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A great deal of research in consumer decision making and social cognition has explored consumers' attempts to simplify choices by bolstering their tentative choice candidate and/or denigrating the other alternatives. The current research investigates a diametrically opposed process, whereby consumers complicate their decisions. The authors demonstrate that to complicate their choices, consumers increase choice conflict by overweighting small disadvantages of superior alternatives, converging overall evaluations of alternatives, reversing preference ordering, and even choosing less preferred alternatives. Furthermore, the results from five studies support a unifying theoretical framework: the effort-compatibility principle. Specifically, the authors argue that consumers strive for compatibility between the effort they anticipate and the effort that they actually exert. When a decision seems more difficult than initially expected, a simplifying process ensues. However, when the decision seems easier to resolve than anticipated (e.g., when consumers face an important yet easy choice), consumers artificially increase their effort.

Keywords: complicating behavior, predecisional processing, metacognition, choice conflict, bolstering

Complicating Choice

No question is so difficult to answer as that to which the answer is obvious.

—George Bernard Shaw

Decisions are typically construed as resolutions that follow active deliberation. For example, Merriam-Webster's online dictionary (www.merriam-webster.com) defines a "decision" as "a determination arrived at *after consideration*" (emphasis added). Thus, a certain degree of consideration or deliberation is necessary to reach a decision. But how much deliberation is enough? A great deal of research in behavioral decision theory and social cognition indicates that consumers limit their deliberation and simplify their decisions to make easy, confident, and justifiable choices. For example, previous research has shown that consumers

bolster their tentative choice candidate and/or denigrate the other available options (for a comprehensive review, see Brownstein 2003).

Although simplifying processes in decision making are important and ubiquitous, the current research demonstrates that under certain conditions, consumers actually complicate their choices and bolster inferior options. Specifically, when consumers make important choices, they are motivated to engage in a deliberate decision process that adequately vets the chosen alternative. Consequently, when an important decision seems too easy, consumers artificially reconstruct their preferences in a manner that increases choice conflict.

Complicating decision processes are diametrically opposed to well-documented simplifying and justification processes. Although complicating behavior may seem contradictory to much of the existing literature, in this article, we propose and empirically support a unifying effort-compatibility framework that accounts for simplifying, complicating, and the continuum between these two phenomena. This unifying framework postulates that consumers strive for compatibility between the effort they anticipate and the actual effort they invest in the decision. Accordingly, when a decision seems more difficult than initially anticipated, a simplifying process ensues. Conversely, when a decision is easier to make than originally anticipated, consumers artificially

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increase their deliberation and decision effort. We demonstrate that to artificially create choice conflict, consumers (1) overweight small disadvantages of superior alternatives, (2) converge their overall evaluations of alternatives, and (3) reverse the ordinal value of attribute levels. Notably, such distortions disappear after the choice is made and the need to engage in duly diligent deliberation ceases.

We review the extant literature on simplifying decision processes and then develop and position our conceptual framework. We demonstrate the existence of complicating decision processes in Study 1 and directly investigate the underlying psychological mechanism—namely, effort compatibility—by manipulating the anticipated and experienced effort (Studies 2a–2c) and employing a mediation analysis (Study 3). In Studies 4 and 5, we investigate the impact that complicating behavior has on preference construction and ultimate choice. We conclude by discussing the implications of our framework for consumer researchers and marketing managers.

SIMPLIFYING DECISION PROCESSES

A voluminous literature has demonstrated that after making choices (i.e., in the postdecisional phase), consumers increase their valuation of the chosen alternative and denigrate their valuation of the forgone alternatives (Festinger 1957). In addition, research has shown that, even before finalizing their decisions, consumers bolster their impending choices (for a review, see Brownstein 2003). For example, consumers often engage in selective information processing that favors one alternative at the expense of others. Bolstering one of the alternatives and/or denigrating the others decreases the choice conflict and facilitates easier, more confident choices. Prior research has analyzed and demonstrated such biased processing of choice alternatives in the predecisional phase. This research includes choice certainty theory (Mills 1968), conflict theory (Janis and Mann 1977; Mann, Janis, and Chaplin 1969), search for dominance structure (Montgomery 1983), motivated reasoning (e.g., Kunda 1990), motivated judgment (e.g., Kruglanski 1990), motivated inference (e.g., Pyszczynski and Greenberg 1987), confirmation bias (e.g., Lord, Ross, and Lepper 1979), distortion of information (e.g., Russo, Medvec, and Meloy 1996), and choice under incomplete information (e.g., Kivetz and Simonson 2000).

Research in behavioral decision theory suggests that consumers might not always try to simplify and bolster their choices. Specifically, a motivation to make accurate decisions can attenuate the use of heuristics and simplifying processes (e.g., Payne, Bettman, and Johnson 1988). For example, increased accuracy motivation reduces or even eliminates anchoring and insufficient adjustment, primacy effects, and the fundamental attribution error (Kruglanski and Freund 1983; Tetlock 1985). Similarly, Russo, Meloy, and Wilks (2000) find that informing consumers that they will have to justify their decisions to others attenuates predecisional bolstering.

Thus, previous research has identified situations in which consumers simplify, or avoid simplifying, their decisions. In this study, we examine a diametrically opposed behavior, whereby consumers actually make their decisions harder. Thus, the distinction between “not simplifying” and “complicating” is important: Whereas the former is characterized

by the mere attenuation of various simplifying biases, the latter represents a distinct set of complicating processes that introduce a different type of bias by making the decision more effortful than it needs to be.

COMPLICATING DECISION PROCESSES

Recent research has supported the notion that consumers might be attracted to more difficult decisions. For example, Liu and Simonson (2009) demonstrate that when faced with relatively unattractive alternatives, consumers are more likely to purchase a product when it is selected from a choice set that elicits greater conflict. Labroo and Kim (2009) document more favorable evaluations of a stimulus that is considered a means to a goal when that stimulus is less visually fluent. They explain this result as a metacognitive inference that the less fluent and harder-to-process stimulus is more instrumental for goal attainment.

Although the aforementioned research demonstrates that consumers react positively to more effortful situations, the choice difficulty in those studies was generated by the experimenter or the choice context. In the current article, we argue that consumers are not only attracted to difficult decision processes but at times may endogenously try to enhance their decision effort (i.e., complicate their choices). We propose that to increase their decision effort, consumers may artificially enhance the decision conflict and trade-off difficulty in the choice set at hand by bolstering the less attractive alternatives in the set and denigrating the leading alternative. For example, enhancing trade-off could be achieved by overweighting small disadvantages of (and attributes that oppose) the leading alternative and/or underweighting the large advantages of (and the attributes that favor) the leading alternative. Consumers may also reconstruct their preference ordering of attribute levels in a direction that detracts from their tentatively preferred alternative. Because such complicating decision processes are intended to ensure proper vetting of choice options, we expect them to occur only during the predecisional phase. After a choice is made, the need for conflict enhancement behavior should disappear.

A SYNTHESIS: THE EFFORT-COMPATIBILITY FRAMEWORK

If, as we argue, consumers sometimes simplify and at others times complicate their decisions, a question that naturally arises is, What determines which of these opposing processes will dominate? Building on prior research on “satisficing” and effort-accuracy trade-offs (Payne, Bettman, and Johnson 1988; Simon 1957), we propose that consumers strive for compatibility between the effort they anticipate and that which they experience in making the decision. More specifically, we predict that consumers will complicate their decision making when a decision seems easier than what they had anticipated for the type of impending choice and simplify their decision making when they believe that a decision is harder than what they had anticipated.

The anticipated, and experienced, effort might vary as a result of several factors, such as the level of similarity and comparability among alternatives (Greenleaf and Lehmann 1995; Johnson 1984), the type and amount of choice conflict (Barker 1942; Chatterjee and Heath 1996; Miller 1944), the importance of the decision and the level of

accountability (Lerner and Tetlock 1999), the anticipated regret and degree of commitment (Janis and Mann 1977), and the effort invested by others (Kivetz and Zheng 2006). In the current article, we operationalize the experienced choice difficulty in several ways. For example, we construct choice sets with either high or low utility differences (or overall evaluation) between the alternatives. Consistent with previous literature, we define the degree of choice conflict as the difference between the utilities of the alternatives. A larger utility difference between alternatives represents an easier choice because the consumer can more easily identify a preferred alternative (i.e., the one with greater utility). In contrast, a choice set with a smaller utility difference between alternatives represents a more difficult choice because the trade-offs are more intense and it is harder for the consumer to identify the preferred alternative (e.g., Chatterjee and Heath 1996; Tyebjee 1979). Specifically, given attribute weight measures for the set of J binary attributes the implied utility difference between the two alternatives can be calculated as follows¹:

$$(1) \quad U_{\text{diff}} = |U_A - U_B| = \sum_{j=1}^J W_j (I_{Aj} - I_{Bj}),$$

where W_j is the weight the decision maker attaches to attribute j , such that $\sum_{j=1}^J W_j = 100$, and I_{Kj} is a dummy variable that equals 1 if alternative K carries the consumer's most preferred level of attribute j and 0 if otherwise. Next, we detail our main hypotheses regarding consumers' simplifying or complicating behavior during different phases of the decision-making process.

Easier-Than-Anticipated Decisions

As discussed previously, we predict that consumers will pursue complicating decision processes when they believe that a choice is easier than what was anticipated. In particular, we expect that consumers will distort the attribute weights in a manner that weakens the tentatively preferred alternative and strengthens the other (nearly dominant) alternatives. We also predict that after the choice is made, the need to regulate effort becomes irrelevant, and complicating behavior will not be observed. Accordingly, we offer the following hypotheses, which Figure 1, Panel A, represents visually:

- H_1 : (a) In the predecisional phase of an easier-than-anticipated decision, consumers distort their attribute weighting in a direction that enhances their choice conflict and decreases the utility difference between the alternatives. (b) In the postdecisional phase of an easier-than-anticipated decision, the distortions in attribute weighting observed in the predecisional phase is attenuated.

Harder-Than-Anticipated Decisions

Consistent with a great deal of prior research, we predict that consumers will pursue simplifying processes when they believe that a decision is harder than what they anticipated for the choice at hand. Specifically, we expect that consumers will distort their weighting of different attributes in a manner that bolsters one of the alternatives and denigrates

others (e.g., Janis and Mann 1977; Mills 1968; Montgomery 1983; Russo, Medvec, and Meloy 1996; Svenson 1992). This simplifying process will lead to a reduction in choice conflict during the predecisional phase, as indicated in a higher utility difference between the alternatives. In addition, consistent with cognitive dissonance, after consumers make the difficult choice (i.e., in the postdecisional phase), the distortion in attribute weighting will persist in a manner that further bolsters the chosen alternative (see Figure 1, Panel B).

