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The authors examine an important anomaly in investment behavior—namely, the tendency to fall prey to the effects of contextual and presentation biases, which emerge when people make different decisions as a function of how information is presented to them. They also identify an important factor that moderates these effects. The results from four studies show that investors with a stronger tendency to engage in predecision outcome elaboration are less susceptible to various contextual and presentation biases and are more likely to make consistent investment choices. Furthermore, the authors find that encouraging predecision elaboration on both the potential benefits and the potential risks of investing helps investors who tend not to engage in such elaboration become less influenced by peripheral cues, such as information framing and presentation mode. The findings offer implications for decision research and for the design, presentation, and communication of financial products.

Keywords: elaboration on potential outcomes, context and framing effects, investment decision making, personal finance, Morningstar Style Box

The Impact of Outcome Elaboration on Susceptibility to Contextual and Presentation Biases

Individual investors represent a large and growing part of financial markets, as a result of the availability of online investing, a growth in the number and types of investment vehicles, and a shift from the use of defined benefit to defined contribution retirement plans (Bucks, Kennickell, and Moore 2006). Thus, more consumers than ever are participating in financial markets, yet many possess only mini-

mal relevant knowledge and fail to receive appropriate training. Research has shown that investors are susceptible to many of the judgmental biases demonstrated in other decision-making domains (e.g., Lifson and Geist 1999; Shiller 2006). Because investment decisions have major implications for consumers' future financial welfare, there is a great need for research that provides insights into how ordinary consumers make investment decisions and identifies ways to improve their decision making. In this article, we use the investment context to study a broader consumer behavior anomaly—namely, the tendency to fall prey to the effects of contextual and presentation biases.

Contextual and presentation biases emerge when people make different decisions as a function of how information is presented to them, even though the substance of the information is unchanged. With a few exceptions (e.g., Grant and Xie 2007; Hamilton and Biehal 2005; Johnson, Tellis, and MacInnis 2005; Madrian and Shea 2001; Rubaltelli et al. 2005; Zhou and Pham 2004), research on these biases in the domain of investment decision making has been scarce, and more research is needed on their effects on investors' deci-

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sions. We explore why some people are more susceptible to the biasing effects of context and information presentation variations and propose a potential solution to alleviate these biases. To make thoughtful and balanced investment decisions, investors should consider both potential gains and potential losses. However, not all investors engage in such thorough predecision consideration of potential outcomes. Nenkov, Inman, and Hulland (2008) show that some people are more inclined than others to elaborate on potential outcomes when deciding how to behave. In this article, we show that investors with a stronger chronic tendency to engage in predecision outcome elaboration (i.e., are high in outcome elaboration) are less likely to fall prey to the effects of contextual and presentation biases and are more likely to make consistent investment choices.

Across four studies, we consistently find that investors who are chronically high in outcome elaboration tendencies (i.e., have a stronger tendency to elaborate on both positive and negative potential outcomes) generate more frame-inconsistent thoughts (i.e., thoughts related to the alternative frame of reference), are less susceptible to context and information presentation effects, and make more optimal investment choices than investors who are low in outcome elaboration tendencies. Furthermore, we show that elaboration on potential outcomes can be stimulated if people are encouraged to elaborate on the potential outcomes of investing before making an investment decision. Thus, our results have important implications for the design and marketing of financial products and for investor education campaigns.

We organize the remainder of the article as follows: We begin with a review of prior literature on the effects of contextual and presentation biases on choice. We then consider research related to elaboration on potential outcomes and discuss how this individual-specific construct can moderate the extent to which people are influenced by these biases when evaluating investment opportunities. Next, we present four studies that show how the tendency to engage in outcome elaboration draws attention to alternative frames of reference and attenuates the negative effects of information framing and information presentation. We conclude with a discussion of implications and suggestions for further research.

CONTEXTUAL AND PRESENTATION BIASES

A basic principle underlying expected utility theory is the principle of preference invariance, which requires that the preference order between prospects should not depend on the way they are described (Kahneman and Tversky 2000). However, research conducted over the past two decades has established that the principle of invariance is often violated and that the way problems are presented affects decision makers' preferences and choices, even when the presentations are normatively equivalent (e.g., Kahneman and Tversky 2000; Soman 2004). This phenomenon is demonstrated in two major streams of research: effects of message framing—responding differently to distinct but objectively equivalent descriptions of the same message (e.g., 10% fat versus 90% fat-free)—and effects of message presentation—responding differently to equivalent information presented in different modes (e.g., verbally, numerically, graphically)—which have been found to affect both preferences and choices. These effects are well documented in various

domains, including medical judgments (Levin, Schnittjer, and Thee 1988), consumer judgments (Sen 1998), health behaviors (Halpern, Blackman, and Salzman 1989), auditor judgments (O'Clock and Devine 1995), health promotion (Block and Keller 1995; Maheswaran and Meyers-Levy 1990), product promotion (Homer and Yoon 1992), social dilemmas (Brewer and Kramer 1986), preference reversals (Johnson, Payne, and Bettman 1988), and gambling (Erev and Cohen 1990).

In the investment decision-making context, few articles have examined the effects of contextual and presentation biases. For example, Zhou and Pham (2004) examine the effects of presenting an investment opportunity as an individual stock offered in a trading account or as a mutual fund offered as an Individual Retirement Account on consumers' sensitivities to gains and losses, while Johnson, Tellis, and MacInnis (2005) find that describing a stock trade as a buy versus sell affects investors' preferences for winning/losing stocks. Even fewer studies have been conducted on information format effects in the investment domain, though Rubaltelli and colleagues (2005) find that varying the format used to present investment returns (e.g., prices, price changes, percentages, ratios) affects the extent to which people exhibit a status quo bias in their investment decisions.

Although these context and presentation effects have been well substantiated, relatively little attention has been paid to their relationship to individual personality traits. An exception is research examining the effects of people's need for cognition (NFC) on their responses to framing effects (e.g., Simon, Fagley, and Halleran 2004; Smith and Levin 1996). The results from this research stream have been inconsistent and have led to the conclusion that "[NFC] alone does not appear to consistently moderate framing effects" (Simon, Fagley, and Halleran 2004, p. 91). Not surprisingly, researchers have advocated further investigation of the effects of individual difference variables as moderators of people's evaluation of framed messages (Levin et al. 2002; Simon, Fagley, and Halleran 2004).

In the studies that follow, we measure and test an individual trait that we argue should be a more consistent moderator of people's susceptibility to context and presentation effects. Specifically, we examine how people's tendency to elaborate on potential outcomes affects their intentions to invest in financial opportunities that are framed differently (e.g., gains versus losses) or presented in different information formats (e.g., graphically versus textually). Furthermore, we investigate whether outcome consideration can temporarily be stimulated to overcome a person's chronic tendency not to engage in such predecisional elaboration.

