

The Mere-Measurement Effect: Why Does Measuring Intentions Change Actual Behavior?

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Recent research has demonstrated that merely measuring an individual's purchase intentions changes his or her subsequent behavior in the market. Several different alternative explanations have been proposed to explain why this "mere-measurement effect" occurs. However, these explanations have not been tested to date. The purpose of this article is to test several competing explanations for why measuring general intentions to purchase (e.g., How likely are you to buy a car?) changes specific brand-level behavior (e.g., which specific brand of car is purchased). The results provide a clearer understanding of the cognitive mechanism through which the mere-measurement effect operates. The results show that when asked to provide general intentions to select a product in a given category, respondents are more likely to choose options toward which they hold positive and accessible attitudes, and are less likely to choose options for which they hold negative and accessible attitudes, compared to a control group of participants who are not asked a general intentions question. These results provide support for the conjecture that asking a general purchase intent question influences behavior by changing the accessibility of attitudes toward specific options in the category.

What is the outcome of asking consumers their intentions to perform a behavior? Several studies have shown that consumers may not retrieve a preexisting intention but rather may construct a response only once an intentions question is asked (Feldman & Lynch, 1988; Schwarz & Sudman 1996; Simmons, Bickart, & Lynch, 1993). Furthermore, the act of forming and reporting a response to a survey question can alter respondents's subsequent evaluations and behavior (Dholakia & Morwitz, in press; Fitzsimons & Morwitz, 1996; Greenwald, Carnet, Beach, & Young, 1987; Morwitz, Johnson, & Schmittlein, 1993; Ofir & Simonson, 2001; Sherman, 1980; Spangenberg & Greenwald, 1999). This mere-measurement effect has been demonstrated in contexts

involving both specific (e.g., donating time to a specific charity) and general behaviors (donating time to any charity).

Fitzsimons and Morwitz (1996) suggest four possible explanations for why asking general intentions questions affects the general behavior and the specific choices people make. It is possible that one, several, or all of these explanations lead to the mere-measurement effect. The first is that measuring general intentions increases the salience of thoughts about engaging in the general behavior, which in turn increases the salience of thoughts about the names or labels of specific options in the choice set. Subsequent changes in behavior may be caused by this enhanced *label accessibility* (Nedungadi, 1990). The second explanation is that measuring general intentions increases the accessibility of both attitudes toward the general behavior and attitudes toward the most salient specific options in the choice set. Changes in subsequent behavior might therefore be a function of this increased *attitude accessibility*. The third explanation is that measuring general intentions leads to recall and subsequent

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polarization of attitudes toward the general behavior and attitudes toward the most salient specific options in the choice set. This *attitude polarization* then changes subsequent behavior. The fourth explanation is that people have preformed intentions to engage in the general behavior and to select specific options in the choice set that are recalled and become more accessible when they are asked general intentions questions. Choice behavior may be influenced through the increased *intention accessibility*. This research attempts to determine through which subset of these four proposed mechanisms the mere-measurement effect operates.

THE EFFECT OF MEASURING INTENTIONS

In what he coined “the self-erasing error of prediction,” Sherman (1980) demonstrated that participants systematically overpredicted their likelihood to perform a specific socially desirable behavior and underpredicted their likelihood to perform a specific socially undesirable behavior. These same participants were then more likely to actually engage in the specific behavior for which they reported their behavioral intent (than was a control group). In this respect their errors of prediction were self-erasing. Greenwald et al (1987) examined this phenomenon in the context of voting behavior. They found that participants were more likely to register to vote and to actually vote if their intentions were measured in advance, as indicated by examinations of the voter rolls. Both Greenwald et al. and Sherman suggest that asking people to make predictions may make their thoughts about performing the action and corresponding supporting reasons more salient.

In a marketing research domain, consumers are often asked questions about their intentions to purchase. Morwitz et al. (1993) found that for both automobiles and personal computers, simply measuring participants’s general category-level purchase intentions (“How likely are you to purchase an automobile?”) led to significantly greater levels of purchasing in the product category. They suggested that measuring intentions increases the salience of thoughts related to purchasing the product and that subsequent behavior is more consistent with these thoughts than when the question is not asked (and accessibility of thoughts is not increased). Because the products in their study were ones for which most people are likely to hold favorable attitudes, measuring intentions led to increased purchase rates. Consistent with this explanation, Morwitz et al. also observed that at the individual level, whether repeatedly measuring intentions increased or decreased purchase rates depended on the valence of the participant’s product-related thoughts. They speculated that the impact of repeated intention measurement might be caused by attitude polarization.

Fitzsimons and Morwitz (1996) examined the effect of measuring general category-level purchase intentions on the specific brand choices made. They found that participants

who currently used a specific brand in the general category were more likely to repurchase that brand if asked a general category-level intentions question (than brand users not asked a general intentions question). For nonusers of the category, however, when compared to a group not asked a general intentions question, those whose intentions were measured were more likely to purchase one of the most popular brands on the market (i.e., large market share brands). Fitzsimons and Morwitz argued that these results are consistent with the hypothesis that asking general intentions questions leads to an increase in the accessibility of thoughts related to the most accessible option in the choice set (i.e., the brand previously owned for repeat buyers, and large market share brands for first time buyers). In turn, participants were more likely to actually purchase the specific brand for which brand-related thoughts had increased accessibility due to general intention measurement.