STUDY 1: COMPLICATING VERSUS SIMPLIFYING BY DISTORTING ATTRIBUTE WEIGHTS

In Study 1, respondents made choices between alternative physician services. A pretest indicated that most respondents perceived such a decision as highly important. Study 1 tests H_{1a-b} and examines both pre- and postdecisional processes in addition to both easy and difficult choices, holding the degree of anticipated effort constant.

Method

Two hundred twenty-five students from a large East Coast university were presented with two alternative physician services.² The physician services were described along three attributes that assumed one of two levels: (1) office hours that either did or did not include evenings and weekends, (2) average waiting time of either three or ten days for a physician appointment, and (3) home visits either included or excluded. To construct an easy versus difficult choice set, we conducted a pretest (for details, see Pretest 1 in the Appendix) that measured the relative importance of the three attributes using a constant sum allocation task (of 100 points). The average importance of the three attributes was 48, 41, and 11, respectively. Using these attributes, we constructed two choice sets to generate low- and high-difficulty choices (see Table 1).

In the low-difficulty choice set, one alternative dominated the other on the two most important attributes (Attributes 1 and 2). Conversely, in the high-difficulty choice set, each alternative offered a higher level on only one of the important attributes, creating a trade-off between the two most important attributes. A pretest (for details, see Pretest 2 in the Appendix) confirmed that respondents rated the high-difficulty choice set as being significantly more difficult than the low-difficulty choice set. Furthermore, the majority of the respondents rated the high-difficulty choice set as being harder than anticipated (greater than the scale's midpoint) and the low-difficulty choice set as being easier than anticipated.

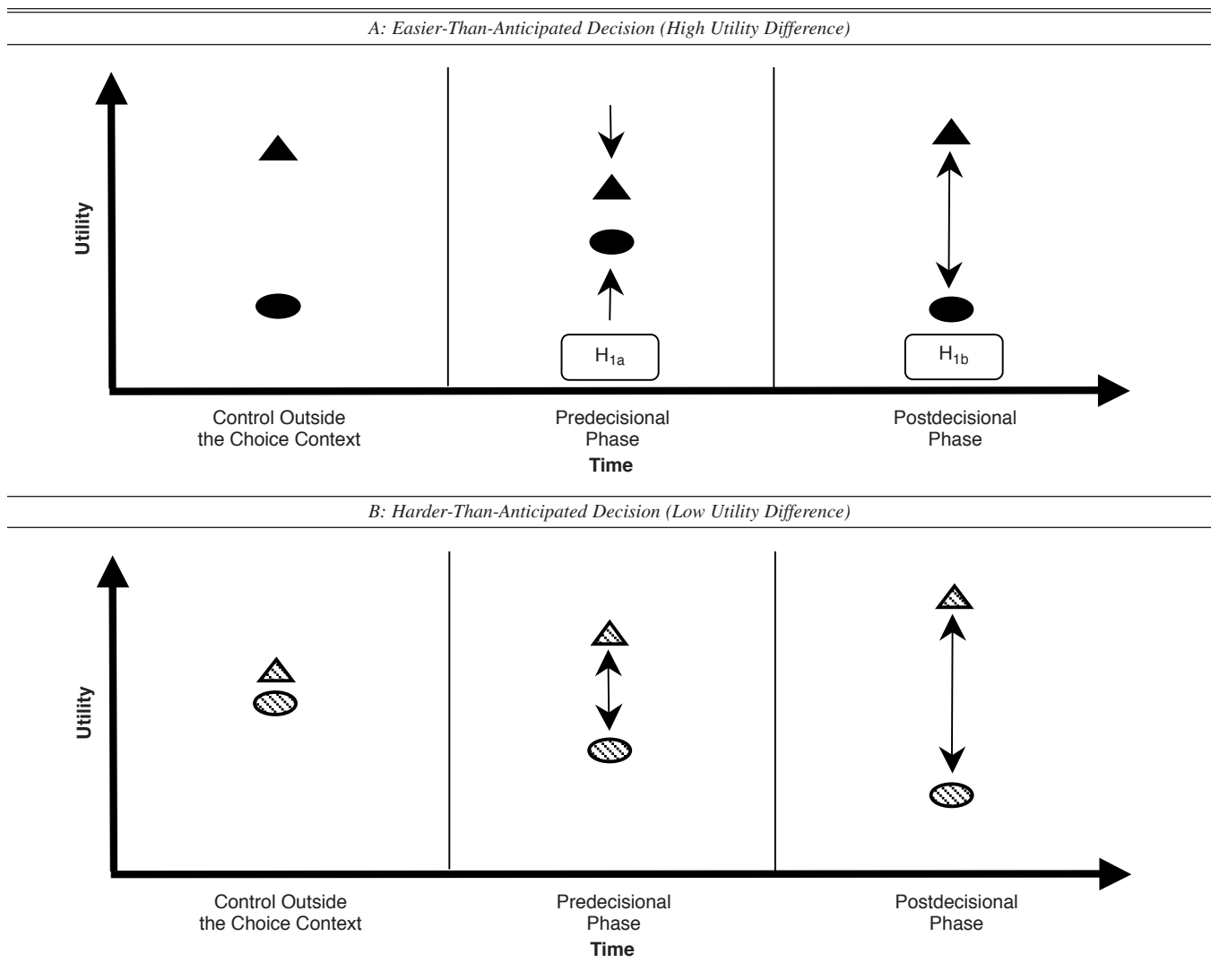
Main Study

To test our hypotheses, we collected attribute weight measures (using a constant sum allocation of 100 points) for the three binary attributes described previously. Across the different experimental conditions, we varied the phase during which the attribute weights were measured. The study consisted of a 2 (choice difficulty: low vs. high) \times 4 (time of measuring attribute weights: control vs. predecisional vs. postdecisional vs. no choice) between-subjects design. In

¹Note that the utility difference equation could be readily expanded to more than two attribute levels.

²We excluded eight respondents from the analysis because they rated the decision as extremely unimportant. (The number of excluded respondents was equally distributed across conditions.) Analysis that included these respondents did not substantively change the results.

Figure 1
DISTORTIONS DURING DIFFERENT DECISIONAL PHASES



Notes: Triangles and ellipsoids represent the chosen and nonchosen alternatives in the sets, respectively.

Table 1
LOW- AND HIGH-DIFFICULTY CHOICE SETS USED IN STUDY 1

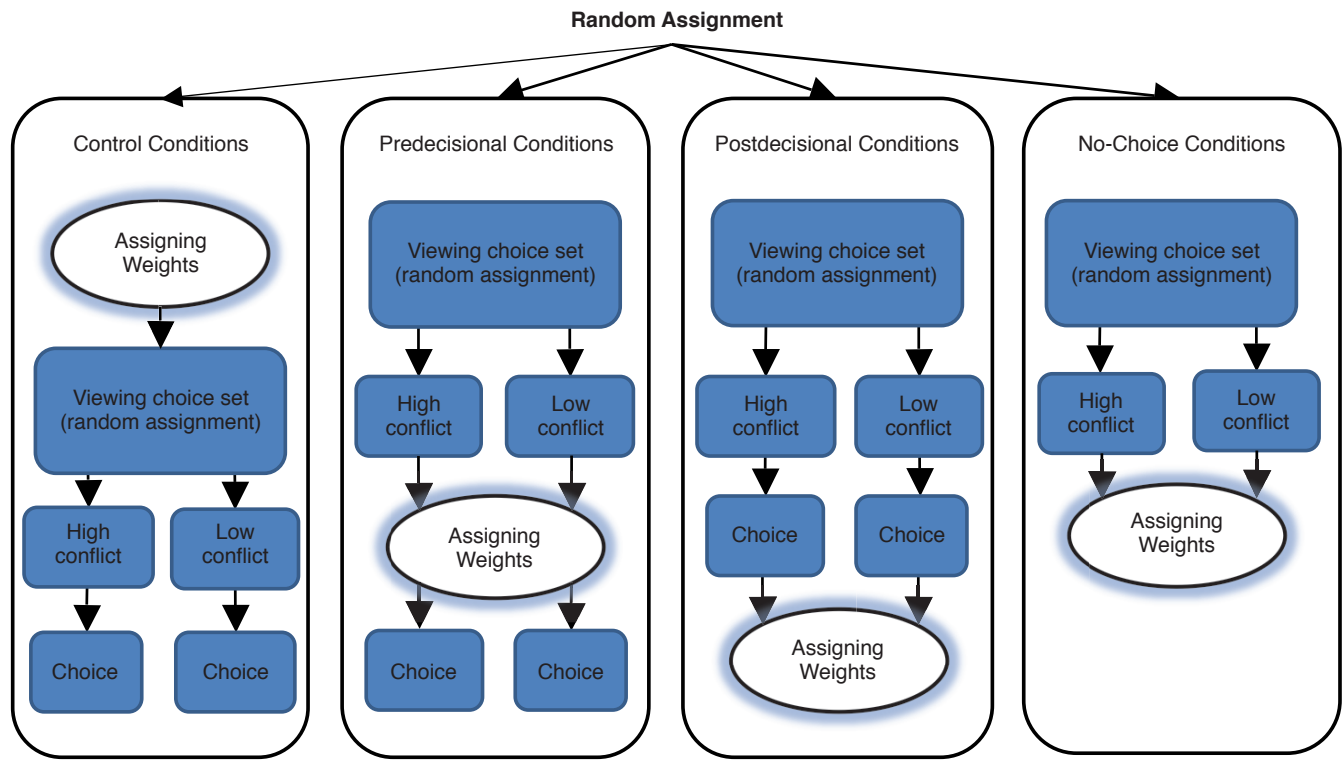
Attributes	Low Difficulty		High Difficulty	
	Alternative A	Alternative B	Alternative A	Alternative B
Evening and weekend office hours included	Yes	No	Yes	No
Average time to schedule an appointment	Three days	Ten days	Ten days	Three days
Home visits	No	Yes	No	Yes

the control conditions, respondents indicated their attribute weights before observing any choice task. Therefore, these respondents were not influenced by the manipulation of choice difficulty when indicating their attribute weights.³ We compared the attribute weights (and the implied utility differences) assigned in the control condition with the

attribute weights collected during and after the choice was made (i.e., the pre- and postdecisional phases, respectively). In the predecisional conditions, respondents were first presented with the choice set (low or high choice difficulty, manipulated between-subjects) and were then instructed to assign attribute weights before making their choice. In the postdecisional conditions, participants were asked to assign attribute weights immediately after making their choice (from a low- or high-difficulty choice set). Figure 2 illustrates the sequence of events in each of the conditions.