We focus on one particular vein of context and presentation effects—those that result from varying different aspects of the description of a focal option that people need to evaluate. More specifically, we examine four distinct examples of such effects. Study 1 examines information presentation effects in which the mode of financial information presentation is varied—graphic versus textual (information presentation study). Study 2 frames the goal of investment behaviors as approaching gains versus avoiding losses (goal-framing study). Study 3 varies the label of the difference between two mutual funds' fees by framing it as either a discount of one fund or a surcharge of the other (difference label study). Finally, Study 4 characterizes a key attribute of

a financial instrument—its past return—as a gain or loss (attribute-framing study). Responses to these different manipulations encourage adoption by the decision maker of a particular frame of reference toward the target and a lack of focus on alternative frames of reference (see Levin, Schneider, and Gaeth 1998). Across all four studies, we find that elaborating on the positive and negative outcomes of engaging in the advocated behavior attenuates (or even eliminates) people's susceptibility to these effects and helps them make better investment decisions. In Study 2, we assess the process through which elaboration on potential outcomes reduces susceptibility to such effects by collecting and analyzing cognitive response data. Furthermore, in Study 4, we show that susceptibility can be reduced for investors who tend not to engage in outcome elaboration by encouraging them to elaborate on the potential positive and negative outcomes of investing before making a decision.

PREDECISION ELABORATION ON POTENTIAL OUTCOMES

Prior research has argued that predecision deliberation creates a cognitive orientation—a “deliberative mind-set”—that facilitates the task of determining which available option is most desirable while still being feasible (Gollwitzer 1990). People in a deliberative mind-set, who weigh the pros and cons of feasibility-related and desirability-related information and the positive and negative consequences of goal pursuit, are more receptive both to information that is externally available and to information that is stored in memory (Gollwitzer and Bayer 1999).

Stable individual traits tend to make consumers more involved with deliberating options and desires. In this article, we examine one such trait: the tendency to elaborate on potential outcomes. As we discussed previously, some people have a stronger tendency than others to elaborate on the potential implications of a decision and weigh its pros and cons (Nenkov, Inman, and Hulland 2008). This tendency makes people more likely to activate a deliberative mind-set in the predecisional phase of decision making. Such a balanced consideration of positive and negative consequences can reduce the shortcomings people ordinarily exhibit when analyzing the desirability of a choice, such as employing simplified strategies or weighing positive and negative consequences differently and falling prey to framing effects.

Nenkov, Inman, and Hulland (2008) conceptualize elaboration on potential outcomes as a stable individual difference that encompasses three related dimensions: (1) a generation/evaluation dimension (the extent to which people generate a variety of potential consequences before they make a decision and evaluate the importance and likelihood of these consequences), (2) a positive outcome focus dimension (the extent to which people focus on positive consequences), and (3) a negative outcome focus dimension (the extent to which people focus on negative consequences). We focus exclusively on the first dimension of elaboration on potential outcomes, which addresses the extent to which people consider the consequences of their decisions and evaluate the probability and importance of these consequences. Such a focus is particularly important in investment decision making, in which both potential rewards and losses should be considered, because investors who are more willing to engage in a thorough, balanced predecision

elaboration on potential outcomes of a decision should be less susceptible to contextual and presentation biases.¹

STUDY 1: INFORMATION PRESENTATION VARIATION

According to rationality principles, different but equivalent information formats should not affect investment strategies and decisions. However, differences in modes of information presentation have been shown to affect decision-making behavior in various domains (e.g., Erev and Cohen 1990; Halpern, Blackman, and Salzman 1989; Johnson, Payne, and Bettman 1988; Sen 1998). Varying the information format is also likely to have important effects on investor decision making (e.g., Rubaltelli et al. 2005). We propose that providing investors with visual aids when describing mutual funds should have a greater impact on those who tend not to engage in a balanced predecision outcome elaboration (i.e., are low in outcome elaboration). Visual aids should make these people more conscious of the different asset types contained in each fund and of the potential risks and returns associated with investing in certain funds, which in turn should prompt them to create more diversified investment portfolios.

The Morningstar Style Box is a pictorial representation of the different asset types contained in a mutual fund. This widely adopted format classifies mutual funds along two dimensions into one of nine categories using a matrix-type graphic, enabling investors to assess the degree to which their set of investments spans the different types of investment categories.² By including a variety of investments that are categorized into different Morningstar Style Box classifications, an investor can create a more diversified portfolio of investments.³

Providing fund information in a visual format (i.e., Morningstar Style Box) rather than a textual format is expected to have a greater impact on the diversification efforts of low-outcome-elaboration (versus high-outcome-elaboration) investors. The visual format should make the different asset classes available in a choice set more salient to low-outcome-elaboration investors, thus providing cues to diversification and leading to the creation of more diversified investment portfolios. In contrast, high-outcome-elaboration investors, who are more likely to engage in thorough predecision elaboration on the various potential outcomes that might result from investing in each of the proposed mutual

¹Although we do not focus on the positive and negative outcome focus dimensions of the elaboration-on-potential-outcomes scale, we examined their moderating role in Studies 2, 3, and 4, which employ valence-based framing manipulations. We find that people are more willing to adopt a framed message that matches their predisposition; that is, people with a strong positive outcome focus are more persuaded to invest when a positively valenced type of framing is employed. These results suggest that a biased outcome focus has the potential to affect consumers' message evaluations. Details are available on request.

²For example, stock funds are classified according to whether the fund tends to invest in small, medium, or large cap stocks and whether the fund tends to invest in value, growth, or blended stocks.

³Although more diversification is not always better (e.g., for a discussion of naive diversification, see Benartzi and Thaler 2001), research suggests that portfolio diversification (rather than investment choices within an asset class or attempts at market timing) accounts for the vast majority of long-term investment performance (Brinson, Hood, and Beebower 1986; Brinson, Singer, and Beebower 1991). Thus, individual investors' decisions regarding asset allocation represent an important issue.

funds, should be able to discern risk/return trade-offs regardless of presentation format. Thus:

H₁: Investors with a higher (versus lower) chronic tendency to generate and evaluate potential outcomes are less susceptible to the effects of varying information presentation format.

Design and Procedure

A mail questionnaire was sent to a representative nationwide sample of 2500 households. Each questionnaire contained a single dollar bill to encourage participation. Respondents were asked to consider a scenario in which they had just begun working for a company that offered them an opportunity to invest in a 401(k) retirement plan. They were given general information about 401(k) plans and were told that they could contribute up to \$14,000 from their annual salary to the 401(k) for the current year. Respondents were then asked to indicate how much money, if any, they would invest in the 401(k) and how they would invest this money across the three available mutual funds, each of which represented one of the three major asset classes offered in 401(k) type plans: stocks, bonds, and money market funds. The funds were listed in alphabetical order.