Although research in the area of mere-measurement effects suggests that an increase in accessibility of a cognition may account for the effect, the nature of the data collected to date has not allowed for a thorough understanding of the phenomenon. In this research, we attempt to gain a greater understanding of the mechanism through which the mere-measurement effect operates.

EXPLANATIONS FOR THE EFFECT OF MEASUREMENT ON CHOICE

Accessibility of the Label for a Choice Option

If individuals have been exposed to various specific-choice options in a choice set, they may be expected to have differential levels of accessibility for each of the choice option labels (as a function of exposure, salience, typicality, etc.). Asking an individual a general intentions question (e.g., “How likely are you to buy a new car?”) would lead to the activation of the general behavior (e.g., buying an automobile), and the spreading and activation from the general behavior “node” to the labels for specific-choice options in the category (e.g., brand names), as a function of their previous label accessibility levels. Thus, a label for a specific-choice option that was previously accessible will be even more accessible after the individual answers a general intentions question, and as a result that option will have a greater probability of being included in the set of generated alternatives (thus increasing the option’s probability of proceeding through the choice process and ultimately being chosen). Note that we do not suggest or require any change in attitude toward the specific-choice option for label accessibility to account for the mere-measurement effect. Support for this assumption may be found in Nedungadi (1990), who found that when either directly or indirectly priming choice option labels, participants’s label accessibilities were increased, whereas there were no effects on attitudes toward the choice options. Thus, if the mere-measurement effect were op-

erating through increasing label accessibility, we would expect that for individuals whose only knowledge is the labels for specific options in a choice set, measuring general intentions would both (a) increase the accessibility of the specific-choice option label that had the highest levels of accessibility prior to intentions measurement, and (b) increase choice for those specific-choice options that had the highest levels of label accessibility prior to intentions measurement.

Accessibility of an Attitude Toward a Choice Option

If an individual was asked his or her intention to participate in a general behavior, we assume that the general behavior node in memory would be activated. If the individual has preformed attitudes toward the options in the choice set at the time the general intentions question was asked, then this activation would spread to the specific-choice options as a function of how accessible their previously formed attitudes were. Thus, simply asking a general intentions question makes attitudes toward choice options that were previously accessible even more accessible. Consistent with this Chapman (2001) found that measuring intentions increases the accessibility of related attitudes. A series of studies have demonstrated that the link between attitudes and behavior grows stronger as the attitudes become more accessible (Alba, Hutchinson, & Lynch, 1991; Biehal & Chakravarti, 1983; Fazio, Chen, McDonel, & Sherman, 1982; Fazio & Zanna, 1981). Thus the net effect of asking a general intentions question is to reinforce the link between preexisting attitudes toward options in the choice set and choice behavior. As people hold both positive and negative attitudes toward different choice options, the valence of the preexisting attitude is critical to the direction of behavioral change driven by measuring intentions. Therefore, if we assume changes in attitude accessibility are driving the mere-measurement effect, we would expect that for individuals who have formed attitudes for specific-choice options, measuring general intentions will both (a) increase the accessibility of the attitude that had the highest levels of accessibility prior to intentions measurement, and (b) cause a change in choice for those choice options whose attitudes are most accessible prior to intention measurement, the direction of this change determined by the valence of the attitude. For choice options for which individuals hold positive (negative) and accessible attitudes, choice incidence of these options will increase (decrease) with intentions measurement.

Attitude Polarization

It is also possible that by activating attitudes toward the specific-choice options in the choice set, these attitudes might become more polarized or extreme. Repeated exposure to a stimulus, for example, has been shown under certain conditions to lead to changes in expressed attitude toward the focal

object. In his work on mere exposure, Zajonc (1968) demonstrated that repeated exposure to novel, neutral stimuli leads to more positive evaluations of the stimuli (Zajonc, 1968; Zajonc & Rajecki, 1969). Other researchers, however, have found not simply increasingly positive evaluations as a function of repeated exposure, but rather increasingly polarized evaluations (Brickman, Redfield, Harrison, & Crandall, 1972; Tesser, 1978; Tesser & Leone, 1977).

Fazio and his colleagues (Fazio, Sanbonmatsu, Powell, & Kardes, 1986; Powell & Fazio, 1984) asked participants to repeatedly express their attitudes and examined accessibility and polarization. They found no effect of repeated expression on attitude extremity, but a strong effect on attitude accessibility. By contrast, Downing, Judd, and Brauer (1992) found both increased accessibility and attitude extremity as a function of repeated expression. In the domain of intention questions, by asking an individual to report his or her general intentions, the individual might activate the node for the general behavior in question and access his or her attitude. If accessing the node for the general behavior functions as does repeated expression then we would expect a polarizing effect on initial attitudes for highly accessible choice options and a corresponding change in choice. For individuals who have formed attitudes toward specific-choice options, we would expect that measuring general intentions will both (a) increase the extremity of the specific-choice option attitude that had the highest levels of accessibility prior to intentions measurement, and (b) cause a change in choice for those specific-choice options whose attitudes are most accessible prior to intention measurement, the direction of the change to be determined by the valence of the attitude. For choice options for which individuals hold positive (negative), accessible attitudes, choice incidence of these options will increase (decrease) with intentions measurement.