³In subsequent analyses, we combined the attribute weights collected in the two control conditions (low- and high-difficulty choice sets) because, as expected, we found no difference between the attribute weights in these two conditions ($p > .7$).

Figure 2
EXPERIMENTAL DESIGN AND SEQUENCE OF EVENTS IN EACH CONDITION OF STUDY 1



Results

Utility differences. We calculated an implied utility difference between the two alternatives for each respondent using the assigned attribute weights, following Equation 1. Note that because we calculated the utility difference using constant sum allocations, its range (in absolute value) could vary between 0 and 100. Higher utility differences indicate an easier choice (because one alternative is distinctly more attractive than the other), and lower utility differences indicate a more difficult choice (because the two alternatives are valued similarly).

Manipulation check. To validate our choice difficulty manipulation, we calculated the average utility difference for the low- and high-difficulty choice sets for participants assigned to the control condition (outside any motivation to simplify or complicate the choice). As we expected, the average calculated utility difference was significantly higher for the low- than the high-difficulty choice set ($M_{low} = 78.2$ vs. $M_{high} = 28.1$; $F(1, 216) = 72.9, p < .01$). Furthermore, for all respondents, the calculated individual-level utility difference for the low-difficulty choice set was greater than the utility difference for the high-difficulty choice set, thus ruling out aggregation bias (Hutchinson, Kamakura, and Lynch 2000).

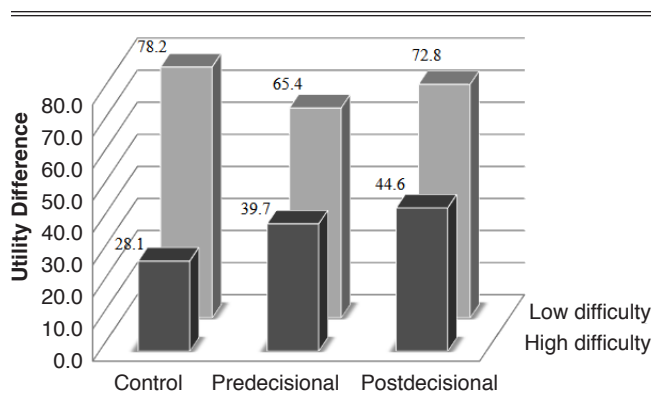
High-difficulty choices. The dark bars in Figure 3 depict the average utility differences elicited from respondents assigned to the high-difficulty choice set. Consistent with prior research on simplifying behaviors, when respondents considered a high-difficulty choice set, their utility difference between the two alternatives was significantly greater

in the predecisional condition than in the control condition ($M_{control} = 28.1$ vs. $M_{pre} = 39.6$; $F(1, 216) = 4.0, p < .05$). That is, when respondents faced a harder-than-anticipated choice, they simplified their task by increasing the weight of the attributes that favored their tentatively preferred alternative. In addition, consistent with research on dissonance reduction, the utility difference further increased in the postdecisional condition. Therefore, we expect the change in utility difference going from the control to the pre- and postdecisional phases to have a monotonically increasing pattern. Indeed, we found a linear trend analysis of the utility difference in the three conditions to be positive and significant ($F(1, 216) = 7.82, p = .01$).

Low-difficulty choices. The light bars in Figure 3 depict the average utility differences observed among respondents assigned to the low-difficulty choice set. Supporting the effort-compatibility framework, the pattern of results in the low-difficulty choice conditions was substantially different from that observed in the high-difficulty choice conditions; the interaction between choice difficulty and time of measuring attribute weights was statistically significant and in the predicted direction ($F(1, 216) = 8.44, p < .01$). Consistent with H_{1a} , when respondents faced an easier-than-anticipated decision, the utility difference between the two alternatives was significantly smaller in the predecisional condition than in the control condition ($M_{control} = 78.2, M_{pre} = 65.4$; $F(1, 216) = 4.4, p < .05$). That is, respondents complicated their task by increasing their weighting of an attribute that opposed their tentatively preferred alternative. It is noteworthy that although they complicated their (easy) decision, all

Figure 3

UTILITY DIFFERENCES ACROSS THE CONDITIONS IN STUDY 1



the participants in the low-difficulty conditions eventually chose the nearly dominant alternative.

As H_{1b} predicts, the complicating behavior attenuated in the postdecisional phase. We hypothesize that the change in utility difference going from the control to the pre- and postdecisional phases follows a U-shaped pattern. That is, we expect the high utility difference in the control condition to decrease in the predecisional phase and then increase again in the postdecisional phase. A quadratic trend analysis (Keppel and Wickens 2004) approached significance ($F(1, 216) = 3.5, p = .06$), suggesting a U-shaped utility difference pattern (light bars in Figure 3). Furthermore, the utility difference in the postdecisional condition returned to levels similar to those of the control condition ($M_{\text{control}} = 78.2$ vs. $M_{\text{post}} = 72.8$; $F(1, 216) = .77, p = .4$).

Attribute weights. To examine the distortion of attribute weights directly, we analyzed the observed weight of the least important attribute (“home visits either included or excluded”), which opposed the nearly dominant alternative.⁴ Respondents assigned to the low-difficulty choice set enhanced their conflict in choice by nearly doubling the weight of the attribute that opposed their tentative (and ultimate) choice ($M_{\text{control}} = 10.8$ vs. $M_{\text{pre}} = 17.3$; $p < .05$). Because attribute weights were provided using a constant sum allocation, any increase in the weight of the home visits attribute would be accompanied by a decrease in the weights of the two attributes that supported the nearly dominant alternative (which was ultimately chosen). Moreover, consistent with H_{1b} , after respondents made their choice, the weight of the home visits attribute returned to its level in the control condition ($M_{\text{control}} = 10.8$ vs. $M_{\text{post}} = 13.6$; $p = .2$).

Study 1: Discussion

Consistent with a great deal of prior research, the findings indicate that in both the pre- and postdecisional phases, respondents facing difficult choices shifted their attribute weighting in a direction that supported their tentatively, and ultimately, chosen alternative. Importantly, we predicted and observed a different pattern of results for respondents who faced an easy yet important choice among physician

services. These respondents seemed to have increased their decision conflict and their experienced effort by distorting their attribute weighting in a manner that weakened their preferred alternative. After respondents completed their duly diligent deliberation and made a final choice, their attribute weighting reverted back to the levels observed among control respondents. Overall, the results support the effort–compatibility framework, in which consumers simplify harder-than-anticipated choices and complicate easier-than-anticipated choices.

A possible alternative explanation for the observed complicating process is a rational, or market efficiency, inference (Chernev and Carpenter 2001; Prelec, Wernerfelt, and Zettelmeyer 1997). According to the inference rival account, consumers facing a low-difficulty choice set infer that the least important attribute (opposing the nearly dominant alternative) is more critical than they initially thought because that attribute renders the two alternatives more competitive and Pareto optimal. However, this rival account cannot explain the entire pattern of observed results. Inferences should affect attribute weighting both before and after respondents make a choice (i.e., in both the pre- and postdecisional phases). In contrast, the results indicated that attribute weighting shifted against the preferred alternative only in the predecisional phase.

To examine the inference explanation further, we included in the main study a no-choice condition. Similar to the predecisional condition, in the no-choice condition respondents were exposed to the choice set before assigning attribute weights. However, unlike the predecisional condition, in the no-choice condition, respondents were not informed that they would be required to choose between the alternatives. The inference account predicts that respondents would provide similar attribute weights in the no-choice and predecisional conditions because respondents in both conditions receive similar information about the alternatives. In contrast, our conceptualization predicts that eliminating the need to choose will “liberate” respondents from the need to work harder to vet their decision fully, thereby attenuating any complicating behavior. Supporting this prediction and inconsistent with the inference account, there was no difference in attribute weighting between the no-choice and control conditions in either the low-difficulty ($M_{\text{control}} = 78.2, M_{\text{no-choice}} = 75.3$) or the high-difficulty ($M_{\text{control}} = 28.1, M_{\text{no-choice}} = 31.4$; both $ps = .6$) conditions.

STUDIES 2A–2C: DIRECT TESTS OF THE EFFORT–COMPATIBILITY PRINCIPLE

The results of Study 1 indicate that respondents simplified harder-than-anticipated choices by bolstering their preferred alternative; conversely, respondents complicated easier-than-anticipated choices by weakening their preferred alternative. These findings are consistent with the effort–compatibility framework, which suggests that simplifying and complicating decision processes are determined by the relative levels of two constructs, namely, anticipated and experienced effort. In this study, we directly test the effort–compatibility framework. Focusing our attention on low-difficulty choice sets, we examine how complicating behavior either persists or attenuates at different levels of anticipated and experienced effort.

⁴Because of space limitations, we provide all other attribute weights and their variation across decisional phases in the Web Appendix at <http://www.marketingpower.com/jmrapril11>.

On the basis of the effort–compatibility framework, we predict that in the predecisional phase of an easier-than-anticipated decision, decreasing the anticipated effort will lead to the attenuation of complicating behavior. Furthermore, holding the anticipated effort constant, we expect that increasing the experienced decision difficulty will attenuate the complicating behavior. Finally, the effort–compatibility framework implies that because decisions of greater importance are associated with higher expected effort and greater motivation to engage in a rigorous decision process, such decisions are more likely to give rise to complicating behavior. This discussion leads to the following hypotheses:

- H₂: In the predecisional phase, distortion of attribute weights in a direction that increases choice conflict (complicates) attenuates when consumers (a) anticipate the decision to be less effortful or (b) perceive the decision as being more effortful.
- H₃: In the predecisional phase, distortion of attribute weights in a direction that increases choice conflict (complicates) attenuates when consumers perceive the decision as being less important.

Next, we report three studies that test the aforementioned hypotheses.

Studies 2a–2c: Method Overview

In all three studies, respondents were presented with two alternatives, each of which were described using three binary attributes. Similar to the low-difficulty choice sets employed in Study 1, one alternative was superior on the two most important attributes but inferior on the less important attribute, giving rise to low-choice-conflict choice sets.⁵ As in Study 1, respondents were asked to allocate a constant sum of 100 points across the three attributes, reflecting the relative weight they assigned to each attribute, either before they observed the choice set (control condition) or after they viewed the choice set but before they made their choice (predecisional condition). In Study 2b, we also add a post-decisional condition, in which respondents assigned attribute weights after they made their choice.