After participants decided how much to invest and allocated the money to the available funds (i.e., asset classes), we measured their self-reported knowledge about investing (two five-point items; $\alpha = .80$; “Compared to most people, I know a lot about investing”; “Others often ask me for investing advice”) and administered the generation/evaluation dimension of the elaboration-on-potential-outcomes scale (six five-point items; $\alpha = .90$; Nenkov, Inman, and Hulland 2008, see the Appendix) and a scale measuring risk aversion (three five-point items; $\alpha = .75$; Donthu and Gilliland 1996). Finally, we collected demographic information (gender, employment status, and primary household income earner status). Of the 166 respondents who returned the questionnaire (a 15% response rate), 131 chose to invest in the 401(k) plan presented in the scenario. Of the latter group, we removed participants age 65 or older because they are above the traditional retirement age and are likely not to be concerned with investing in a 401(k) plan. Data from the remaining 113 respondents formed the basis for our analysis.

The information presentation manipulation consisted of varying the salience of diversification cues by providing (or not providing) a visual representation of the asset types contained in a fund. For this purpose, we either used Morningstar Style Boxes as visual aids to describe the mutual funds that people could choose from for their 401(k) plans or provided the information in text format (for stimuli, see Table W1 in the Web Appendix at <http://www.marketingpower.com/jmrdec09>). The dependent variable is a commonly used index of portfolio diversification, equal to one less the normalized Herfindahl index (e.g., Woerheide and Persson 1993).⁴ The index ranges in value from 0 to 1, and higher values indicate greater diversification.

Results and Discussion

To test H₁, we conducted a regression using outcome elaboration, information format (box graphic versus text),

⁴ $H = \sum_{i=1}^n s_i^2$; H normalized = $(H - 1/n)/(1 - 1/n)$, where s_i is the proportion of portfolio value invested in fund i and n is the number of funds in the portfolio.

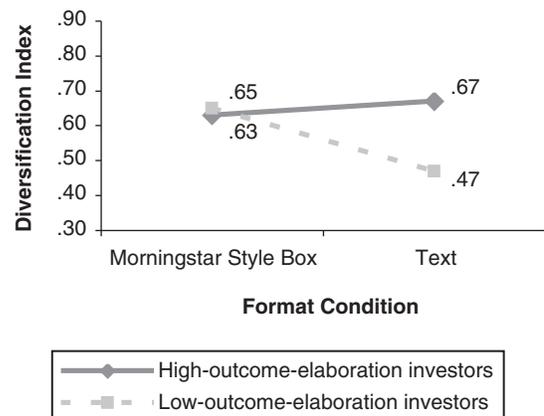
and their interaction as independent variables and knowledge about investing, risk aversion, gender, employment status, and primary household income earner status as controls to examine how well investors diversified their money across the available fund options.⁵ The results from the regression ($F(8, 104) = 3.35, p < .05; R^2 = 10\%$) revealed a significant main effect for format condition ($b = .78, t = 2.09, p < .05$) and for outcome elaboration ($b = .13, t = 2.07, p < .05$) and a significant interaction between information format condition and outcome elaboration ($b = -.19, t = -1.98, p < .05$). Subsequent analysis of the group means revealed that investors who scored high on outcome elaboration (based on a median split) were not significantly affected in their diversification by the format manipulation ($M_{\text{box format}} = .63, M_{\text{text format}} = .67; t(109) = -.52, p > .1$; see Figure 1). In contrast, low-outcome-elaboration investors created a more diversified portfolio in the Morningstar Style Box condition than in the text condition ($M_{\text{box format}} = .65, M_{\text{text format}} = .47; t(109) = 1.97, p < .05$). Thus, H₁ is supported.

The results from Study 1 show how people’s outcome elaboration tendencies affect their susceptibility to the effects of varying information presentation formats for investment options. When mutual fund descriptions included Morningstar Style Boxes rather than similar information presented in textual form, low-outcome-elaboration investors significantly increased their portfolio diversification. Employing the box format had no effect on the high-outcome-elaboration group. This supports our hypothesis that this latter group engages in a risk/benefit assessment and discerns the value of considering different asset classes regardless of information format, while the low-outcome-elaboration group is affected by the nature of the information presentation.

In Study 2, we analyze the underlying process through which investors’ outcome elaboration tendencies mitigate their susceptibility to contextual and presentation biases. We

⁵For each study, we report the correlations between elaboration on potential outcomes and other main predictor variables in Table W2 in the Web Appendix (<http://www.marketingpower.com/jmrdec09>).

Figure 1
STUDY 1: CHRONIC OUTCOME ELABORATION ELIMINATES DISTORTION FROM VARYING INFORMATION PRESENTATION FORMAT



elicit participants' cognitive responses in addition to their evaluations to provide direct evidence that high-outcome-elaboration people, who are less susceptible to such biases, are more likely to spontaneously generate alternative frames of reference.

STUDY 2: BEHAVIOR GOAL VARIATION

Prior research has found that emphasizing either the positive consequences of undertaking an act to achieve a particular goal or the negative consequences of not undertaking the act influences subsequent judgment and choice (e.g., Block and Keller 1995; Brewer and Kramer 1986; Homer and Yoon 1992; Maheswaran and Meyers-Levy 1990). Researchers have also begun to investigate the effects of activating different goals on investment decisions (Hamilton and Biehal 2005; Zhou and Pham 2004). However, goal framing has not always produced consistent effects, and researchers have sought individual moderators that might explain these inconsistencies (e.g., Maheswaran and Meyers-Levy 1990; Shiv, Britton, and Payne 2004). Rothman and Salovey (1997) also call for more research examining the relationship between goal framing and stable psychological traits. In this study, we examine how consumers' outcome elaboration tendencies interact with the effects of goal framing to affect their intentions to invest in an advertised mutual fund. We expect to find significant goal-framing effects for low-outcome-elaboration investors but not for high-outcome-elaboration investors. High-outcome-elaboration investors are more likely to engage in a thorough predecision elaboration of the potential implications—both positive and negative—of the advertised investment behavior, which will draw their attention to the different goals the advocated behavior might fulfill (i.e., achieving gains, avoiding losses), making both goals salient. Because these high-outcome-elaboration investors focus on both the goal emphasized by the message and the alternative goal, their evaluation of the investment offer will not reflect goal-framing effects. Thus:

H₂: Investors with a higher (versus lower) chronic tendency to generate and evaluate potential outcomes are less susceptible to goal-framing effects.

We argue that elaborating on the positive and negative outcomes of engaging in an advocated behavior helps people focus not only on the frame of reference made salient by the framing manipulation but also on the alternative frame of reference. We experimentally test this argument by examining investors' thought processes to provide evidence that consumers with strong (versus weak) outcome elaboration tendencies spontaneously generate more alternative frames of reference. We expect that high-outcome-elaboration (but not low-outcome-elaboration) investors will generate more frame-inconsistent thoughts, though there should be no difference in the number of frame-consistent thoughts.

H₃: Investors with a higher (versus lower) chronic tendency to generate and evaluate potential outcomes generate more frame-inconsistent (versus frame-consistent) thoughts in response to the investment offer.