Preformed Intent Toward a Choice Option

Asking a general intentions question may increase the accessibility of intentions to engage in the general behavior, which would in turn increase the accessibility of any previously formed intentions to select specific-choice options. The result of the increased accessibility should be an increased likelihood of choosing the highest intended choice option. Thus, if the mere-measurement effect were operating through intentions, we would expect that for individuals who have formed intentions to select specific-choice options, measuring general intentions will increase the accessibility of the intention toward the specific-choice option that had the highest level of accessibility prior to intentions measurement. Further, it would cause an increase in choice for the option in the choice set for which individuals have the highest specific intention prior to general intentions measurement.

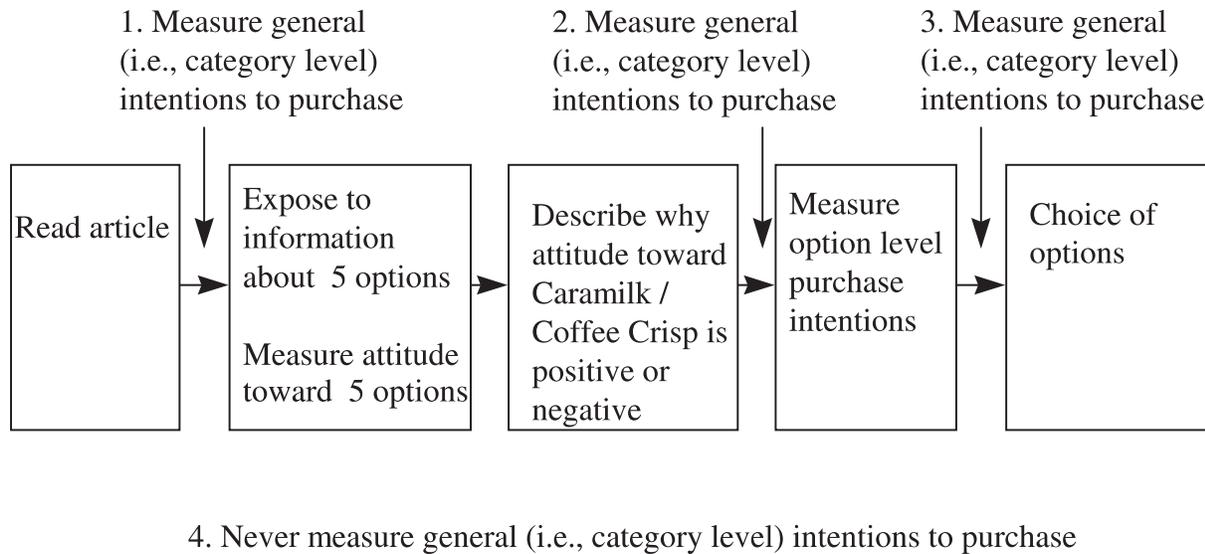


FIGURE 1 Experimental Procedure

EXPERIMENT 1

Participants

Participants were 285 undergraduate students at a large western university in the United States. Participants received \$5 and their choice of a Canadian candy bar in exchange for their participation. At the time of the experiment, none of the candy bars used were available in the U.S. market.

TABLE 1
Ratings of Stimuli on Four Attributes

1. Caramilk	
Taste	8
Grams of fat	4.8
Calories	350
Shelf life (in days)	100
2. Coffee Crisp	
Taste	7.5
Grams of fat	11.0
Calories	340
Shelf life (in days)	110
3. Sweet Marie	
Taste	7
Grams of fat	7.0
Calories	335
Shelf life (in days)	105
4. Crunchie	
Taste	6
Grams of fat	13.0
Calories	330
Shelf life (in days)	110
5. Mr. Big	
Taste	10
Grams of fat	8.0
Calories	350
Shelf life (in days)	105

Note. Taste was scored on a scale of 1 to 10, with 1 representing poor taste and 10 representing excellent taste.

Design and Procedure

The experimental procedure involved having participants read an article about Canadian candy bars, look at *Consumer Reports*-type information about five different brands of candy bars, provide their attitudes toward the five brands, elaborate on their attitude toward one particular brand, provide their specific intentions to buy each brand, and actually choose and receive one brand of candy bar. The experiment was a 2 × 4 full factorial between-subject design. The two factors that were manipulated in the experiment were (a) the valence of the attitude for the brand participants were asked to elaborate on (positive or negative), and (b) when during the experiment participants’s general intentions to buy Canadian candy bars were measured (never, after reading the article, after elaborating on a brand attitude, or after forming a specific (i.e., brand-level) purchase intention).

The experimental procedure is summarized in Figure 1. At the beginning of the experiment, participants were informed that the research was a joint project between faculty members at the university and the Confectionery Manufacturers Association of Canada (CMAC) and that CMAC was interested in studying the behavior of consumers in the United States. All participants then read a mock newspaper article entitled “Canadian Candy Manufacturers to Enter the U.S. Market,” which appeared to be from the *Toronto Globe and Mail*. The article briefly discussed the plans by Canadian candy bar manufacturers to enter the U.S. market. The article made two neutral references to one particular brand of Canadian candy bar, the “Sweet Marie” brand. The purpose of these references was to make the target brand Sweet Marie have a higher level of label accessibility (i.e., brand-name accessibility) than the other brands used in the experiment (and a nonexistent or neutral attitude).