In all three studies, we tested for complicating behavior by analyzing the weight of the least important attribute, which opposed the nearly dominant alternative. Because Studies 2a–2c employed only low-difficulty choice sets, performing such analysis is more intuitive and mathematically equivalent to the measure of utility difference (as computed in Equation 1). A higher weight assigned to the attribute opposing the nearly dominant alternative indicates a lower utility difference and a more pronounced complicating process. Table 2 provides a detailed description of the stimuli employed in Studies 2a–2c.

Study 2a (n = 64): Manipulating the Anticipated Effort (Test of H_{2a})

In Study 2a, 64 students from a large East Coast university were randomly assigned to a 2 (anticipated effort: low vs. high) × 2 (time of measuring attribute weights: control vs. predecisional) between-subjects design. After completing a nonrelated lab study, respondents were asked if they would

⁵A manipulation check examining the attribute weights in the control condition confirmed that the choice conflict in Studies 2a–2c was indeed low.

Table 2
STUDIES 2A, 2B, AND 2C: STIMULI DESCRIPTION

A: Study 2a		
Attribute (MP3 Players)	Option A	Option B
Memory	2 GB	1 GB
Battery	14 hours	8 hours
Receive radio transmission ^a	No	Yes
B: Study 2b		
Attribute (MP3 Players)	Option A	Option B
Memory	2 GB	1 GB
Battery	10 hours	5 hours
Recording option ^a	No	Yes
C: Study 2c		
Attribute (Physicians)	Option A	Option B
Evening and weekend office hours	Yes	No
Time to schedule an appointment	Three days	Ten days
Home visits ^a	No	Yes

^aThe least important attribute opposing the superior alternative.

like to receive an extra dollar for participating in a short survey that would take approximately one minute or three minutes to complete (low vs. high anticipated effort, respectively, manipulated between subjects). A pretest indicated that the actual time taken to complete this task averaged 1 minute and 48 seconds, with all respondents taking more than 1 but less than 3 minutes. The compensation-to-time ratio in both conditions was much higher than the ratio respondents experienced in the prior, nonrelated lab study; this was intended to eliminate any differences in respondents' involvement across the two conditions. Indeed, the participation rate was high in both conditions. (Only one student refused to participate.)

In the high-anticipated-effort condition ("typical completion time of three minutes"), the average weight of the attribute opposing the superior alternative was significantly higher in the predecisional condition than the control condition ($M_{\text{control}} = 10.9$, $M_{\text{pre}} = 20.9$; $F(1, 63) = 5.55$, $p < .03$). That is, in the high-anticipated-effort condition, respondents complicated their decision and increased their experienced effort by increasing the weight of the attribute that weakened their preferred alternative. Conversely, in the low-anticipated-effort condition ("typical completion time of one minute"), we observed no significant difference in the attribute weights between the predecisional and control conditions ($M_{\text{control}} = 10.3$, $M_{\text{pre}} = 6.75$; $F(1, 63) = .7$, $p > .4$). Notably, the results in the low-anticipated-effort condition were directionally consistent with a simplifying process, whereby respondents distorted their attribute weights in a manner that decreased the (already low) choice conflict. Overall, Study 2a supports H_{2a} and emphasizes the role of anticipated effort in the observed complicating behavior.

Study 2b (n = 193): Manipulating the Experienced Effort (Test of H_{2b})

In Study 2a, we directly manipulate the anticipated effort. For Study 2b, we hold the anticipated effort constant and increase the experience effort exogenously using a fluency manipulation. More specifically, in Study 2b, 193 students from a large university in northern Israel were randomly

assigned to a 2 (experienced effort: low vs. high) \times 3 (time of measuring attribute weights: control vs. predecisional vs. postdecisional) between-subjects design. To manipulate the experienced effort, we built on recent research on perceptual fluency (e.g., Schwarz 2004). Such research has demonstrated that, for example, when choice alternatives are described using degraded, difficult-to-read fonts, consumers experience greater choice difficulty and tend to defer their choices (Novemsky et al. 2007). In the context of the current research, we predict that increasing the experienced choice difficulty—by decreasing the perceptual fluency of the choice alternatives—will attenuate the tendency to complicate choices. Accordingly, the fonts used to describe the alternatives were either easy (i.e., 14-point Times New Roman font with regular character spacing) or difficult (i.e., 9-point Times New Roman font with condensed character spacing of 1 point) to read, representing low versus high experienced difficulty, respectively.⁶ A pretest confirmed that the degraded font manipulation significantly increased consumers' experienced level of difficulty and effort in choice ($p < .01$).

In the low-experienced-effort condition (easy-to-read fonts), we observed significant differences in the reported attribute weights between the control and predecisional phase conditions ($M_{\text{control}} = 10.6$, $M_{\text{pre}} = 19.8$; $F(1, 192) = 7.06$, $p < .01$). Replicating the results obtained in Study 1, respondents in this low-experienced-difficulty condition complicated their choice by nearly doubling the weight of the attribute that opposed the leading alternative in the choice set. However, in the high-experienced-effort condition (degraded fonts), we observed no significant difference in the reported attribute weights between the control and predecisional phase conditions ($M_{\text{control}} = 9.3$, $M_{\text{pre}} = 12.6$; $F(1, 192) = 1.1$, $p > .25$). These results support H_{2b} . In addition, consistent with H_{1b} , we found no significant differences between the control and postdecisional conditions in either the easy-to-read ($M_{\text{control}} = 10.6$, $M_{\text{post}} = 14.0$; $F(1, 192) = .8$, $p > .37$) or hard-to-read ($M_{\text{control}} = 9.3$, $M_{\text{post}} = 11.25$; $F(1, 192) = .38$, $p > .5$) font conditions.

Overall, the results support the role of experienced effort in the observed complicating behavior. Using a well-accepted procedure to manipulate experienced effort in choice (perceptual fluency), we found that consumers' tendency to complicate their choices was attenuated when an external source of decision effort was used to increase the experienced effort. Such external effort substituted for consumers' need to internally and artificially enhance their effort during the decision process. Next, in Study 2c, we manipulate the anticipated effort by manipulating the perceived importance of the impending decision.

Study 2c (n = 83): Manipulating the Perceived Importance of the Decision (Test of H_3)

Study 2c consists of a 2 (decision importance: low vs. high) \times 2 (time of measuring attribute weights: control vs. predecisional) between-subjects design. Respondents were asked to imagine that they were about to join a new health

plan that required them to choose a physician. Respondents in the high-decision-importance condition were asked to imagine that their choice was binding for a year and that switching physicians before the year ended would be difficult and would require paying additional fees. Conversely, respondents assigned to the low-decision-importance condition were told to imagine that their choice was not binding and that they could easily switch doctors whenever they wanted without paying any additional fees. We predict complicating behavior when respondents' anticipated effort is high (high-decision-importance condition) but not when it is low (low-decision-importance condition).

In the high-decision-importance condition (i.e., the binding choice), the weight of the attribute opposing the superior alternative was significantly higher in the predecisional phase than in the control ($M_{\text{control}} = 6.25$, $M_{\text{pre}} = 13.1$; $F(1, 82) = 6.89$, $p < .01$). Conversely, in the low-decision-importance condition (i.e., the nonbinding choice), we observed no significant difference in attribute weights between the predecisional and control conditions ($M_{\text{control}} = 9.1$, $M_{\text{pre}} = 7.7$; $F(1, 82) = .28$, $p > .5$). Therefore, framing the decision as less important attenuated the observed complicating behavior. These results support H_3 and the proposed effort-compatibility framework. More specifically, respondents who faced an important yet seemingly easy choice were motivated to complicate their decision and overweighted an attribute that opposed their ultimate choice to match the anticipated and experienced effort. This complicating process disappeared when the same easy choice was framed as less important. These findings suggest that a motivation to engage in a diligent decision process, which is particularly likely to exist when consumers make important decisions, is the psychological mechanism underlying the observed complicating behavior.

Studies 2a–2c Discussion

Table 3 summarizes the results of Studies 2a–2c. The findings provide direct support for the proposed effort-compatibility conceptualization. In addition, the results help rule out alternative explanations such as inference making and conversational norms (Grice 1975). Specifically, inference making and conversational norms cannot explain why the observed complicating behavior disappeared when the decision was framed as unimportant. Moreover, these rival accounts cannot predict the moderating effects of anticipated and experienced decision effort.

Still, Studies 1 and 2 leave open several issues. First, we captured complicating behavior only through distortions of attribute weights. Although such distortions reflect an increase in choice conflict, we might argue that such an operationalization is relatively narrow and does not reflect a broader notion of "complicating" behavior. Second, Studies 1 and 2 investigate complicating versus simplifying behavior by examining only two levels of decision difficulty (low vs. high). A more comprehensive test of the effort-compatibility principle would involve a continuous analysis that incorporates several levels of decision difficulty. Such an analysis would potentially enable us to better integrate the complicating effect with previous findings of simplifying behaviors and their attenuation (e.g., Mann and Taylor 1970). Third, Studies 2a–2c investigate the effort-compatibility framework by manipulating the relevant constructs (antici-

⁶Because the study was performed in Hebrew, this specific spacing of characters used Hebrew fonts; it might have a different impact when using English fonts. A pretest confirmed that respondents could fully read and understand the description of the alternatives in either font condition.

Table 3
STUDIES 2A, 2B, AND 2C: WEIGHT OF THE ATTRIBUTES
OPPOSING CHOICE

<i>A: Study 2a (n = 64) Stimuli: MP3 Players</i>			
	<i>Weight of "Receive Radio Transmission" Stage of Assigning Weights</i>		
	<i>Control</i>	<i>Prechoice</i>	
<i>Anticipated Effort</i>			
Low (1 minute)	10.3	6.75 ^a	
High (3 minutes)	10.9 ^b	20.9 ^{a,b}	
<i>B: Study 2b (n = 193) Stimuli: MP3 Players</i>			
	<i>Weight of "Recording Option" Stage of Assigning Weights</i>		
	<i>Control</i>	<i>Prechoice</i>	<i>Postchoice</i>
<i>Experienced Effort</i>			
Low (clear)	10.6 ^a	19.8 ^{a,b}	14.0
High (degraded)	9.3	12.6 ^b	11.25
<i>C: Study 2c (n = 83) Stimuli: Physician Services</i>			
	<i>Weight of "Home Visits" Stage of Assigning Weights</i>		
	<i>Control</i>	<i>Prechoice</i>	
<i>Decision Importance</i>			
Low (nonbinding)	9.1	7.7 ^a	
High (binding)	6.25 ^b	13.1 ^{a,b}	

Notes: Within each pane, means with the same letter are significantly different from each other at the 95% level.

pated and experienced effort). Directly measuring the anticipated effort and conducting a moderated mediation analysis can further support the hypothesized relationships between the theoretical constructs.