Design and Procedure

One hundred two undergraduate students (49 women) were randomly assigned to either a gain (i.e., positive framing) or a nongain (i.e., negative framing) condition. For their participation, respondents were entered in a lottery for several gift certificates from a large online retailer. Each respondent was given a booklet that described a decision scenario asking them to imagine that they had \$5,000 available and to evaluate an investment opportunity. The investment opportunity was a mutual fund offered by the fictional Financial Investment Corporation, whose description was varied across the two conditions to emphasize either the gains that investing in the fund might provide (positive framing) or the gains that a person might fail to realize by not investing in the fund (negative framing). The advertised mutual fund had an average return of 9.3% over the past ten years (for stimuli, see Table W3 in the Web Appendix at <http://www.marketingpower.com/jmrdec09>). All respondents were told that they could choose to invest all or some of the available \$5,000 in the advertised fund or choose to use the money for other things and that gains and losses were to be realized in one year. The dependent measure in this study is the likelihood of investing in the advertised mutual fund (1 = "not likely at all," and 9 = "very likely"). Next, we assessed participants' cognitive responses by asking them to list the things that went through their minds while they were evaluating the investment offer (Cacioppo and Petty 1981). As Cacioppo and Petty (1981) recommend, we administered the thought-listing procedure after the outcome variable.

Measures

After measuring participants' intentions to invest in the advertised mutual fund, we measured a set of potential confounds and covariates: perceived risk, extent of cognitive elaboration, issue involvement, self-efficacy beliefs, and feelings of threat and fear.⁶ We also collected demographic information, along with measures of knowledge about investments. We included two manipulation check questions that asked participants whether the message stressed the positive implications of investing in the mutual fund or whether it stressed the negative implications of not investing in the fund (Block and Keller 1995).

Next, as part of a seemingly unrelated study involving completion of a different questionnaire, we measured the generation/evaluation dimension of the elaboration-on-potential-outcomes scale (six seven-point items; $\alpha = .84$) and risk aversion (three seven-point items; $\alpha = .71$) using the same scales as in Study 1. We also included a measure of participants' NFC (five seven-point items; $\alpha = .82$; Cacioppo and Petty 1982)⁷ to control for this individual trait, which has been examined in the past as a moderator of framing effects (e.g., Simon, Fagley, and Halleran 2004).

⁶Details on the potential confound variables tested in Studies 2, 3, and 4 are available in Table W4 in the Web Appendix (<http://www.marketingpower.com/jmrdec09>).

⁷We used a short version of the scale developed by Wood and Swait (2002).

Results and Discussion

Manipulation check. As we expected, participants perceived the fund description as emphasizing the positive consequences of investing to a greater extent in the positive condition ($M = 6.9$) than in the negative condition ($M = 4.6$; $t(100) = -5.06, p < .01$) and the negative consequences of not investing to a greater extent in the negative condition ($M = 7.3$) than in the positive condition ($M = 3.5$; $t(100) = 9.53, p < .01$). Thus, the goal-framing manipulation was successful.

Thought-listing protocols. Two independent judges, who were unaware of the study hypotheses, coded participants' thought listings as frame-consistent ($M = 1.18, SD = 1.01$), frame-inconsistent ($M = .85, SD = .88$), or frame-unrelated ($M = 1.95, SD = 1.49$). For example, the thought "I can make money" would be classified as frame-consistent in the positive framing condition but as frame-inconsistent in the negative framing condition. A thought such as "I need more information" would be coded as frame-unrelated. Interrater agreement was 90% for frame-consistent thoughts, 91% for frame-inconsistent thoughts, and 91% for frame-unrelated thoughts, and disagreements were resolved through discussion. Kappa coefficients also verified that agreement between the two raters exceeded that expected by chance (for frame-inconsistent thoughts, $.86, p < .001$; for frame-consistent thoughts, $.87, p < .001$; and for frame-unrelated thoughts, $.87, p < .001$).

Test of hypotheses. To test H_2 , we ran a regression on intention to invest in the advertised fund, using goal framing, outcome elaboration, and their interaction as independent variables and perceived self-efficacy, perceived risk, risk aversion, knowledge about investing, and gender as controls ($F(8, 91) = 2.91, p < .01$; $R^2 = 20\%$). The results show significant main effect of goal framing ($b = -3.40, t = -2.83, p < .01$) but not of outcome elaboration ($b = -.02, t = -.07$, not significant). Of the control variables, only self-efficacy beliefs had a significant effect on the dependent variable ($b = .42, t = 3.27, p < .01$). As we predicted, the results also revealed a significant two-way interaction between framing and outcome elaboration ($b = .56, t = 2.60, p < .01$; see also Table W5 in the Web Appendix at <http://www.marketingpower.com/jmrdec09>).⁸

⁸Because involvement, depth of processing, and NFC have been examined as moderators of framing effects in the past, we conducted additional tests to rule them out as alternative explanations for our findings. Detailed results of these tests for Studies 2, 3, and 4 are available in Table W5 in the Web Appendix (<http://www.marketingpower.com/jmrdec09>). For all three studies, the results reveal no significant interactions of these variables with framing ($ps > .1$) and confirm that the focal interaction between elaboration on potential outcomes and framing remains significant when interactions between these variables and framing are included in the regressions, which rules out these variables as alternative explanations.

Additional analysis of the group means revealed that, as we predicted, intentions to invest for high-outcome-elaboration people (based on a median split) were not affected by the framing manipulation ($M_{\text{negative frame}} = 5.0, M_{\text{positive frame}} = 5.1; t(98) = .33, p > .1$), whereas low-outcome-elaboration investors were significantly more persuaded to invest in the negative framing condition than in the positive framing condition ($M_{\text{negative frame}} = 5.4, M_{\text{positive frame}} = 3.9; t(98) = -3.18, p < .01$; see Figure 2). Thus, our findings reveal that high-outcome-elaboration investors are not affected by goal framing and that low-outcome-elaboration investors are, in support of H_2 .

Next, we tested H_3 by examining whether participants with higher outcome elaboration scores had a stronger tendency to focus not only on the salient but also on the alternative frame of reference (i.e., whether they generated more frame-inconsistent thoughts than participants with low outcome elaboration scores). We ran two analyses of variance on the number of frame-consistent and frame-inconsistent thoughts people generated in the thought-listing task. The results reveal that though there is no difference in the number of frame-consistent thoughts generated by high- versus low-outcome-elaboration people ($p > .1$), high-outcome-elaboration people generated a significantly greater number of frame-inconsistent thoughts than low-outcome-elaboration people ($p < .01$; see Table 1). These results provide strong evidence that high-outcome-elaboration people tend to have a significantly stronger tendency to focus on frame-inconsistent thoughts, which provides strong support for H_3 .