Participants next received a set of ratings on four attributes for five brands of Canadian candy bars and were asked to report their attitudes toward each brand (on a 7-point Likert-type scale with endpoints 1 [*extremely negative*] and 7 [*extremely positive*]). The rating information is shown in Table 1. The rating information was reported as coming from the Canadian branch of *Consumer Reports*. Pretesting demonstrated that participants were unfamiliar with each of the five options (all familiarity ratings were below 1.6 on a 7-point scale where 1 was *unfamiliar*), and there were no significant differences in familiarity across options. The rating information was designed and pretested so that, on average, participants would hold increasing positive attitudes toward, in increasing order, Crunchie, Coffee Crisp, Sweet Marie, Caramilk, and Mr. Big.

Participants in one of the two attitude valence conditions were then asked to “describe in a sentence or two why your attitude toward the Caramilk candy bar was positive or negative,” and were provided space to do so. The remaining participants received the same instruction for the Coffee Crisp candy bar. Pretesting had demonstrated that participants held relatively positive attitudes toward Caramilk and relatively negative attitudes toward Coffee Crisp. Thus, this manipulation was designed to increase the accessibility of attitudes for a target option toward which consumers either held a positive or a negative attitude.

Participants were then informed that the manufacturers of the five candy bars were planning to enter the local market. Participants were asked to indicate their relative intention to purchase each option by allocating 100 points across the five options, assuming all five were available to them. Finally, participants were informed that the sponsors of the research had provided samples of the candy bars for their trial. They were asked to tear off a coupon corresponding to the option they wished to try and exchange it for a candy bar when handing in their questionnaire. On the last page of the booklet, we asked participants to provide information about how frequently they consume candy bars and how familiar they were with the Canadian candy bars used in the experiment.

We also manipulated whether and when, during the process described previously, general intentions were measured. The general intentions question was worded as follows:

“How likely or unlikely would you be to try a Canadian candy bar if it was available in the U.S.?”

Responses were obtained using a 7-point scale, with endpoints 1 (*definitely would not try*) to 7 (*definitely would try*). This question was inserted at one of three different points in the experiment for each of three different experimental groups and was never asked for a fourth control group. For the first group, general intentions were measured after participants read the mock newspaper article and before they answered the attitude questions. This manipulation was intended to increase the accessibility of the choice option label

(i.e., the brand name) of the most accessible candy bar (i.e., the brand mentioned twice in the newspaper article—Sweet Marie). For the second group, general intentions were measured after participants reported why they felt the way they did about either Caramilk or Coffee Crisp, but before measurement of specific intentions about each of the options. This manipulation was intended to increase the accessibility of either a positive or a negatively valenced attitude toward a choice option. For the third group, general intentions were measured after specific option-level intentions were measured but before participants chose a candy bar for trial. This manipulation was intended to increase the accessibility of participants’s just-formed specific intentions to choose each option. The fourth group was used for the control condition. These participants were never asked to respond to a general intentions question.

Results

Does the mere-measurement effect operate through label accessibility? We test this hypothesis by comparing the choice probabilities for the target option of participants who were never asked a general intentions question and participants whose general intentions were measured just after they read the mock newspaper article but before they received attribute information.¹ Because Sweet Marie was mentioned twice in the newspaper article, no other brand names were mentioned in the article, and none of the five options were available in the U.S. market, the Sweet Marie is the only candy bar option for which participants would have had a nonzero level of label accessibility at the time of the general intentions question. If mere measurement were operating through label accessibility, we would expect to see higher proportions of choice for the Sweet Marie target option in the condition with general intentions measurement, after reading the newspaper article, than we would find in the control participants whose general intentions were never measured. Because we had no reason to expect that the attitude valence manipulation that occurred later in the experiment would affect the potential impact of mere measurement through label accessibility, we pooled across the two attitude valence conditions.

The overall results for candy bar choice proportions in each of the eight conditions are shown in Table 2. The proportion of participants choosing the target brand (i.e., Sweet Marie) whose general intentions were never measured (5.8%, $n = 69$), did not differ from the proportion choosing

¹We tested our hypotheses by examining the effects for the target (i.e., the most accessible) options but not the comparable and presumably weaker effects for the other options. We did this because all our experiments involve forced choice. Therefore, if we obtain the hypothesized effect for the target option, by definition choice aggregated across the other options must shift in the opposite direction. However, an examination of the effects for these less-accessible options, not surprisingly, shows that none were stronger than for the most accessible option.

TABLE 2
Experiment 1 Candy Bar Market Shares by Condition

<i>Attitude Valence</i>	<i>When General Intentions are Measured</i>	<i>N</i>	<i>Caramilk</i>	<i>Coffee Crisp</i>	<i>Sweet Marie</i>	<i>Crunchie</i>	<i>Mr. Big</i>
Positive	Never	37	29.7%	13.5%	2.7%	8.1%	46.0%
Negative	Never	32	31.3%	15.6%	9.4%	3.1%	40.6%
Positive	After reading article	33	24.2%	18.2%	3.0%	12.1%	42.4%
Negative	After reading article	34	20.6%	8.8%	2.9%	0.0%	67.7%
Positive	After elaborating on attitude	37	54.1%	8.1%	8.1%	2.7%	27.0%
Negative	After elaborating on attitude	38	21.1%	2.6%	2.6%	0.0%	73.7%
Positive	After forming option-level purchase intentions	36	41.7%	5.6%	2.8%	5.6%	44.4%
Negative	After forming option-level purchase intentions	34	26.5%	11.8%	0.0%	11.8%	50.0%
Total		281	31.3%	10.3%	3.9%	5.3%	49.1%

the target among those whose general intentions were measured after reading the newspaper article (3.0%, $n = 67$) ($z = 79$, ns in test of proportions). The results do not support the conjecture that the mere-measurement effect is caused by increased label accessibility.