In the next study, we adopt Mann and Taylor's (1970) research paradigm. In particular, Study 3 (1) investigates holistic judgments (instead of attribute weights), (2) examines a continuum of choice difficulties, (3) directly measures the anticipated effort and examines its mediating role, and (4) replicates previous findings of simplifying behavior and its attenuation using a within-subject experimental design.

STUDY 3: COMPLICATING VERSUS SIMPLIFYING BY DISTORTING HOLISTIC JUDGMENTS

We built the current study on the experimental design and stimuli Mann and Taylor (1970) use: They employed a test-retest within-subject design, first asking participants to rate their liking of 12 famous paintings and then asking those participants to rerate 2 of the paintings before choosing their most preferred one. Participants faced either a difficult choice (i.e., choosing between 2 paintings that were initially rated no more than one point apart) or a relatively easy choice (i.e., choosing between 2 paintings that were initially rated at least five points apart). Mann and Taylor demonstrate that when facing a difficult choice, respondents simplified their decisions; in particular, the overall ratings of the two paintings diverged in the predecisional phase. However, when participants faced easier choices, Mann and Taylor found no significant predecisional distortions in overall liking.

At first glance, the null effect observed in Mann and Taylor's (1970) low-difficulty condition seems inconsistent with the effort-compatibility framework. If the decision was indeed relatively easy, the effort-compatibility framework should predict complicating behavior rather than attenuation of simplifying behavior. However, closer examination of the experimental design Mann and Taylor employ helps resolve this seeming inconsistency. Specifically, in both their high- and low-difficulty conditions, participants were presented with choices between two paintings that were both initially rated on the positive side of the liking scale (i.e., 8–15). Thus, even the low-difficulty condition in Mann and Taylor was moderately difficult because it used only half of the liking scale. Accordingly, the null effect in Mann and Taylor's low-difficulty condition might be consistent with the effort-compatibility framework if the (moderate) choice difficulty matched the expected effort from the painting task. An interesting question is whether Mann and Taylor would have observed complicating behavior—manifested in the convergence of evaluations—if respondents had faced even easier decisions.

To test this conjecture, we adopted Mann and Taylor's (1970) study paradigm, but we employed the entire range of choice difficulty levels. More specifically, in our study, after participants rated the exact same 12 famous paintings used in the Mann and Taylor study, they chose between 2 randomly drawn paintings from the possible set of 12 paintings. This procedure enabled us to examine the entire range of choice difficulty (for selected stimuli used in Study 3, see Figure 4). We also measured participants' anticipated effort and tested whether it mediates the observed complicating behavior.

Method

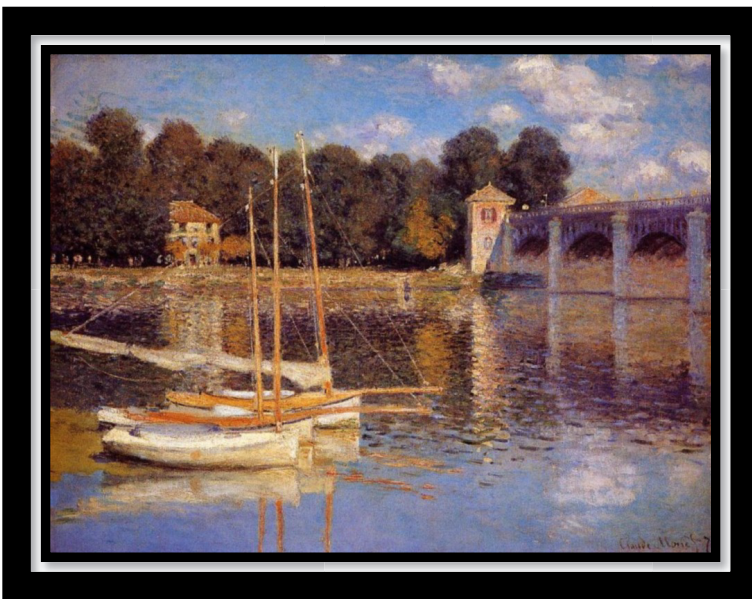
One hundred ninety-seven students from a large East Coast university participated in the study, which consisted of two main parts. In the first part, respondents rated the 12 paintings on a 1–15 liking scale (ranging from 1 = "extremely dislike" to 15 = "extremely like"), followed by a ranking task of all 12 paintings from best to worst.⁷ Next, participants were asked to imagine that they were the curators of a large museum (responsible for planning, purchasing, and managing the museum's collection of famous paintings). Then they were told to imagine that they were considering purchasing a painting for the museum's collection and that they would have to choose (based on their own preferences) between two possible paintings. To manipulate the decision's perceived importance, we adopted Jecker's (1964) procedure. Specifically, in the low-decision-importance condition, participants were told that "although you will need to make a choice between the paintings, because the museum collection is expected to expand rapidly there is an extremely good chance (around 98%) that eventually both paintings will be added to the collection." We contrasted this low-decision-importance condition with two high-decision-importance conditions: In the first, respondents were told nothing about any chance of the museum acquiring both paintings, and in the second, respondents were told that there was an extremely small chance (approximately 2%)

⁷As in Mann and Taylor (1970), we did not use the ranking data for analysis.

Figure 4
SELECTED STIMULI USED IN STUDY 3



Joie de Vivre, by Pablo Picasso



Le Pont d'Argenteuil, by Claude Monet



Jeunes Filles au Piano,
by Pierre-Auguste Renoir

that eventually both paintings would be added to the collection. We used the latter high-decision-importance condition to verify that the mere introduction of probabilities into the decision did not drive the results. As we expected, these two high-decision-importance conditions did not differ on any manipulation check or dependent variable, and therefore, we collapsed them into one condition (hereinafter, the high-decision-importance condition). The first part of the study (which did not include the actual choice between the paintings) concluded with manipulation checks in which participants rated (1) how important they perceived the decision to be on an 11-point scale (1 = “extremely unimportant,” and 11 = “extremely important”) and (2) how effortful they anticipated the decision to be on an 11-point scale (1 = “extremely effortless,” and 11 = “extremely effortful”).

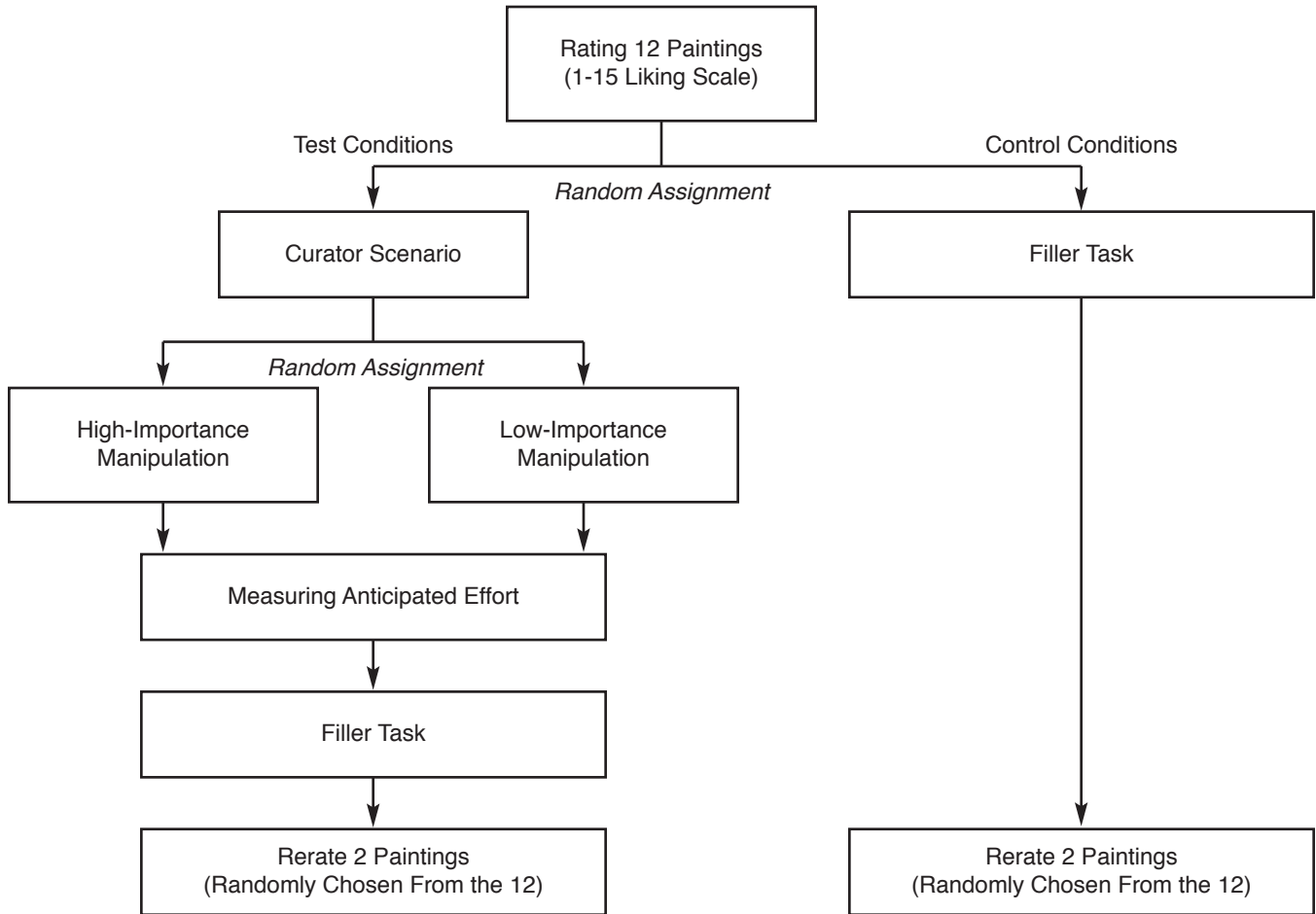
After completing several unrelated filler tasks, participants were reminded of the decision at hand and were presented with 2 paintings that were randomly drawn from the 12 paintings they rated in the first part of the study. Participants were asked to rerate the two paintings on the 15-point liking scale and then choose their preferred painting.

Similar to Mann and Taylor (1970), we included a control condition in which participants were asked to rate and rank the 12 paintings but were neither informed about an impending choice nor given any “curator” scenario or importance/anticipated-effort measures. After completing the filler tasks, participants in the control condition were asked to rerate the paintings. This procedure enabled us to account for any statistical artifacts that might have been generated by the test–retest design we employed. Figure 5 illustrates the sequence of events in each condition.

