

## THE EFFECTS OF DISSIMULATION ON THE ACCESSIBILITY AND PREDICTIVE POWER OF WEAKLY HELD ATTITUDES

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This research examines the effects of lying about one's attitudes (attitude dissimulation) on various strength-related consequences for weakly held attitudes. Dissimulation for weak attitudes could either produce a strengthening effect on the underlying attitude (if lying involves activation of the true attitude) or a weakening effect (if lying sets up a competing link to the false attitude). Results from three experiments using different dissimulation paradigms support the strengthening hypothesis. Lying about one's attitudes increases accessibility of the attitude, as well as its persistence and correspondence with behavior. These findings provide evidence for the far-ranging consequences of lying about one's attitudes. Other implications and opportunities for future research are discussed.

Anecdotal evidence as well as academic research supports the idea that people often lie to one another (DePaulo, Kashy & Kirkendol 1996; Kashy & DePaulo, 1996). In particular, misrepresentation of one's true attitudes is a frequent occurrence. For instance, an individual who does not wish to be perceived as a racist may lie about negative attitudes toward minorities, and an employee who wants to be favorably evaluated

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may lie regarding true feelings about the boss. Attitude dissimulation can even occur in less ego-involving contexts. For example, we can all recall instances of complimenting a friend about a new acquisition even when we did not really like it. Survey research has also documented that people often lie in their responses to attitude surveys for reasons of social desirability (cf. Sudman & Bradburn, 1982). Given that we engage in such dissimulation, it is important to understand its consequences, which may be more significant than typically assumed.

Research in the area of attitude dissimulation has examined the effect of deception on the deceiver's own attitudes and has concluded that people tend to change their attitudes in the direction of the lie (Bem, 1972; Festinger, 1957; Salancik & Conway, 1972). However, more recent research has found that such attitude change is limited to cases where dissimulation is freely chosen by the deceiver and has negative consequences for which the deceiver feels personally responsible (Cooper & Fazio, 1984; Scher & Cooper, 1989). In many situations however, dissimulation does not have aversive consequences for the dissembler. For example, telling a friend that his new suit looks good (when you think it looks quite bad) may actually produce positive consequences for the friend as well as the dissembler. Research suggests that, in this situation, true attitudes may not change in the direction of the lie. However, recent findings indicate that attitude dissimulation, even when it does not have aversive consequences, may still have important attitudinal effects such as influencing the strength of the underlying attitude (Maio & Olson, 1995, 1998).

Specifically, Maio and Olson (1995) used a forced dissimulation paradigm which minimized possible aversive consequences and found that lying about one's attitudes toward various objects produced a significant reinforcement of true attitudes as manifested in increased attitude accessibility. A subsequent paper extended these results to show that dissimulation also increased the influence of the underlying attitude on judgments of attitude-related issues (Maio & Olson 1998). In this paper, we seek to further our understanding of this counterintuitive effect by broadening the scope of the investigation along two major directions. While Maio and Olson focused exclusively on the effects of dissimulation on attitudes that were strongly held (e.g., attitudes toward murder, friendship, etc.), we examine weak attitudes as well. As explained in greater detail subsequently, an examination of dissimulation effects for weak attitudes provides a stronger test of the strengthening hypothesis

tested by Maio and Olson. This extension is also of interest because attitudes are not always held very strongly. For example, in contrast to attitudes toward emotional, ego-involving issues, people often hold relatively weak attitudes toward products and brands. In fact, it seems plausible that people may be more likely to lie about issues/objects toward which they feel less strongly; accordingly, it is important to examine the effects of lying about such attitudes.

In addition to extending the study of dissimulation effects to weakly held attitudes, this research also investigates the impact of dissimulation on some important consequences of attitude strength other than attitude accessibility. In particular, lying takes on particularly important implications if its effects can be shown to affect actual behavior. Accordingly, while Experiment 1 examines the effects of dissimulation on attitude accessibility, Experiments 2 and 3 extend the research to study consequences such as attitude persistence and the attitude-behavior link.

## THEORETICAL FRAMEWORK

### ATTITUDE STRENGTH AND ATTITUDE ACCESSIBILITY

The present research draws on Fazio's (1986, 1995) definition and operationalization of attitude strength in terms of attitude accessibility. Fazio has relied on the associative network model of memory to conceptualize attitude strength as the associative strength of the link between an attitude object and its evaluation. Attitude strength is considered to be the underlying characteristic of attitudes that determines their accessibility or ease of retrieval. If the object-evaluation association is strong, the evaluation is expected to be easy to access upon exposure to cues relating to the target object. Accordingly, the time taken to retrieve an evaluation of an object in response to a direct inquiry is used to measure attitude strength (Fazio, 1995).