Does the mere-measurement effect operate through attitude accessibility? We test this explanation by comparing the choice probabilities of the positive and negative target options (i.e., Caramilk and Coffee Crisp) in conditions where general intentions were measured after participants elaborated on a brand attitude, relative to the control conditions (where general intentions were never measured). Consistent with our pretest results, the Caramilk bar was a positively rated candy bar (i.e., 83% of participants rated it a 5, 6, or 7 on a 7-point scale), and half of the participants received a manipulation that made their attitude toward Caramilk more accessible. Also as expected, the Coffee Crisp bar was a negatively rated candy bar (i.e., 55% of participants rated it a 1, 2, or 3 on a 7-point scale), and half of the participants received a manipulation that made their attitude toward Coffee Crisp more accessible. Thus, support for an attitude accessibility mechanism would be found if, relative to the comparable control conditions, the proportion of participants choosing the positive target, Caramilk, is higher, and the proportion choosing the negative target, Coffee Crisp, is lower, when general category-level purchase intentions are measured after attitude elaboration.

Consistent with an attitude accessibility explanation, the results indicate that the choice incidence of the positive and accessible target option (i.e., Caramilk) among participants whose general intentions were measured after they elaborated on their attitude toward Caramilk (54.1%, $n = 37$) was significantly higher than the choice incidence of Caramilk for participants whose general intentions were never measured (29.7%, $n = 37$) ($z = 2.13$, $p = .015$, one-tailed test of proportions). Also consistent with this hypothesis, the choice incidence for the negative and accessible target option (i.e., Coffee Crisp) among participants whose general intentions were measured after they elaborated on their attitude toward Coffee Crisp (2.6%, $n = 38$) was significantly lower than the Coffee Crisp choice incidence for participants whose general

intentions were never measured (15.6%, $n = 32$), ($z = 1.94$, $p = .025$, one-tailed test of proportions).

We also used a categorical analysis of variance (ANOVA) procedure (i.e., CATMOD procedure in SAS) to test the hypothesis that the mere-measurement effect operates through changing attitude accessibility. The dependent variable was a binary variable indicating whether the participant chose the target option that had been manipulated to be most accessible (i.e., Caramilk or Coffee Crisp). The independent variables were (1) valence of the option elaborated on and (2) whether or when the general intentions question was asked, and the interaction between (1) and (2). We conduct two planned contrasts that compare the percentage that chose the focal option for participants whose general intentions were measured after elaboration versus participants whose general intentions were never measured. The contrast was significant for the positive, $\chi^2(1) = 4.39$, $p = .04$, and marginally significant for the negative target option ($\chi^2(1) = 2.93$, $p = .09$).

The results of both the tests of proportions and the categorical ANOVA provide strong support for the hypothesis that measuring general intentions affects specific choices made by increasing the accessibility of attitudes toward options in the choice set. These results also provide further evidence against a label accessibility explanation. If measuring general intentions increased label accessibility (rather than the accessibility of the attitude), then measuring general intentions after elaborating on either a positive- or a negative-valenced option should lead to increased choice. However, the results demonstrate that for a negative target option (i.e., Coffee Crisp), asking intentions leads to decreased rather than increased choice.

Does the mere-measurement effect operate through intent accessibility? We test this hypothesis by comparing the percentage of participants who chose the option that they reported the highest specific (i.e., option-level) purchase intention for (i) participants whose general intentions were measured after their specific purchase intentions and for (ii) participants whose general intentions were never measured. We pool across attitude valence conditions for this test. We determined the option for which participants had the highest specific purchase intention by examining how they distributed

100 points across the five options; 78.9% of the participants had a single option that had a higher specific purchase intention than the other four options. The remaining participants gave more than one option the highest number of points.

The results do not support this explanation. Although participants whose general intentions were measured after specific intention measurement were more likely to choose their most intended option (81.8%, $n = 55$) than participants whose general intentions were never measured (77.6%, $n = 62$), this difference was not statistically significant ($z = .560$; test of proportions).

Discussion

The results of this experiment are consistent with the suggestion that measuring general intentions increases attitude accessibility and in turn affects choice. We did not find support for either the label accessibility or preformed specific intentions accessibility explanations. However, one might argue that aspects of the experimental design make it less likely a preformed specific intentions explanation will be supported compared to an attitude accessibility mechanism. In this experiment participants went through all stages of the decision-making process (generation of alternatives, consideration of alternatives, and selection of the chosen alternative). We did this to test whether the mechanism or mechanisms that drive the mere-measurement effect might vary with the individual's stage of his or her decision-making process. Although such an approach has several advantages, it also has some disadvantages. By having all participants proceed through the entire decision-making process, participants received varying amounts of option-specific information before and after the point in the experiment where their general intentions either were or were not measured. For example, additional information provided to participants after the general intent question in our test of a label accessibility explanation could potentially swamp any effects of label accessibility. Similarly, exposure to information about the different choice options in prior stages of the decision-making process could affect the cognitions related to the choice option later in the decision-making process. For example, exposure to option labels or names could affect subsequent attitude accessibility levels. In the next experiments we therefore test the label accessibility and attitude accessibility explanations in separate experiments and provide only information about the choice option that is relevant to the stage in the decision-making process associated with the potential mechanism being tested.