Because NFC has been examined as a moderator of framing effects in the past, we conducted additional analysis

Figure 2
STUDY 2: CHRONIC OUTCOME ELABORATION ELIMINATES DISTORTION FROM GOAL FRAMING

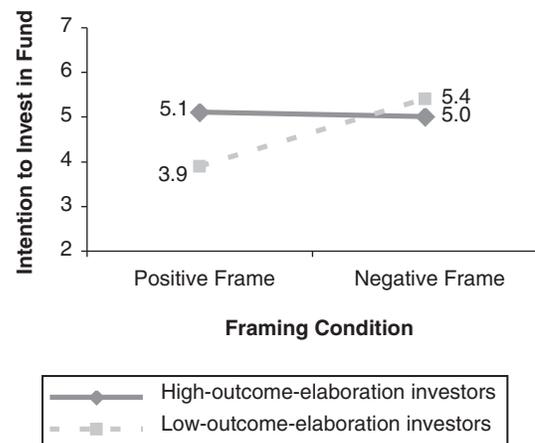


Table 1
NUMBER AND TYPE OF THOUGHTS GENERATED IN THOUGHT-LISTING PROTOCOLS

	High Outcome Elaboration	Low Outcome Elaboration	Significance	High NFC	Low NFC	Significance
Frame-consistent thoughts	1.15	1.20	$t = .23, p > .1$	1.34	.81	$t = -2.49, p < .01$
Frame-inconsistent thoughts	1.17	.52	$t = -4.0, p < .01$.92	.75	$t = -1.08, p > .1$
Frame-unrelated thoughts	1.80	2.10	$t = 1.28, p > .1$	1.89	2.01	$t = .53, p > .1$
Total number of thoughts	4.10	3.80	$t = -.98, p > .1$	4.15	3.55	$t = -1.84, p < .06$

to examine its effects on people's generation of frame-consistent and frame-inconsistent thoughts. The results from two analyses of variance revealed that high-NFC people generate a significantly higher number of frame-consistent thoughts than low-NFC people ($p < .01$). However, there was no difference in the number of frame-inconsistent thoughts generated by these two groups ($p > .1$; see Table 1). These results provide evidence that the deeper and more effortful general type of processing that high-NFC people engage in does not help them escape the salient frame and generate more frame-inconsistent thoughts. Finally, as Table 1 shows, high-NFC people generate significantly more total thoughts than low-NFC people, while the total number of thoughts generated by high-outcome-elaboration people is only slightly higher than thoughts generated by low-outcome-elaboration people. In Study 3, we show that high-outcome-elaboration investors' resistance to contextual and presentation biases helps them make more consistent and overall better investment choices than low-outcome-elaboration investors, whose preferences are affected by such manipulations.

STUDY 3: DIFFERENCE LABEL VARIATION

In Study 3, we employ a framing manipulation that labels the difference in the annual fees charged by two mutual funds as a surcharge for one fund versus a discount for the other. Prior research has suggested that a difference that favors Option B over Option A can sometimes be framed as an advantage of B or as a disadvantage of A by suggesting either A or B as the neutral reference point (Tversky and Kahneman 1986). Because of loss aversion, the difference looms larger when A is neutral and the difference is evaluated as a loss than when B is neutral and the difference is evaluated as a gain. Indeed, there is evidence in various domains that labeling a difference between two prices as a surcharge or a discount tends to differentially affect people's preferences for the two options (e.g., Thaler 1980; Tversky and Kahneman 1986). The reason for these effects is that it is easier to forgo a discount than to accept a surcharge because the same price difference is valued as a gain in the former case and as a loss in the latter (Tversky and Kahneman 1986).

The purpose of Study 3 is to show that high-outcome-elaboration investors consistently choose the mutual fund with superior performance, whereas low-outcome-elaboration investors are likely to be influenced by how the difference between two mutual funds' annual fees is labeled. We expect that high-outcome-elaboration investors will prefer the fund with a superior overall return in both framing conditions. Conversely, low-outcome-elaboration investors should prefer the superior fund in the discount condition but gravitate toward the inferior fund in the surcharge condition because they will code the surcharge as a loss relative to the reference point promoted by the manipulation rather than take a comprehensive view and focus on the overall return. Thus:

H₄: Investors with a lower (versus higher) chronic tendency to generate and evaluate potential outcomes are more likely to choose the superior investment option in the discount frame but the inferior option in the surcharge frame.

Design and Procedure

We collected data for this study with an online questionnaire administered to 94 people (46 women) ranging in age from 20 to 45. Participants were recruited through e-mail from undergraduate and graduate business classes (70% graduate) on three university campuses and either were paid a small cash amount for participation or were entered in a lottery for a chance to win a gift certificate to a large online retailer. Participants were asked to imagine that they had \$5,000 available and needed to decide how to invest the money for the coming year. They were randomly assigned to one of two experimental conditions and were asked to evaluate two mutual funds—Fund A and Fund B. In both conditions, Fund B had a higher average annual return over the past ten years (11.1%) and a higher annual fee (4.5%) than Fund A (9.9% and 3.5%, respectively) and thus was the slightly superior option. However, in one condition, participants were told that Fund A offers a fee discount of 1%, resulting in an annual fee of 3.5%, while the annual fee for Fund B is 4.5%. In the other condition, they were told that the annual fee for Fund A is 3.5%, while the fee for Fund B, which adds a surcharge of 1%, is 4.5% (for stimuli, see Table W6 in the Web Appendix at <http://www.marketingpower.com/jmrdec09>).

Measures

To measure our dependent variable (net preference for Fund B over Fund A), participants were asked to indicate how much of the \$5,000 they would invest in Fund A and how much in Fund B, making sure that these two amounts added up to \$5,000. We again measured and tested a set of potential confounds and covariates: perceived risk, extent of cognitive elaboration, issue involvement, and feelings of threat and fear (see Table W4 in the Web Appendix at <http://www.marketingpower.com/jmrdec09>). At the end of the questionnaire, as in the previous two studies, we included a manipulation check that asked participants whether the message emphasized more of the positive or more of the negative aspects of each of the proposed funds (two nine-point questions ranging from -4 = "more of the negative aspects were emphasized" to $+4$ = "more of the positive aspects were emphasized"). Next, a questionnaire was administered that contained the generation/evaluation dimension of the elaboration-on-potential-outcomes scale ($\alpha = .92$), the risk aversion scale ($\alpha = .77$), and the NFC scale ($\alpha = .89$) administered in previous studies.

Results and Discussion

Manipulation check. The manipulation check revealed that participants believed that more of the positive aspects of Fund A were emphasized in both the discount ($M = 1.29$; $t(48) = 4.24$, $p < .01$) and the surcharge ($M = 1.04$; $t(44) = 3.25$, $p < .01$) framing conditions. Conversely, they believed that the scenario emphasized neither the positive nor the negative aspects of Fund B in the discount condition ($M = -.12$; $t(47) = -.43$, $p > .1$) but that it emphasized significantly more of the fund's negative aspects in the surcharge framing condition ($M = -1.30$; $t(43) = -3.81$, $p < .01$), suggesting that the greater emphasis on the negative aspects of Fund B in the surcharge condition drove the effect.