Results

Manipulation checks. Respondents’ ratings of the decision’s importance and anticipated difficulty indicated that the decision difficulty manipulation operated as intended. The perceived decision importance was significantly higher in the high- compared with the low-decision-importance condition ($M_{\text{high importance}} = 8.9$ vs. $M_{\text{low importance}} = 7.0$; $p < .001$). In addition, respondents anticipated the decision to be significantly more effortful in the high- compared with

Figure 5
EXPERIMENTAL DESIGN AND SEQUENCE OF EVENTS IN STUDY 3



the low-decision-importance condition ($M_{\text{high importance}} = 8.1$ vs. $M_{\text{low importance}} = 6.7$; $p < .001$). This result provides empirical evidence for the relationship we postulate in Study 2c between the decision's importance and its anticipated effort.

Dependent variable. As in Mann and Taylor (1970), for each participant, we calculated the absolute difference between the ratings given to the two (randomly drawn) paintings in the first part of the study ($\Delta R1$) and the second ($\Delta R2$). We define a simplifying–complicating score (hereinafter, SC score) as the change in the differences in ratings between the first and second parts of the study ($SC = \Delta R2 - \Delta R1$). The ratings in the first part of the study (before the decision-importance manipulation and before a choice was mentioned) represent a “context-independent” measure of overall liking at the individual participant level. In contrast, the ratings in the second part of the study reflect participants' preferences within the context of the impending choice (predecisional phase). If the overall liking scores of the two paintings diverged in the second part of the study, the computed SC score would be positive, indicating a simplifying behavior. In contrast, if the overall liking scores of the two paintings converged in the second part of the study, the SC score would be negative, representing complicating

behavior.⁸ We used the SC scores to investigate both the direction and the magnitude of simplifying versus complicating behaviors. We also compared the calculated SC scores in the experimental conditions with those obtained in the control condition to account for statistical artifacts (e.g., regression to the mean) that could potentially arise from the test–retest design we employed.

Independent variables. Similar to Mann and Taylor (1970), we determined the context-independent level of choice difficulty using the absolute difference in the overall liking ratings of the two paintings in the first part of the study ($\Delta R1$). The greater the difference between the liking of the two paintings (i.e., the larger is $\Delta R1$), the easier it is to choose between the two paintings. We measured the anticipated effort using respondents' self-reports on an 11-point scale.

Continuous and dichotomized analysis. We report both the results of dichotomized levels of decision difficulty as in

⁸For example, assume that a participant rated the two paintings in the first part of the study as 5 and 11 and in the second part rerated these paintings as 4 and 13. Accordingly, $\Delta R1 = |11 - 5| = 6$, $\Delta R2 = |13 - 4| = 9$, and $SC = 9 - 6 = 3$, which indicates simplifying behavior. In contrast, if the ratings in the second part were 7 and 9, the SC score would be $2 - 6 = -4$, which represents complicating behavior.

Mann and Taylor (1970) and a moderated mediation analysis using a continuous analysis. In the dichotomized analysis, we classified respondents into three levels of choice difficulty according to a tertiary split of their $\Delta R1$ scores (high-, moderate-, and low-decision-difficulty groups were .43 [SD = .5], 2.89 [SD = .77], and 6.37 [SD = 1.56], respectively). Next, to test for simplifying versus complicating behavior, we computed the SC scores across these groups in both the low- and high-decision-importance conditions (see Table 4, Panel A).

High decision difficulty. In a replication of Mann and Taylor’s (1970) results, when respondents were confronted with a difficult choice (in which context-independent ratings between the two paintings were similar), reevaluations of the paintings diverged in both the low- and high-decision-importance cells (indicating a simplifying process) and differed significantly from the control condition ($M_{low_decision_importance} = 1.65$ and $M_{high_decision_importance} = 1.66$ vs. $M_{control} = .03$; both $ps < .001$).

Moderate decision difficulty. When confronted with a moderately difficult choice (in which context-independent ratings between the two paintings were somewhat apart), respondents’ reevaluations of the paintings did not differ significantly from the pattern observed in the control condition ($M_{low_decision_importance} = .75$, $M_{high_decision_importance} = .84$, $M_{control} = .2$; $p > .18$ and $p > .2$).

Low decision difficulty. As the effort–compatibility principle predicts, when confronted with an easy decision (in which context-independent ratings between the two paintings were far apart), respondents’ behavior was determined by the level of decision importance. Specifically, respon-

dents assigned to the high-decision-importance condition complicated their decision ($M_{high_decision_importance} = -1.1$, $M_{control} = -.01$; $p < .03$). In contrast, respondents assigned to the low-decision-importance condition did not exhibit such a convergence of overall evaluations ($M_{low_decision_importance} = -.61$, $M_{control} = -.01$; $p > .2$). Thus, using the same stimuli as Mann and Taylor (1970), but using the entire scale, enabled us to construct low-difficulty choice sets and observe convergence of evaluations (i.e., complicating behavior) when the decision was framed as important and, therefore, respondents anticipated high effort.

To validate the proposed mechanism directly (i.e., the effort compatibility hypothesis), we can perform a similar analysis using the stated anticipated effort instead of the manipulated decision importance. Accordingly, we classified respondents into two groups, according to a median split of their anticipated-effort scores (high- vs. low-anticipated-effort groups were 9.24 [SD = .9] vs. 6.02 [SD = 1.21], respectively). In support of the effort compatibility hypothesis, incorporating the anticipated effort into the analysis produced a similar (and even stronger) pattern of results (see Table 4, Panel B).

We obtained a similar pattern of results when we examined the percentage of respondents who either simplified or complicated their decision. Table 5 presents the percentage of respondents with either positive or negative SC scores (i.e., indicating simplifying or complicating behavior, respectively). A significant proportion of respondents simplified their decision when they anticipated low effort but encountered a difficult decision ($M = 77\%$ vs. $M_{control} = 47\%$; $Z = 2.44$, $p < .02$). In contrast, a significant proportion of respondents complicated their decision when they anticipated high effort but encountered an easy decision ($M = 75\%$ vs. $M_{control} = 53\%$; $Z = 2.16$, $p < .03$). Furthermore, in the moderate-difficulty condition, when the need for complicating or simplifying is lower, the proportion of respondents that neither simplified nor complicated was greater than in the easy- or difficult-choice conditions ($Z = 2.18$, $p < .03$, and $Z = 4.45$, $p < .001$, respectively). In all other cells, the percentage of respondents that either complicated or simplified their choice did not significantly differ from the control condition. These results are consistent with the effort–compatibility framework, suggesting that complicating or simplifying behavior occurs when the anticipated effort and experienced difficulty do not match.

Moderated mediation analysis. Because of the known limitations of data discretization (Fitzsimons 2008), we also performed a continuous moderated mediation analysis. In particular, we predicted that respondents’ anticipated effort

Table 4
STUDY 3: SC SCORES

A: Across Levels of Difficulty and Decision Importance			
	Difficult	Moderately Difficult	Easy
Low decision importance	1.65*	.75	-.61
High decision importance	1.66*	.84	-1.1*
Control	.03	.20	-.01
B: Across Levels of Difficulty and Anticipated Effort			
	Difficult	Moderately Difficult	Easy
Low anticipated effort	1.59*	.67	.71
High anticipated effort	1.60*	.94	-2.25*
Control	.03	.20	-.01

*Significantly different from control ($p < .001$).

Table 5
STUDY 3: PORTIONS OF RESPONDENTS THAT SIMPLIFIED, COMPLICATED, OR DID NOT DISTORT

	Difficult	Moderately Difficult	Easy
Low anticipated effort	77% simplified* 14% complicated* 9% neither*	44% simplified 15% complicated 41% neither	52% simplified 29% complicated 19% neither
High anticipated effort	65% simplified 35% complicated 0% neither	43% simplified 26% complicated 31% neither	10% simplified* 75% complicated* 15% neither*

*Significantly different from control.

would mediate the effect of the decision-importance manipulation and that this mediation would be moderated by the level of choice difficulty (see Figure 6).

After mean-centering the mediator (anticipated effort), we regressed it on the independent variable (high vs. low decision importance). As we expected, decision importance had a significant, positive effect on anticipated effort ($\beta = .67, p < .0001$). Next, we regressed the dependent variable (SC score) on (1) the independent variable (decision importance), (2) the mediator (anticipated effort), (3) the moderator (decision difficulty level), and (4) the interaction between the mediator and the moderator. As we expected, lower choice difficulty (higher $\Delta R1$ levels) led to significantly lower SC scores ($\beta = -.33, p < .0001$), indicating that easier choices led to complicating behavior and more difficult choices led to simplifying behavior. Importantly, the interaction between the moderator and mediator was negative and significant ($\beta = -.11, p < .01$), indicating that when confronted with an easy choice, respondents who anticipated high effort (vs. low effort) complicated their decision. Similarly, when confronted with a difficult choice, respondents who anticipated low effort (vs. high effort) simplified their decision. Finally, the decision importance variable (high vs. low) did not approach statistical significance, indicating that the effect of decision importance was fully mediated through the anticipated-effort measure.

Study 3: Discussion

Study 3 provides additional evidence for complicating behavior and the effort-compatibility framework as an underlying psychological mechanism. First, it demonstrates complicating behavior by measuring overall liking in addition to the stated attribute weights used in Studies 1 and 2. Second, we explicitly measured anticipated effort, confirmed its relationship with decision importance, and demonstrated its mediating effect on complicating and simplifying behaviors. Consistent with the effort-compatibility framework, we observed complicating and simplifying behaviors only when there was a mismatch between the expected effort and the experienced difficulty. Third, building on and extending the work of Mann and Taylor (1970), we show the full continuum of simplifying behavior, its attenuation, and complicating behavior. Thus, we demonstrate that complicating behavior and the effort-compatibility principle are complementary, not contradictory, to previous findings. Finally,

Study 3 demonstrates complicating behavior at the individual level using a within-subject design.

Study 3 further helps rule out alternative explanations, such as inferences regarding market efficiency and conversational norms. Inferences about market efficiency are less likely in the domain of artwork because preferences for paintings and art are expected to be subjective and heterogeneous. Furthermore, a choice between any two paintings might be considered difficult for some respondents but easy for others. Knowing this, respondents should be less likely to question the experimenters' motives when confronted with what subjectively seems to be a decision that is "too easy," thus ruling out conversational norms explanations.