Although the choice results provide support for our theoretical explanation that measuring intent changes attitude accessibility, which in turn affects choice, we did not collect any direct measures of accessibility. In the next experiments we therefore also examine whether measuring general intentions affects accessibility as measured by recall and response times. In Experiment 3 we also test whether the mere-measurement effect operates through attitude accessibility or attitude polarization.

surement effect operates through attitude accessibility or attitude polarization.

EXPERIMENT 2

In contrast to Experiment 1, the following experiment was designed to test only one potential mechanism for the mere-measurement phenomenon—whether mere measurement operates through increased label accessibility. Further, in Experiment 1 we examined potential mechanisms using only stimulus-based choice measures (i.e., participants chose from a comprehensive list of all options). In the next experiment we use both stimulus-based and memory-based choice (i.e., participants are asked to select a choice option using an open-ended question). We expect the behavioral effects of asking general intentions to be greater for memory-based choice because choice options other than the target (i.e., the most accessible option) are not made accessible by the choice measurement process. We also measure free recall of the choice options (i.e., brands) used in the experiment. The accessibility explanation underlying the proposed mechanisms suggests that free recall of the target option should be greater when general intentions are measured versus when they are not. These three dependent measures (i.e., stimulus-based choice, memory-based choice, and free recall) are measured between participants.

Design and Procedure

Participants were 259 undergraduate students at a large western university in the United States. The stimuli and basic procedure used to test for a label accessibility explanation were very similar to those used in the beginning of Experiment 1. Participants first read a mock newspaper article,² either were or were not asked a general category-level intent question, performed a brief unrelated filler task, and then either made a stimulus-based choice, a memory-based choice, or did a free recall task. In the stimulus-based choice condition participants were asked to tear off a coupon corresponding to the option they wished to try and exchange it for a candy bar when handing in their questionnaire. In the memory-based choice condition participants were asked to write the name of the candy bar they wanted to try on a blank coupon and exchange it for a candy bar. Participants in the free recall task condition were asked to recall and list each of the candy bars they had seen described in the earlier article. We had each participant respond to only one of these three dependent variables because responses to one of these measures could influ-

²In contrast to Experiment 1 where only one option was mentioned in the newspaper article, here the article contained four neutral references to the target option and one neutral reference to all other options. This parallels the tests of attitude and preformed specific intention accessibility explanations where cognitions about multiple options are accessible, but the target option has the highest level of accessibility.

TABLE 3
Experiment 2 Results ($n = 259$)

	General Intentions Measured			General Intentions Not Measured		
	Free Recall	Stimulus-Based Choice	Memory-Based Choice	Free Recall	Stimulus-Based Choice	Memory-Based Choice
Percentage choosing/recalling target option	75.6	22.2	56.8	61.7	28.0	57.1%
Sample size	45	45	37	47	50	35

ence responses to the others. On the last page of the booklet, we asked participants to provide information about how frequently they consume candy bars and how familiar they were with the Canadian candy bars used in the experiment.

Results

As in Experiment 1, this experiment was designed so that participants should have higher label accessibility levels for the target option, Sweet Marie, than for the other options. If mere measurement is operating through label accessibility, we would expect to see higher proportions of choice for the target option in the condition with general category-level intentions measurement than we would find in the control participants whose intentions were never measured.

The overall results for each of the six conditions are shown in Table 3. Among participants whose general intentions were measured, 75.6% ($n = 45$) recalled the target option versus 61.7% ($n = 47$) among participants whose intent was not measured ($z = 1.43$, $p = .08$, one-tailed) based on a test of proportions. This provides marginal support that measuring intent increases the accessibility of the most accessible option label. However this enhanced label accessibility did not affect choice. Across the two choice conditions 37.8% ($n = 82$) of participants whose general intentions were asked chose the target option, whereas 40.0% ($n = 85$) of those whose intentions were not asked chose the target option ($z = -.29$, $p = .89$). Although we expected larger effects for memory-based choice, the results were similar for both the stimulus- and memory-based choice tasks. Among partici-

pants who performed the stimulus-based choice task, 22.2% ($n = 45$) of participants whose general intentions were measured chose the target option, whereas 28.0% ($n = 50$) of those not asked chose the target ($z = -.64$, *ns*). Similarly among participants who performed the memory-based choice task, 56.8% ($n = 37$) of those asked intent chose the target option, whereas 57.1% ($n = 35$) of those not asked chose the target ($z = -.03$, *ns*). These results do not provide support for the conjecture that the mere-measurement effect on behavior operates through increased label accessibility.³

