that preference fluency is an
uncontrollable factor that merely reflects the state of mind of the consumer. Instead, they should
proactively create conditions that are conducive to preference fluency.

This principle highlights the importance of making it as easy as possible for the consumer
to form a preference. In particular, attribute information needs to be easy to read and process
and presented in a way that facilitates preference formation. For example, information displays
that help consumers compare options along relevant attributes are likely to promote preference
fluency. Similarly, using the same units across options will make it easier for shoppers to
compare options and form a preference.
Marketers may also promote preference fluency by reinforcing consumers’ tentative preferences with evidence that these preferences are “correct.” For example, marketers may present expert ratings or information about the popularity of presented options. Furthermore, marketers should try to offer consumers reasons for any difficulty in making up their minds. For example, a salesperson may inform debating (prospective) purchasers about the difficulty that most purchasers experience in choosing among different HDTV formats. That is, merely acknowledging decision difficulty might enhance preference fluency, though it might also legitimize choice deferral. In sum, preference fluency is a key determinant of consumer choice and marketers should make every effort to manage this important variable.
Table 1: Percentage of Participants Choosing Each Alternative (Study 4)

<table>
<thead>
<tr>
<th>Option</th>
<th>2 Reason condition</th>
<th>10 Reason condition</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>{A, B, C}</td>
<td>{B, C, D}</td>
</tr>
<tr>
<td>A</td>
<td>39%</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>42%</td>
<td>40%</td>
</tr>
<tr>
<td>C</td>
<td>19%</td>
<td>44%</td>
</tr>
<tr>
<td>D</td>
<td>16%</td>
<td></td>
</tr>
</tbody>
</table>
Figure 1: Compromise Effect Choice Set

Compromise Effect - $B/(B+C)$ greater for choice set \{A,B,C\} than for \{B,C,D\}.

<table>
<thead>
<tr>
<th>Attribute X (Price)</th>
<th>Attribute Y (Quality)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td></td>
</tr>
</tbody>
</table>
Minolta DiMAGE S304

PRODUCT FEATURES
- 3.34-megapixel CCD for high-resolution images
- 3x optical/2x digital zoom
- 1.8” color TFT LCD monitor and real-image zoom viewfinder
- High-performance autofocus and autoexposure
- Simple menus displayed on LCD monitor
- USB interface for easy connection to PC or Mac
- 16MB CompactFlash card included

Price $499
References


Appendix: Sample Digital Camera Materials (Studies 3-5)

Canon PowerShot
PRODUCT FEATURES
- 2.31-megapixel resolution
- 2x digital zoom
- 1.75” LCD screen with magnification for previewing photos
- 8MB internal flash memory; CompactFlash memory card expansion slot for additional memory
- Automatic focus, exposure and image controls
- USB connection directly to PC or Mac

Price: $199

Minolta DiMAGE S304
PRODUCT FEATURES
- 3.34-megapixel CCD for high-resolution images
- 3x optical/2x digital zoom
- 1.8” color TFT LCD monitor and real-image zoom viewfinder
- High-performance autofocus and autoexposure
- Simple menus displayed on LCD monitor
- USB interface for easy connection to PC or Mac
- 16MB CompactFlash card included

Price: $499

Hewlett-Packard PhotoSmart
PRODUCT FEATURES
- 4.0-megapixel CCD for high-resolution images
- 3x optical/3.6x digital zoom lens
- 1.8” color LCD monitor
- Take stills or record AVI movies
- Through-the-lens (TTL) autofocus, AF lock and manual focus
- Shooting modes: pan-focus, portrait, landscape, night scene and auto plus these photo effects: sepia, vivid, neutral and black-and-white
- Built-in flash with red-eye reduction
- Store images on CompactFlash memory cards
- USB connection directly to PC or Mac

Price: $799