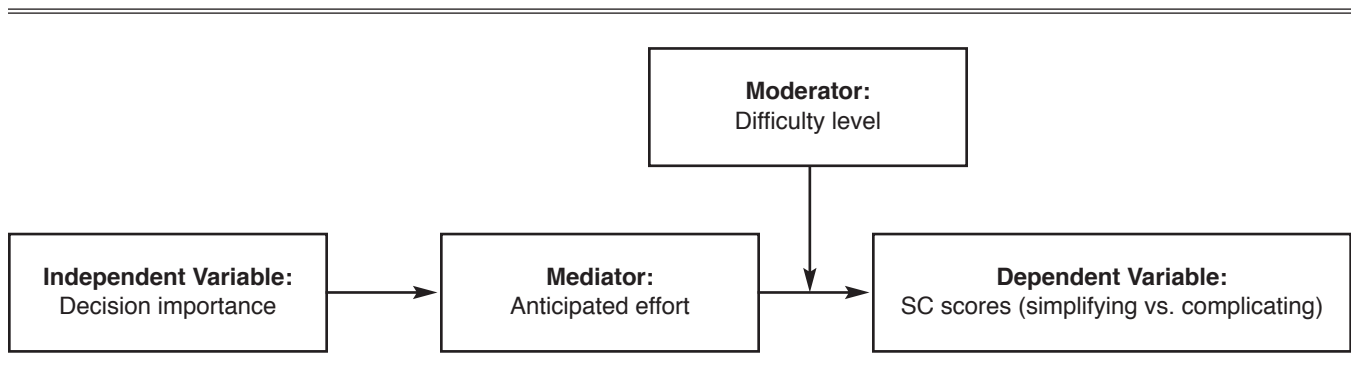
STUDY 4: COMPLICATING CHOICES THROUGH DISTORTIONS OF PREFERENCE ORDERING

The findings so far provide evidence for two types of complicating behavior: distortions in attribute weights and variations in holistic liking judgments. The next study examines a third manifestation of complicating behavior—namely, whether consumers would reverse their preference ordering of attribute levels (e.g., "more is better" would become "less is better") in a direction that detracts from a nearly dominant alternative. We hypothesize that consumers who face an important, yet relatively easy, decision will reconstrue their preference for the level of an attribute as either desirable or undesirable in a manner that weakens their preferred alternative and bolsters the other alternative. Naturally, such a preference reconstruction process is more likely to occur when the inherent (ordinal) value of the attribute is ambiguous. The discussion leads to the following hypothesis:

H₄: In the predecisional phase of an easier-than-anticipated decision, consumers reconstrue the preference ordering of attribute levels in a direction that complicates their choice and decreases the utility difference between the alternatives.

To test this hypothesis, we constructed a low-difficulty choice between two possible job opportunities, with one opportunity nearly dominating the other. We rotated, between subjects, the value of an ambiguous attribute (i.e., working in a team of three or six members) across the two alternative jobs. We elicited respondents' ordinal preference for this ambiguous attribute either before they viewed the choice set (control condition) or afterward (during the predecisional phase).

Figure 6
MODERATED MEDIATION IN STUDY 3



Method

One hundred eighty-three undergraduate students from a large university in northern Israel were presented with a choice between two job opportunities, which were described along three attributes that assumed one of two levels: (1) average salary or 10% above average salary, (2) 15- or 45-minute commute time to work, and (3) working in a team of three or six members. The dependent variable was respondents' preference for having three versus six team members, an attribute that we pretested and found to be the least important.

Using these attributes, we constructed the two low-difficulty choice sets (see Table 6). In both of these low-difficulty choice sets, one alternative was superior on the two important attributes (i.e., Attributes 1 and 2). The third attribute (number of team members) was counterbalanced between the two choice sets, such that the nearly dominant alternative had either three or six team members. In both choice sets, the two alternatives were identical on all aspects besides the three detailed attributes.

Respondents were randomly assigned to one of three conditions: a control condition or one of two predecisional conditions. In each condition, respondents were asked to indicate whether they preferred to work with three or six team members. In the control conditions, respondents indicated their preference before observing any choice task. This control condition was intended to measure the baseline preference in the sampled population for working with three versus six team members. In the predecisional conditions, respondents were first presented with one of the low-difficulty choice sets depicted in Table 6 (Choice Set 1 or 2, manipulated between subjects); then, these respondents were instructed to indicate their preference between working with three or six team members before choosing between the two job opportunities.

Results

When faced with a choice set in which the nearly dominated alternative had three team members, respondents' preference for three team members was 73%. In contrast, when respondents considered an easy choice in which the nearly dominated option had six team members, their preference for three team members decreased to 54% ($z = 2.21$, $p < .03$). In the control condition, 64% of respondents preferred working with three rather than six team members. This pattern of results supports H_4 and is consistent with the notion that, in the predecisional phase of an easy decision,

consumers reconstruct their preferences in a direction that enhances their choice conflict and decreases the utility difference between the alternatives. Furthermore, these results indicate that consumers complicate their decisions not only by shifting their attribute weighting (Studies 1 and 2) or changing their overall evaluation (Study 3) but also by reversing their preference ordering.

STUDY 5: THE EFFECT OF COMPLICATING ON CHOICE

In the studies reported thus far, although respondents complicated their decision, all eventually chose the nearly dominant alternative. In addition, in these studies, the respondents were interrupted in the middle of their natural decision process (in the predecisional phase) and were asked to indicate their attribute weights (Studies 1 and 2), overall liking (Study 3), or preferences toward an attribute level (Study 4), giving rise to potential measurement effect issues. In Study 5, we address both these concerns. First, we demonstrate that a complicating process could also influence and reverse the ultimate choice. Second, we provide evidence for complicating behavior without interrupting the decision maker's natural decision process.

Method

Seventy undergraduate students from a large university in northern Israel were presented with a choice of three job opportunities. Similar to Study 4, each alternative was described along three attributes: commute time, salary, and number of team members. Using these attributes, we constructed three alternatives (A, B, and C; see Table 7). We constructed Alternatives A and C such that choosing between them would involve a trade-off between the two most important attributes, salary and commute (Alternative A: 15-minute commute, 8% above average salary, and six team members; Alternative C: 45-minute commute, 10% above average salary, and three team members). In contrast, we constructed Alternative B to be inferior on the two most important attributes, making it an unattractive option compared with Alternatives A and C (Alternative B: 75-minute commute, average salary, and three team members). Therefore, as the results of a pretest support, choosing from the set {A, B, C} is a relatively difficult task because Alternatives A and C create a high conflict. In contrast, choosing from the set {A, B} is a relatively easy task because Alternative A nearly dominates Alternative B.⁹

Respondents were randomly assigned to one of three conditions: a simultaneous-choice control condition, a sequential-choice test condition, and a sequential-choice control condition. In the simultaneous-choice control condition, participants were presented simultaneously with Alternatives A, B, and C and were asked to choose their most preferred alternative. Because choosing between Alternatives A and C involve a relatively high level of conflict, we predicted no complicating behavior. In the sequential-choice test condition, respondents were first presented with

Table 6

TWO LOW-DIFFICULTY CHOICE SETS USED IN STUDY 4

A: Choice Set 1		
Attributes	Alternative A	Alternative B
Commute	15 minutes	75 minutes
Salary	10% above average	Average
Number of team members	6	3
B: Choice Set 2		
Attributes	Alternative A	Alternative B
Commute	15 minutes	75 minutes
Salary	10% above average	Average
Number of team members	3	6

⁹In a pretest ($n = 102$, between-subjects design), respondents rated the choice set {A, B, C} as being more difficult than the choice set {A, B} ($M_{\text{triplet}} = 3.17$, $M_{\text{binary}} = 2.16$; $p < .001$). In addition, 90% of respondents rated the binary choice set as easier than what they would anticipate (compared with only 58% in the triplet choice set; $p < .0001$).

Table 7
EXPERIMENTAL CONDITIONS AND CHOICE SHARES IN STUDY 5

<i>A: Simultaneous-Choice Control Condition</i>			
<i>Attribute</i>	<i>Alternative A</i>	<i>Alternative B</i>	<i>Alternative C</i>
Commute	15 minutes	75 minutes	45 minutes
Salary	8% above average	Average	10% above average
Number of team members	6	3	3
Choice share	87%	0%	13%

<i>B: Sequential-Choice Test Condition</i>				
<i>Attribute</i>	<i>Alternative A</i>	<i>Alternative B</i>		<i>Alternative C</i>
Commute	15 minutes	75 minutes	Delay	45 minutes
Salary	8% above average	Average		10% above average
Number of team members	6	3		3
Choice share	42%	0%		58.3%

<i>C: Sequential-Choice Control Condition</i>				
<i>Attribute</i>	<i>Alternative A</i>	<i>Alternative B</i>		<i>Alternative C</i>
Commute	15 minutes	75 minutes	Delay	45 minutes
Salary	8% above average	Average		10% above average
Number of team members	6	3		6
Choice share	82.7%	0%		17.3%

a binary choice set containing Alternatives A and B and were informed that they would have to choose between these two alternatives. However, before respondents actually made a choice, a third alternative (Alternative C) was added to the choice set, and they were asked to choose from the triplet {A, B, C}. Therefore, in both conditions, respondents eventually observed and were asked to choose from the same three alternatives. Accordingly, we should not expect to observe any difference in choice shares of the alternatives across the two conditions. However, the effort-compatibility framework predicts a difference in choice shares. Specifically, because Alternative A is superior to Alternative B on the two most important attributes, consistent with the results of Study 4, we expect respondents to bolster the attractiveness of Alternative B by constructing a preference for three rather than six team members. In addition, and consistent with Studies 1 and 2, we also expect that these respondents will increase the weight they assign to this attribute. Both these effects together should enhance the attractiveness and importance of having three team members. Moreover, both these effects would make any other alternative that offers three team members more desirable than it would have been had a complicating process not

been triggered. Therefore, Alternative C, which offers three team members, should be preferred more when a complicating process is triggered (in the sequential-choice test condition) than when it is not (in the simultaneous-choice control condition).

To control for an alternative explanation, whereby the sequential and delayed presentation of Alternative C might make it more salient and, therefore, increase its choice share, we added a sequential-choice control condition. The only difference between the sequential-choice control and the sequential-choice test conditions was that in the sequential-choice control, Alternative C included six rather than three team members. Thus, according to the complication process that entails the construction of a preference for having three team members, we should not observe an enhanced preference for a sequentially presented Alternative C when that alternative includes six rather than three team members.

Results and Discussion

Table 7 presents the choice shares across the different conditions. Consistent with our predictions, the choice share of Alternative C increased dramatically from 13% in the simultaneous choice control condition to 58.3% in the

sequential-choice test condition ($p < .01$). Furthermore, consistent with the effort–compatibility hypothesis and inconsistent with the saliency rival account, when Alternative C offered six team members in the sequential-choice control condition, we observed no difference in choice shares between the two control conditions ($p > .6$). The results of Study 5 demonstrate the impact of complicating behavior on choice. Specifically, the choice shares of an alternative increased when it offered an aspect that became more desirable because of a complicating process in the predecisional phase.