Test of hypothesis. To test H₄, we ran a regression on participants' net preference for Fund B (operationalized as dol-

lars invested in Fund B less dollars invested in Fund A), with outcome elaboration and framing condition as independent variables and knowledge about investing, perceived risk, risk aversion, and gender as controls ($F(8, 85) = 5.32, p < .01; R^2 = 33\%$). We find significant main effects of difference label framing ($b = -4150, t = -2.70, p < .01$) and outcome elaboration ($b = 1198, t = 3.88, p < .01$) and a significant two-way interaction between outcome elaboration and framing condition ($b = 700.6, t = 2.44, p < .05$). Only one control variable—perceived risk of investing in Fund B—has a significant effect on participants’ net preference for Fund B ($b = -969.3, t = -4.10, p < .01$).

The significant two-way interaction provides support for H_4 . Subsequent analysis of the group means revealed that across the discount versus surcharge framing conditions, chronically high-outcome-elaboration investors (based on a median split) consistently invested more money in the superior Fund B ($M_{\text{discount frame}} = \$1,179, M_{\text{surcharge frame}} = \$708; t(90) = -.54, p > .1$), while chronically low-outcome-elaboration investors invested more money in Fund B in the discount condition ($M_{\text{discount frame}} = \$1,143$) but invested more money in the inferior Fund A in the surcharge condition ($M_{\text{surcharge frame}} = -\$1,781; t(90) = -3.04, p < .01$; see Figure 3). In Study 4, we test whether direct intervention can offset some of the negative effects of chronically low outcome elaboration tendencies, with the potential to enhance decision quality in the domain of financial investing.

STUDY 4: PRODUCT ATTRIBUTE VARIATION

In Study 4, we employ a framing manipulation that labels a key attribute of the fund—its past average return—in positive versus negative terms. The attribute-framing manipulation refers to the valence-consistent shift in evaluations that leads positively framed attributes to result in more favorable evaluations than negatively framed attributes. Attribute framing promotes selective attention to the positive (negative) attributes of the object, which in turn leads to greater accessibility of positive (negative) associations in memory. Attribute-framing effects appear to be reliable and robust

(Levin et al. 2002) and have been shown across various domains (e.g., Levin, Schnittjer, and Thee 1988; O’Clock and Devine 1995).

Here, we emphasize the positive or negative past return of a variable financial instrument. We expect that emphasizing positive return information will activate positive concepts associated with a high return, such as financial gains, whereas emphasizing negative return information will activate negative concepts, such as financial losses, especially among low-outcome-elaboration investors. Prior studies have found that framing a key product attribute in a positive (negative) way leads to a more positive (negative) evaluation of the product (e.g., Levin, Schneider, and Gaeth 1998). Thus, we expect that low-outcome-elaboration investors’ willingness to invest in the fund will be higher in the positive framing condition than in the negative framing condition. However, thorough predecision outcome elaboration on a variety of potential outcomes of investing should help investors focus on both the positive and the negative aspects of the key product attribute, helping them evaluate the product in a more balanced way and reducing their susceptibility to attribute-framing effects. Therefore, the investment intentions of high-outcome-elaboration investors should not be swayed by emphasizing the positive (negative) aspects of a mutual fund’s return. Thus:

H_5 : Investors with a higher (versus lower) chronic tendency to generate and evaluate potential outcomes are less susceptible to attribute-framing effects.

Previously, we argued that the chronic tendency to engage in predecision elaboration on potential outcomes draws people’s attention to different frames of reference, thus helping them be less susceptible to specific, externally imposed contextual and presentation biases. In this study, we directly demonstrate that greater outcome elaboration precedes this reduced susceptibility by adding an additional condition that encourages participants to elaborate on the potential outcomes of investing before they make a decision. In this condition, we prime deliberative mind-sets in participants by encouraging them to consider both the positive and the negative short-term and long-term outcomes of investing in an advertised mutual fund. We expect that this manipulation will encourage low-outcome-elaboration participants to engage temporarily in greater outcome elaboration. This should have the effect of decoupling their product evaluations from the differential framing of the fund return information. However, we do not expect this deliberative mind-set priming to make a difference in the responses of high-outcome-elaboration participants, because they tend to engage in such elaboration without encouragement.

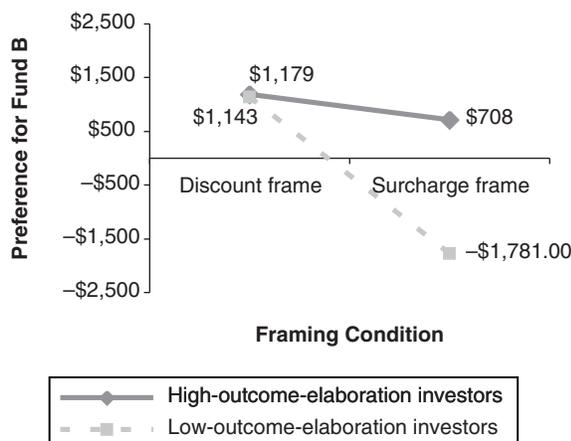
H_6 : When encouraged to elaborate on the positive and negative outcomes of investing before making a decision, low-outcome-elaboration investors become less susceptible to attribute-framing effects.

Design and Procedure

One hundred eighty-three undergraduate students (79 women) participated in the study in exchange for course credit. They were told that they had \$5,000 available and needed to decide how to invest the money for the coming year. Participants were randomly assigned to one of four

Figure 3

STUDY 3: CHRONIC OUTCOME ELABORATION ELIMINATES DISTORTION FROM DIFFERENCE LABEL FRAMING



experimental conditions in a 2 (outcome elaboration: encouraged versus not encouraged) \times 2 (attribute framing: positive versus negative) between-subjects design. In all conditions, participants were given a booklet that contained an investment offer describing a mutual fund that had a variable return and was offered by the fictional Financial Investment Corporation. The offer was framed differently in the two framing conditions: The positive condition emphasized that the average return for the best five of the past ten years was 12%, whereas the negative condition stated that the average return for the worst five of the past ten years was negative 2% (for stimuli, see Table W7 in the Web Appendix at <http://www.marketingpower.com/jmrdec09>). In both conditions, it was also stated that the average return over the past ten years was 5.03% and that any money not invested in the proposed fund would be invested instead in a mutual fund with a fixed annual return of 2%.

Following exposure to the investment offer, the outcome elaboration groups were asked to first elaborate on the potential outcomes of investing or not investing in the mutual fund before making a final investment decision. All participants then responded to a series of questions related to the dependent measures, the manipulation check variables, and measures of potential confounds and covariates. The same sets of measures used in Study 2 were also used in Study 4.

Measures

A questionnaire containing the same elaboration on potential outcomes ($\alpha = .90$) and risk aversion ($\alpha = .70$) scales as the previous studies was administered. The booklet containing the investment offer was presented separately as part of a seemingly unrelated study. After participants in the outcome elaboration condition were shown the mutual fund advertisement but before they were asked to indicate their intentions to invest, they were encouraged to elaborate on the potential outcomes of investing in the fund.⁹ To encourage participants' elaboration on potential outcomes, we employed the deliberative mind-set priming approach that Gollwitzer and Kinney (1989) developed. We first asked participants to list the positive and negative short-term and long-term consequences of investing in the fund. After listing these consequences, participants assessed (using a seven-point scale) each outcome's potential importance and the likelihood that it would actually occur. The dependent measure used a nine-point scale to assess intention to invest in the presented mutual fund (1 = "not likely," and 9 = "very likely"). At the end of the questionnaire, as in Study 2, we included a manipulation check that asked participants whether the message stressed the positive implications of investing in the mutual fund or whether it stressed the negative implications of not investing in the fund.