EXPERIMENT 3

Design and Procedure

One hundred ninety-two participants at a large East Coast university took part in Experiment 3, which tested for the role of changes in both attitude accessibility and attitude polarization. The procedure was similar to that used in the attitude accessibility test in Experiment 1 but was performed on a computer. Participants examined *Consumer Reports*-style information about the options, reported their attitude toward each of the five options, and elaborated on their attitude toward either a positive or a negative target option (thus increasing attitude accessibility of either a positive or a negative option). In contrast to Experiment 1 where we used pretest data to select the target options, here the option participants's elaborated on was either their second most positive or second most negative option based on their responses to the attitude measures. They were next either asked to report their general intentions, or not, did a filler task, and either made a stimulus-based choice ($n = 94$) or performed an attitude-accessibility-response latency task followed by a second set of attitude questions ($n = 98$). We measured response latencies by asking participants to indicate whether each of a series of options was a good or a bad option by pressing "1" to indicate good and "0" for bad. We also measured control latencies by measuring participant response to each of the following unrelated brand stimuli: Nike, Sony, and Dow Chemical. (Pretesting showed Nike to be positive, Sony to be neutral, and Dow Chemical to be a negative brand).

³Because measuring general intentions only marginally increased recall of the target option, it is possible that we did not find increased choice of the target brand because measuring general intentions did not significantly increase label accessibility for the target option. We therefore replicated this experiment using an interactive computer interface rather than paper and pencil surveys. The computer interface permits the unobtrusive measurement of the accessibility of choice option cognitions through response latency measurement (Fazio et al., 1986). The results, with control response latency included as a covariate, demonstrated that although measuring general intentions leads to shorter response latencies (i.e., a more accessible brand name), this difference did not follow through to choice. When general intentions are measured, the average adjusted latencies are shorter than when they are not measured, $F(1, 36) = 31.12$, $p = .001$. However, as in Experiment 2, there was no difference in choice of the target option when intent was measured (27.6%, $n = 29$) and when it was not (38.1%, $n = 21$) ($z = -0.786$, $p = .22$, one-tailed test).

TABLE 4
Experiment 3 Results (n = 192)

	<i>General Intentions Measured</i>		<i>General Intentions Not Measured</i>	
	<i>Response Latency</i>	<i>Stimulus-Based Choice</i>	<i>Response Latency</i>	<i>Stimulus-Based Choice</i>
Positively Valenced Option				
Response latency for target option (msec)	655	77.8%	2001	28.6%
Percentage choosing sample size	32	18	21	21
Negatively Valenced Option				
Response latency for target option (msec)	635	3.6%	2603	14.8%
Percentage choosing sample size	14	28	31	27

Results

The results, shown in Table 4, again support a changing attitude accessibility explanation. We tested for differences in the latencies of the target option using an ANOVA with response latency as the dependent measure and intent–no intent, attitude valence of the target option and their interaction as independent factors with control latency included as a covariate. There was a significant main effect of intent–no intent measurement and a marginally significant main effect of valence such that positively valenced targets had slightly shorter response latencies, $F(1, 93) = 3.15, p = .08$. More important, the average response latencies for the target options were shorter when general intent was measured versus when it was not, $F(1, 93) = 92.89, p = .0001$, indicating that general intent measurement leads to more accessible attitudes toward the target options.

The percentage of participants who chose the positive target option was greater when intent was measured (77.8%, $n = 18$) than when it was not (28.6%, $n = 21$) ($z = 3.06, p < .001$, one-tailed test of proportions), and the percentage who chose the negative target option was marginally lower when general intentions were measured (3.6%, $n = 28$) than when they were not (14.8%, $n = 27$) ($z = 1.44, p = .075$, one-tailed test of proportions). We also used categorical ANOVA where the dependent variable was a binary variable indicating whether the participant chose the target option, and independent variables were (a) valence of the option elaborated on and (b) whether the general intentions question was asked, and the interaction between (a) and (b). The two-way interaction was significant, $\chi^2(1) = 7.32, p < .01$, indicating that measuring intentions had a different effect for positively and negatively valenced target options. The planned contrast examining the increase in choice for the positive option was significant, $\chi^2(1) = 8.48, p < .01$, whereas the contrast for the decrease in choice for the neg-

ative option was not significant, $\chi^2(1) = 1.80, p = .18$. We examined whether the weaker effect for the negative option could again be due to differences in how participants rated the target positive and negative options. The average rating for the positive target option was 66.9 (attitudes in this computerized experiment were measured on a continuum ranging from 0 to 100, but using the same scale anchors as in Experiment 1), and the rating for the negative target was 40.6. Again, one potential explanation for the weaker effect for the negative target option is that it was not evaluated as extremely as the positive target.⁴

To test for attitude polarization as a function of category-intent measurement, we ran an ANOVA with polarization as a dependent variable. Polarization was computed for the focal option using the following procedure: When the initial attitude was above the scale midpoint (50 on a 1#–100 scale), we subtracted the attitude provided at the beginning of the experiment from the attitude provided at the end of the experiment (after exposure to a category-intent question for those in the intent condition). When the initial attitude was below the midpoint of the scale, polarization was computed by taking the difference between the attitude provided at the end of the experiment from the attitude provided at the beginning of the experiment. When the initial attitude expressed was exactly 50, we scored polarization as the absolute value of the difference.⁵ Independent factors in the ANOVA included (a) valence of the option elaborated on and (b) whether the general intentions question was asked, and the interaction between (a) and (b). Rather than attitudes becoming more extreme due to intent measurement, they became slightly less extreme between attitudes at the end of the experiment and those at the beginning. There were also no significant differences across

⁵These results did not differ if respondents with initial attitudes of 50 were excluded from the analysis.