Under this conceptualization, attitude accessibility is related to other dimensions of attitude strength such as attitude certainty and extremity. Significant correlations have been found between response latency measures of attitude accessibility and measures of attitude extremity and importance (Bargh et al., 1992; Krosnick et al., 1993; see also Fazio, 1995 for a discussion). The significance of attitude accessibility is further highlighted by its crucial role as a factor that moderates the effects of attitudes on consequences such as stability and behavior (Berger & Mitchell, 1989; Fazio, Powell & Williams, 1989; Zanna, Fazio, & Ross, 1994).

Research on the antecedents of attitude accessibility (and the underlying construct of attitude strength) has reliably documented that repeated attitudinal expression serves to increase accessibility (Fazio et al., 1982; Fazio, Powell & Herr, 1983; Fazio et al., 1989; Powell & Fazio, 1984). For instance, Fazio et al. (1982) found that participants who had repeatedly expressed their attitudes were subsequently faster at responding to an attitudinal inquiry, as compared to control participants who expressed their attitudes only once. This finding follows directly from the conceptualization of attitudes as object–evaluation associations. Principles of associative learning (Anderson, 1990) posit that the more often an association is rehearsed, the stronger it becomes. Thus, repeated attitudinal expression increases attitude strength and consequently attitude accessibility. Increased accessibility, in turn, is manifested in lowered response latency of attitude expression when cued by the attitude object.

#### ATTITUDE DISSIMULATION AND ACCESSIBILITY

If repeated expression of true attitudes increases attitude accessibility, what happens when people lie about their attitudes? Because lying involves a conscious intention to deceive (e.g., DePaulo et al., 1996), dissimulating about one's attitude first requires activating the true attitude itself. Therefore, in the same way as true attitude expression, repeated dissimulation involves repeated activation of the true attitude and should result in increased accessibility of the true attitude. Maio and Olson (1995) tested this hypothesis using a within–subjects design in which participants were asked to repeatedly express false or true attitudes toward a variety of objects. Only well–known objects/issues, toward which attitudes were strongly held, were included in the investigation (e.g., “puppies,” “rapists,” “friendship” etc.). Results revealed that, just as with repeated expression of an attitude, repeated lying (vs. no attitudinal expression) also led to increased attitude accessibility of true attitudes. Thus, somewhat counter–intuitively, dissimulation was found to actually strengthen the underlying true attitude.

While Maio and Olson (1995) have documented the effects of dissimulation for strongly held attitudes, a study of weak attitudes carries the potential to shed further light on the processes set in motion by dissimulation. Specifically, it is possible to arrive at two opposing hypotheses regarding the effects of dissimulation. Although Maio and Olson obtained

evidence for a strengthening effect, a case might also be made for the converse—namely, that lying should actually lead to a weakening effect. This prediction is based on the premise that repeated dissimulation sets up a new link between the attitude object and the “false” attitude that was expressed. The memory node representing the attitude object will then get associated with two competing links—the existing link to the “true” attitude, and the new link to the “false” attitude. The existence of such ambivalent elements in attitude structure should lower the accessibility of the true attitude, because respondents have to choose between these mutually conflicting evaluations (Bargh et al., 1992; Bassili, 1998, Lavine, Borgida & Sullivan, 2000). In fact, Maio and Olson (1995) themselves acknowledge that “attitude dissimulation might decrease the accessibility of the true attitude because it establishes an associative connection between the attitude object and the false attitude” (p. 130).

It can be argued, however, that such response competition (and therefore, weakening) effects are unlikely to be observed for attitudes that are strongly held, such as those studied by Maio and Olson (1995). In such cases, even if a competing link is set up by dissimulation, the strength of this new link is likely to be far lower than the strength of the link to the true attitude. Comparability in activation levels (of the two competing links) is an important prerequisite for response competition to occur (Bassili, 1998, Lavine et al., 2000; Mowrer, 1960); accordingly a weakening effect of dissimulation may not be observed for strong attitudes. For weakly held attitudes, on the other hand, the link to the true attitude will possess a low level of activation comparable to that of the relatively weak link that exists between the object and the false attitude, thus increasing the likelihood of ambivalence and response competition.

While a weakening effect is more likely to be observed for weak rather than strong attitudes, it should be noted that the prediction of a weakening effect relies on the assumption that the false attitude is encoded as a competing node in respondents’ memory structure of the true attitude. Because the act of dissimulation involves conscious intent, such a structural change may not obtain, even for weak attitudes. When lying, respondents are fully aware that they are expressing an attitude that is not their true one. Accordingly, the false attitude may not form part of the attitude structure. If so, there will be no conflict between the false and true attitude; and ambivalence and response competition effects will not come into play, removing the basis for a weakening effect of dissimula-

tion. Rather, the straightforward activation-based process proposed by Maio and Olson (1995) suggests that dissimulation should lead to a strengthening effect for weak attitudes as well. Specifically, as in the case of strong attitudes, lying about a weak attitude should simply involve activating the underlying true attitude, thus increasing its accessibility with respect to a control group.