Results and Discussion

Manipulation check. The manipulation check yielded a significant main effect for framing; participants believed that the framed investment offer emphasized the positive consequences of investing to a greater extent in the positive

framing condition ($M = 7.3$) than in the negative framing condition ($M = 4.1$; $t(181) = 11.16$, $p < .01$) and that the offer emphasized the negative consequences of investing to a greater extent in the negative framing condition ($M = 6.1$) than in the positive framing condition ($M = 3.6$; $t(181) = 7.93$, $p < .01$).

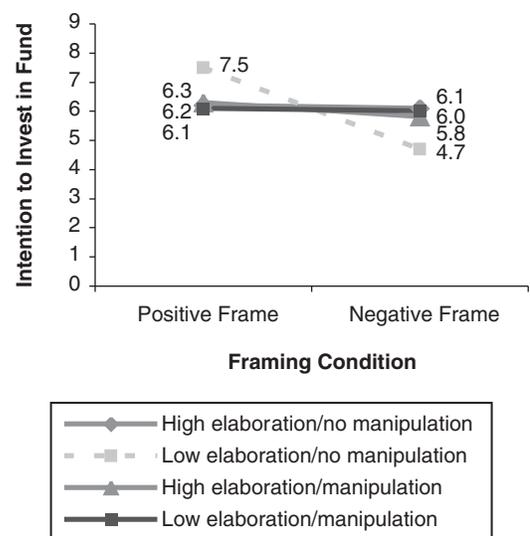
Test of hypotheses. To test H_5 and H_6 , we ran a regression with outcome elaboration, framing condition, and deliberative mind-set manipulation as independent variables and knowledge about investing, perceived risk, risk aversion, and gender as controls ($F(1, 171) = 5.42$, $p < .01$; $R^2 = 26\%$). The analysis revealed significant main effects of attribute framing ($b = 7.88$, $t = 4.43$, $p < .01$) and outcome elaboration ($b = -2.96$, $t = -3.48$, $p < .01$); significant two-way interactions between outcome elaboration and framing ($b = 1.32$, $t = 3.52$, $p < .01$) and between framing and the deliberative mind-set manipulation ($b = -6.55$, $t = -2.36$, $p < .05$); and a significant three-way interaction among framing, outcome elaboration, and the deliberative mind-set manipulation ($b = 1.10$, $t = 1.96$, $p < .05$). Only one control variable, risk aversion, had a significant effect on participants' intentions to invest ($b = -.46$, $t = -3.23$, $p < .01$).

Analysis of the group means revealed that in the condition in which participants were not encouraged to elaborate on potential outcomes, the results were similar to the other studies. Chronically low-outcome-elaboration investors (based on a median split) exhibited a significant effect of framing on intention to invest; that is, they were significantly more willing to invest in the positively framed condition ($M_{\text{positive frame}} = 7.5$) than in the negatively framed condition ($M_{\text{negative frame}} = 4.7$; $t(165) = -4.0$, $p < .01$; see Figure 4). In contrast, high-outcome-elaboration investors were unaffected by framing ($M_{\text{positive frame}} = 6.2$, $M_{\text{negative frame}} = 6.1$; $t(165) = .29$, $p > .1$).

Next, we examined the effects of directly encouraging a deliberative mind-set by inducing outcome elaboration pro-

Figure 4

STUDY 4: CHRONIC OR CUED OUTCOME ELABORATION ELIMINATES DISTORTION FROM ATTRIBUTE FRAMING



⁹In the outcome elaboration priming condition, we measured chronic elaboration-on-potential-outcomes tendencies first to ensure that participants' responses to the scale were unaffected by the outcome elaboration manipulation.

cessing tendencies. The significant three-way interaction provides strong support for H_5 and H_6 . Among people who exhibit a chronic tendency to generate and evaluate potential outcomes, attribute framing did not have a significant effect on intention to invest when these people were encouraged to elaborate on outcomes ($M_{\text{positive frame}} = 6.3$, $M_{\text{negative frame}} = 5.8$; $t(165) = .33$, $p > .1$), as we expected. Importantly, there is a similar pattern of results among low-outcome-elaboration people who were encouraged to elaborate ($M_{\text{positive frame}} = 6.1$, $M_{\text{negative frame}} = 6.0$; $t(165) = .23$, $p > .1$). Thus, we show that priming a deliberative mind-set among low-outcome-elaboration investors—by encouraging them to consider the potential positive and negative outcomes of investing—promotes a more balanced fund evaluation by consumers not normally inclined to engage in this type of elaboration, thus reducing their susceptibility to contextual and presentation biases. Therefore, direct intervention enabled chronically low-outcome-elaboration investors to behave consistently with high-outcome-elaboration investors.¹⁰

The results from Study 4 provide a form of triangulation in that we achieve results in a state level, compared with a chronic trait level in the previous studies. The results support our contention that a stronger outcome elaboration tendency attenuates contextual and presentation biases, independent of the type of manipulation involved. This study further shows that independent of investors' chronic tendency to elaborate on potential outcomes, their susceptibility to such biases can be temporarily attenuated with a mental processing intervention that induces them to consider the potential outcomes of investing before making a decision.

GENERAL DISCUSSION

Prior research has not empirically examined whether predecision deliberation on the pros and cons of engaging in a behavior might attenuate shortcomings that people ordinarily exhibit when analyzing the desirability of a choice (Gollwitzer 1990). We provide evidence that the tendency to engage in a balanced consideration of positive and negative outcomes might eliminate these shortcomings. More specifically, we show that such predecision deliberation, which promotes a balanced focus on alternative frames of reference, reduces the effects of various contextual and presentation biases in the domain of investment decision making.

Our findings have important implications for understanding a key investment decision-making bias that results from presenting information equivalent in content but different in format. Robust context and presentation effects have been found to affect people's attitudes, judgments, and choices in various domains in prior research. We show that such effects exist in the domain of investment decision making as well and persist when different types of manipulations that vary

the description of a focal option are employed. Importantly, the results from our studies demonstrate that investors who elaborate on the potential outcomes of their investment decisions, compared with investors who are less likely to do so, are more likely to focus on alternative frames of reference and thus are less influenced by irrelevant cues, such as the framing or the presentation mode of the information provided. Furthermore, we show that encouraging predecision elaboration on the pros and cons of investing helps investors with weaker outcome elaboration tendencies become less influenced by peripheral cues, such as framing and presentation mode.