⁶We also performed an alternative test for polarization by running an ANOVA on time 2 attitude with independent factors (a) valence of the option elaborated on, (b) whether the category-intentions question was asked, and (c) the interaction between (a) and (b). In addition, time 1 attitude was included as a covariate. If polarization was occurring we would expect to see a significant two-way interaction between intention measurement and valence. This interaction was not significant, $F(1, 93) = 0.09, p = .76$, consistent with the other test of polarization.

⁴We also performed a meta-analytic pooled test of a decrease in choice of the negative target due to general intent measurement for the negative options across this and another experiment not reported in this article (Rosenthal, 1991, p. 93). Pooling across the results of these two experiments, participants whose intentions were measured were significantly less likely to chose the target option than participants whose intentions were not measured ($z = 2.62, p = .0043$).

conditions. Neither the main effect of valence, $F(1, 94) = 1.07, p = .30$, the main effect of category intent, $F(1, 94) = 1.66, p = .20$, or the two-way interaction, $F(1, 94) = 0.93, p = .34$, provided any support for an attitude-polarization effect caused by asking category intent.⁶

GENERAL DISCUSSION

The purpose of this article was to investigate why measuring general intentions changes specific-choice behavior. The results of our experiments suggest that measuring general intentions increases the accessibility of attitudes toward specific options in the choice set. In this study we found that participants were more likely to choose a candy bar for which they hold positive attitudes and are less likely to choose a candy bar for which they hold negative attitudes if these attitudes are made more accessible by general intentions measurement.

We designed the experiments to determine which set of potential explanations drives the mere-measurement effect. Specifically, in the experiments label, attitude and intention accessibility effects would have different outcomes. However these effects can occur together and have collinear effects. For example, retrieving a brand attitude may also lead to the retrieval of the brand name. Similarly retrieval of a brand intention may also lead to attitude and label retrieval. We recommend continued research in this area to help determine what sets of cognitions become more accessible with intent measurement at different stages in the decision-making process and how these enhanced cognitions work together to influence choice.

The results of this research raise several questions that might be explored in future studies. We did not find support for the label or intent accessibility explanations. It is possible that these processes do occur but that the manipulations used in our experiment were not strong enough to produce choice effects. We recommend that future studies use different manipulations to enhance label and intent accessibility to further explore their potential effects.

Unexpectedly, the observed effect on choice for positive target options was stronger than for the negative target options. One possible explanation for this was that participants did not rate the negative target options as extremely as the positive target. An alternative explanation might be that measuring general intentions increases both label and attitude accessibility. Thus for positive options, both the accessibility of the choice option label (i.e., the brand name) and the accessibility of the positive attitude lead to increases in choice. However, for negative options, whereas increased accessibility for the negative attitude would decrease choice, increased label accessibility would dampen that effect by increasing choice. Our tests in Experiments 1 and 2, however, demonstrate that measuring general intentions does not lead to a corresponding increase in choice for the choice option with the most accessible name or label, suggesting that this

counterexplanation does not account for any differences in the magnitude of the results for negative and positive options. Finally, a third possible explanation for these differences is related to the maximum possible increase or decrease in choice shares for the positive and negative target options, respectively. For example, in Experiment 3, in the absence of general intent measurement, choice of the negative target is already quite low (i.e., 14.8%) so there is only limited room to observe decreases in choice due to intent measurement. By contrast, in the absence of intent measurement choice of the positive target is moderate (i.e., 28.6%) so there is a great deal of room to observe increases in choice due to intent measurement. We suspect that the fact we observe a smaller magnitude effect on choice for the negative target option is a result both of the first and third of these explanations.

We find that measuring intentions increases attitude accessibility, which in turn influences behavior. In Experiments 1 and 3, when intentions were measured after participants elaborated on their attitude, their attitude became more accessible and their choice more consistent with their attitudes. However, simply measuring attitudes as we did in these experiments should also increase attitude accessibility and influence choice. Our design did not allow us to separate the effects of attitude and intention measurement and to determine what factors amplify and disrupt measurement effects. We think this is an interesting topic worthy of future research.

Previous research has found that under certain conditions the more frequently attitudes are expressed, the more polarized they become (Downing et al., 1992). The results of our experiments do not, however, provide support for this hypothesis. No change in attitude polarization was observed as a result of measuring general intentions. It appears that repeated attitude expression operates slightly differently than general intent measurement, perhaps because general intent measurement does not directly prime attitudes toward specific options in the choice set, but does so indirectly through priming thoughts about the general behavior. Future research might explore this interesting dissociation.

Finally, future research should examine the limiting conditions of both the general and specific mere-measurement effects. It is possible that measuring intentions only changes behavior when the attitudes and intentions associated with the behavior are labile. Perhaps the effect would not occur at all or would be much smaller in magnitude for individuals who hold strong, well-formed attitudes and intentions. The specific mere-measurement effect occurs because there are differences in attitude accessibility across options in the choice set. Therefore the specific effect is likely not to occur in situations where all choice options have equal accessibility levels. Although this research has shed considerable light on how the mere-measurement effect operates, many interesting questions remain to be answered.

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