GENERAL DISCUSSION

A great deal of research has indicated that consumers limit their cognitive effort and deliberation about choices by bolstering their preferred choice alternative and/or denigrating the other alternatives. In this article, we hypothesize and empirically demonstrate that, under predictable conditions, consumers construct an effortful and deliberative decision even when such a process is normatively superfluous. We demonstrate that consumers complicate their decisions, at times even creating an illusion of choice. Such behavior may first appear contradictory to well-documented simplifying processes, such as predecisional distortion of information and postchoice cognitive dissonance. However, we test and support an effort–compatibility framework that accounts for both simplifying and complicating processes. When faced with an easier-than-anticipated decision, consumers increase the effort they invest in choice to feel that they have performed a diligent decision process.

Review of Key Findings

We propose that consumers value and strive for compatibility between the effort they anticipate and the actual effort they exert. Consistent with existing literature, when choices seemed harder than anticipated, consumers simplified their decisions. However, when choices seemed easier than anticipated, consumers complicated their decisions. We demonstrate that consumers artificially increased their experienced conflict by enhancing the importance of attributes that opposed the superior alternative (Studies 1 and 2), distorting the overall evaluation of the alternatives (Study 3), and reversing their preference ordering in a manner that intensified their choice conflict (Study 4). In addition, we show that complicating behavior, when triggered, could alter the ultimate choice (Study 5). Consistent with the proposed effort–compatibility principle, complicating behavior is attenuated when effort regulation becomes irrelevant (i.e., after the choice is finalized or when no choice is required). Furthermore, we demonstrate that introducing an exogenous source of difficulty (by decreasing perceptual fluency) attenuates complicating behavior (Study 2b). Directly manipulating consumers' expectations of high or low effort results in either a complicating or a simplifying behavior, respectively (Study 2a). We demonstrate that complicating behavior is consistent with a motivation to engage in adequate due diligence by observing complicating behavior in a decision that was framed as important but not when the same decision was framed as unimportant (Study 2c). Finally, we find that anticipated effort mediates the effect of decision importance on the emergence of complicating versus simplifying behaviors (Study 3).

Alternative Explanations

Taken together, the aforementioned studies help rule out several alternative explanations. One rival account involves inferences of market efficiency (Chernev and Carpenter 2001), whereby consumers believe that alternatives in the marketplace are likely to be Pareto optimal. According to this market efficiency inference account, respondents reconstruct their preferences in a manner that strengthens the nearly dominant alternative because they infer that the marketplace would not sustain such an alternative. However, this rival account cannot explain why respondents do not bolster the weaker alternative when (1) they weigh attributes in the postdecisional phase (Studies 1 and 2b), (2) no choice is required (Study 1), (3) an external source of decision effort is introduced (Study 2b), (4) the anticipated effort is low (Study 2a), and (5) the decision is perceived as unimportant (Study 2c). Furthermore, Study 3 provides additional support for the mediating role of anticipated effort in the observed complicating behavior. This study explores complicating behavior in a domain that is less likely to trigger market efficiency inferences (artwork). It is important to note that, for similar reasons, the results of Studies 1–5 cannot be fully explained by rival accounts based on social inference (Prelec, Wernerfelt, and Zettelmeyer 1997), conversational norms (Grice 1975), or impression management (e.g., respondents wanting to portray the outward appearance of engaging in sufficient deliberation). Overall, the current findings are consistent with a motivational (rather than an inferential) process in which consumers complicate their decisions to feel they are investing enough effort to make an adequate choice.

Relationship to Prior Research

In the current research, we demonstrate that deviations from compatibility between the experienced and anticipated effort might lead to complicating or simplifying behaviors and, accordingly, might bias preferences and choices. It is important to note that the complicating behavior reported throughout this article is not merely an attenuation of simplifying or bolstering processes, which can be explained and predicted by other theories or frameworks, such as the effort–accuracy framework. Instead, the current findings demonstrate that complicating behavior consists of a diametrically opposed bias. For example, relative to consumers' context-independent preferences (when no choice was required or no choice set was observed), simplifying resulted in the overweighting of and complicating resulted in the underweighting of attributes that supported the nearly dominant alternative, which was ultimately chosen.

The effort–compatibility framework can also help reconcile findings from prior research. First, in support of the effort–compatibility framework, we find that respondents simplified difficult choices and justified past choices by bolstering their preferred alternative. These results are consistent with a great deal of research on motivated reasoning, confirmation bias, cognitive dissonance, search for dominance, and distortion of information.

Second, previous research has demonstrated that predecisional bolstering is attenuated when decisions are relatively easy (e.g., Mann and Taylor 1970). As Study 3 demonstrates, such a null effect can be consistent with the proposed effort–compatibility principle if the decisions in these

past studies actually involved a moderate level of choice difficulty (i.e., produced a match between the anticipated and experienced effort). Indeed, a careful review of the aforementioned articles indicates that the authors used either high or moderate levels of decision difficulty, obtaining either simplifying or null effects, respectively. To the best of our knowledge, the only exception is a study that examines the impact of extremely difficult versus extremely easy decisions (Tyszka 1998). Similar to Mann and Taylor (1970), Tyszka (1998, Study 1) employs a test–retest design and examines how the evaluations of target stimuli changed before choice. Notably, the results obtained in the extremely easy condition seem to reflect complicating behavior before choice (convergence of evaluations). However, because the author did not predict this result, the design used in the study did not employ a control condition that would allow ruling out regression to the mean as an alternative explanation. As Tyszka (1998, p. 200) notes,

For the distant alternatives there was a decrease in the assessments of overall attractiveness of the chosen alternative and an increase in the assessments of overall attractiveness of the non-chosen alternatives.... Perhaps this is an effect of the regression toward average.

Third, scholars have raised the notion that deliberation can lead to worse decisions (e.g., Wilson and Schooler 1991). We argue that enticing consumers to deliberate about their decisions may generate complicating behaviors by creating an expectation that more effort is adequate to make the decision at hand. On a related note, Dijksterhuis (2004) demonstrates that respondents who carefully deliberated relatively easy yet important decisions made worse decisions than respondents who engaged in a distraction task. The author interprets this result as the benefit of unconscious thought. This finding is consistent with the effort–compatibility principle because the careful deliberation condition may have triggered complicating behavior by implying a need for investing greater effort in the decision (akin to Study 2a), whereas the unrelated task condition may have introduced an exogenous source of effort that relieved respondents from the need to complicate (akin to our Study 2b). Payne et al.'s (2008) findings support this argument; specifically, they find that respondents made better decisions when they were instructed to “choose whenever ready” (self-paced condition, which can be interpreted as a match between exerted and anticipated effort) than when they were asked to think about the problem for a long and fixed time period.

Boundary Conditions and Ecological and Managerial Relevance

The effort–compatibility principle suggests boundary conditions for both simplifying and complicating behavior. Throughout this article, we explore these boundary conditions and provide evidence for both simplifying and complicating processes. For example, as Study 3 demonstrates, the moderating role of anticipated effort suggests that simplifying and complicating behaviors are likely to occur only when there is a mismatch between the anticipated effort and the experienced choice difficulty. However, a question that may arise is, In the real world, how often do people face important yet easy decisions that could trigger complicating

behavior? Admittedly, many day-to-day decisions, such as grocery purchases, are habitual or easy to make and can often lead to simplifying behavior. However, it is the less frequent yet potentially life-changing consequential decisions, involving careers, homes, caretakers, and life partners, that motivate people to engage in due diligence and (often unnecessarily) complicate their decisions. Moreover, while the predecisional phase is short-lived in a lab setting, in real-world decisions, the predecisional phase can span a greater period of time, thus creating days, weeks, or months of deliberation and agonizing over decisions, some of which might even consist of illusory choices.

The potential duration of the predecisional phase (in which complicating behavior might take place) in real-world situations opens an opportunity for marketers, policy makers, and advisors to influence and intervene in such behavior. For example, easy or even illusory choices in the real world can stem from short-lived or expiring opportunities (e.g., a new listing of an exceptionally attractive apartment, a most eligible bachelor). Complicating behavior in such situations might carry dire consequences because people could miss an “opportunity of a lifetime.” Helping consumers overcome the need for effort regulation or providing a more constructive outlet to exert their effort might help them make better decisions. Furthermore, in decision contexts that involve sequential presentation of alternatives (e.g., buying a house using a real estate agent), the order in which the alternatives are presented may trigger simplifying or complicating behavior, which in turn may influence which alternative is eventually chosen (see Study 5). Finally, researchers could explore additional methods by which consumers might complicate their decisions. For example, consumers might look for additional information about the alternatives or search for more alternatives to prolong their decisions. In addition, consumers might selectively look for information that would increase the conflict they experience in choice so that they feel as if they have carried out a diligent decision process. Such behavior might have important theoretical and practical implications.

To summarize, the current research demonstrates that consumers not only simplify and bolster the difficult choices they make but also make harder and less appealing the obvious choices that they might “fake.” Such an “illusion of choice” can often lead consumers to agonize over (non)decisions.

APPENDIX: PRETESTS FOR STUDY 1

Pretest 1

To design easy versus difficult choices, we conducted a pretest ($n = 30$) in which respondents were asked to allocate a constant sum (of 100 points) across the three attributes used in Study 1 to reflect the relative weight that they assigned to each attribute. The average weights of the three attributes were 48 points for “office hours include evenings and weekends,” 41 points for “average time to schedule an appointment,” and 11 points for “services include home visits.” The average weight of the two most important attributes was 89%, and for all 30 respondents, the sum of the weights of these two attributes was greater than 50%.

Pretest 2

To confirm that the choice sets shown in Table 1 evoked the intended levels of difficulty, we conducted a pretest ($n = 31$) in which respondents were shown either the low- or high-difficulty choice sets and were asked to (1) rate on a seven-point scale how difficult they found the decision to be and (2) rate on a nine-point scale to what degree the decision seemed easier or harder than anticipated. As we expected, the high-difficulty choice set was rated as being more difficult than the low-difficulty choice set ($M_{\text{high}} = 4.86$ vs. $M_{\text{low}} = 2.75$; $p < .01$). Furthermore, the majority of the respondents (80%) rated the high-difficulty choice set as being harder than anticipated (greater than the scale's midpoint). Conversely, the majority of respondents (64%) rated the low-difficulty choice set as being easier than anticipated ($z = 2.67$, $p < .01$).

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