Prior research has found that high-outcome-elaboration people are more likely to engage in effective self-regulation and tend to invest more money for their retirement (Nenkov, Inman, and Hulland 2008). Therefore, it is important for investor education programs and campaigns to target and reach low-outcome-elaboration investors and improve their investment practices. The findings from our studies provide important implications for improving consumers' investment decisions. The results from Study 1 reveal that low-outcome-elaboration investors are more likely to benefit from visual aids, such as Morningstar Style Boxes. This group's greater susceptibility to information presentation effects calls for the creation of effective educational programs and advertising campaigns aimed at increasing investments and improving decision quality because relatively simple changes in information presentation (e.g., using visual aids when presenting mutual funds) can affect this group's investment decisions (e.g., lead to an increase in portfolio diversification).

Research has shown that decisions made by employees covered by defined contribution plans may vary considerably depending on how the investment opportunities are presented (e.g., Benartzi and Thaler 1999). Given the increasing numbers of consumers who are switching from defined benefit to defined contribution types of pension plans, it is important to identify factors that might affect their decision to enroll in such plans. For example, one of the authors recently received a letter urging enrollment in the employer's 401(k) plan. The letter employed negative goal framing and noted that "if you do not participate you will be forgoing 8% of your pay." While the type of goal framing employed should not matter for high-outcome-elaboration investors, our findings show that negative framing is persuasive to low-outcome-elaboration investors—that is, those who are less likely to invest in a 401(k) plan. Study 3 results further showed that while high-outcome-elaboration investors make consistent investment choices, low-outcome-elaboration investors are more likely to choose a suboptimal investment option as a result of a presentation variation. Although considering a fund's fees and charges is important, the way these charges are presented should not affect investors' choices. Finally, Study 4 revealed that low-outcome-elaboration investors tend to prefer a fund when its best years of performance are emphasized. This tendency is related to the widespread suboptimal investment strategy of performance chasing. This widely documented strategy of investing in funds that have realized high returns (e.g., Sirri and Tufano 1998) has been criticized and linked to multiple negative consequences, such as increased portfolio volatility, excessive portfolio risk, and

¹⁰An alternative explanation for our findings is that high-outcome-elaboration respondents (or those encouraged to engage in predecision outcome elaboration) were less likely to fall prey to the effects of framing simply because they were more likely to notice the fund's average ten-year annual return figure of 5.03%. To rule out this alternative explanation, we ran a follow-up online study, in which 107 undergraduate students participated in exchange for course credit. The results indicate that participants with varying elaboration-on-potential-outcomes scores were neither differentially likely to pay attention to the fund's average annual return nor differentially likely to consider it while evaluating the presented mutual fund ($ps > .1$).

below-average results (e.g., Bagnoli and Watts 2000). The results suggest that low-outcome elaboration investors are especially vulnerable to this suboptimal strategy and its negative consequences. The good news is that their susceptibility to this bias can be mitigated by a simple intervention. We found that encouraging investors to consider the risks and benefits of investing before making an investment decision reduces susceptibility to framing effects for all investors independent of their outcome elaboration tendencies.

The Securities and Exchange Commission is aware of the potential for funds to present its performance in a potentially misleading fashion. In October 2003, it amended its Investment Company Advertising Rules to require that all advertisements for mutual funds include the following information, "(i) a statement that past performance does not guarantee future results; (ii) a statement that current performance may be lower or higher than the performance data quoted; and (iii) a toll-free or collect telephone number or a website where an investor may obtain performance data current to the most recent month-end" (*Federal Register* 2003, p. 57765). Furthermore, advertisements are required to include a statement that advises investors to consider the fund's investment objectives, risks, and charges and expenses carefully before making an investment decision; to explain that the prospectus contains this and other information about the investment company; to state that the prospectus should be read carefully before investing; and to identify a source from which a prospectus can be obtained (*Federal Register* 2003). Our findings strongly suggest that these requirements, though helpful, are *insufficient* for many investors. A deliberative mind-set intervention (similar to our operationalization in Study 4) should be added to all mutual fund advertisements to help investors be less swayed by misleading representation of fund information.

By examining the relationship between different types of contextual and presentation biases and people's tendencies to consider the potential outcomes of their behavior, this research also contributes to understanding the relationship between message frames and people's dominant psychological traits and concerns. We argue conceptually and show empirically that in contrast to NFC (a general type of processing), which does not prevent people from focusing exclusively on the salient frame of reference, elaboration on potential outcomes (a balanced type of processing) aids them in broadening their focus to include the alternative frame. While the interaction between NFC and framing was not significant in our studies, it has been demonstrated to be significant in previous work (e.g., Chatterjee et al. 2000). Perhaps its significance depends on the type of framing used (Levin, Schneider, and Gaeth 1998), and elaboration on potential outcomes is a better predictor than NFC for some types of framing but not for others. This is a possible direction for future work.

We examine the moderating effects of an individual trait, building on prior research that has considered the effects of individual traits on people's responses to framing (e.g., Simon, Fagley, and Halleran 2004), but it is likely that responses to framed messages are moderated by situational

influences as well. For example, it is possible that people's decision stage moderates their susceptibility to framing effects, such that people in the predecision stage, who are deliberating on both the pros and the cons of a decision, and people in the postdecision stage, who are planning the implementation of decision they have made, respond differently to a framed message. Further research should examine this possibility.

Although we focus on examining an important moderator of investors' susceptibility to contextual and presentation biases, we believe that elaboration on potential outcomes may also be an important moderator to people's susceptibility to other violations of expected utility theory, such as violations of regularity (e.g., Huber, Payne, and Puto 1982) or procedure invariance (e.g., Tversky and Kahneman 1986). Furthermore, although we show that elaboration on potential outcomes mitigates the effects of these biases when people must evaluate and choose mutual funds, further research should examine this relationship in other consumer contexts and domains related to the appropriate use of income to finance consumption or savings (e.g., Soman and Cheema 2002).

The need for innovative behavioral finance research that might give investors the tools they need to better understand the markets and the basic principles of financial planning is emphasized by organizations such as the FINRA Investor Education Foundation. The findings from the four studies we presented provide strong evidence that investment biases could be alleviated by using techniques such as encouraging consumers to consider the pros and cons of the available options in a balanced way. The findings offer important implications for the design, presentation, and communication of financial products and for campaigns targeted at improving investment decisions.

Appendix

ELABORATION-ON-POTENTIAL-OUTCOMES SCALE

Generation/Evaluation Dimension Items	CFA Factor Loadings			
	Study 1	Study 2	Study 3	Study 4
1. Before I act I consider what I will gain or lose in the future as a result of my actions.	.69	.61	.71	.81
2. I try to anticipate as many consequences of my actions as I can.	.80	.77	.80	.86
3. Before I make a decision I consider all possible outcomes.	.86	.86	.87	.77
4. I always try to assess how important the potential consequences of my decisions might be.	.85	.73	.90	.80
5. I try hard to predict how likely different consequences are.	.82	.68	.91	.73
6. Usually I carefully estimate the risk of various outcomes occurring.	.84	.72	.89	.84

Notes: CFA = confirmatory factor analysis.

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