Experiment 1 provides an empirical test of these opposing predictions, in the context of lying about strongly-held vs. weakly-held product attitudes. For strong attitudes, we expect to replicate Maio and Olson's results such that repeated dissimulation should lead to a strengthening effect. For weak attitudes, however, we do not make an a priori prediction. Either a weakening or a strengthening effect might be obtained. A weakening effect would provide support for the idea that dissimulation produces structural changes, setting up a competing node in the respondent's memory representation of the true attitude. On the other hand, a strengthening effect would enable a generalization of earlier results, and further bolster the activation-based explanation for dissimulation effects.

## EXPERIMENT 1

### BACKGROUND

This experiment examines the effects of attitude dissimulation on attitude accessibility of brands toward which attitudes are strongly versus weakly held. We selected the domain of products both because people often lie about product attitudes (Sengupta, Dahl, & Gorn, 1997), and also because people are likely to hold strong as well as weak attitudes toward different brands of products (Fazio et al, 1989). We compare the time taken to report true attitudes for brands toward which participants hold strong versus weak attitudes under three conditions – repeated expression of true attitudes, repeated expression of false attitudes (i.e., dissimulation), and no prior attitude expression. The structural change/interference perspective predicts that dissimulation will decrease attitude accessibility (vs. control) for weak attitudes. On the other hand, the activation perspective predicts that for weak as well as strong attitudes, both truthful expression and dissimulation should lead to greater attitude accessibility compared to the control condition.

## METHOD

### Overview

Seventy-seven undergraduate students (93% female) participated in the  $2 \times 3$  experiment which was designed so that brand attitude strength (strong versus weak) and attitude expression (true vs. false vs. control) were manipulated within-subjects. We created three sets of brands consisting of five strong-attitude and five weak-attitude brands in each set. Following Fazio et al. (1989), we classified brands as evoking a strong attitude or a weak attitude on the basis of time taken to express true attitudes toward a set of brands in a pretest. To manipulate attitude expression, participants repeatedly expressed true attitudes toward brands in one set, false attitudes toward brands in the second set, and no attitudes toward brands in the third set which served as a control. Three conditions were created by counterbalancing the brand sets toward which participants expressed true, false, or no attitudes. Participants were randomly assigned to one of the three conditions to ensure that each set served as the true, false or control set an equal number of times.

### Stimuli Selection Pretest

Forty students participated in the pretest in groups of 3 to 5. They were informed that they were participating in a computerized study of brand attitudes requiring them to provide evaluative responses to a set of brand names that would appear on the computer screen. Participants were told that each time a brand name appeared on the screen, they should hit the key labeled 'Like' (the / key) or the key labeled 'Dislike' (the z key) depending on whether they liked or disliked that brand. It was emphasized that both speed and accuracy were extremely important in this task. Ten practice trials were included to familiarize participants with the task. Participants then responded 'Like' or 'Dislike' to 184 brands in different product categories. Next, participants were given a questionnaire where they rated each of the brands on a 5-point brand attitude scale (1 = dislike very much, 5 = like very much) and a 5-point brand familiarity scale (1 = extremely unfamiliar, 5 = extremely familiar).

The thirty brands to which the average response time was the fastest (i.e., the strong-attitude brands) and the thirty brands to which the average response time was the slowest (i.e., the weak-attitude brands) were short-listed for consideration. Fifteen brands from each short list were selected if they were familiar (i.e., means above the midpoint of 3 on both

scales). Three sets were created with each containing five strong and five weak brands so that the three brand sets were equally liked ( $M$ 's = 3.24, 3.32 and 3.37,  $F(2,76) = 2.4, p > .05$ ).<sup>1</sup>

### Main Experiment Procedure

The main study was carried out two weeks after the pretest, with a different set of participants (from the same subject pool as the pretest participants). All participants were told that the main study consisted of four separate experiments. To distract participants from the true purpose of the experiment, they were told that experiments 2, 3, and 4 (phases 2, 3, and 4 below) involved examining the effects of subliminal noise on task performance (cf. Maio & Olson, 1995). They were informed that a special speaker installed in the computer would play subliminal noise at various points during the second, third and fourth studies and that they would be unable to hear this noise.

*Phase 1: Initial Attitudes.* Participants were told that this was a study about their opinions of various brands and they rated all thirty brands on liking scales (anchored at 1 = dislike very much and 5 = like very much). Except for seven brands that scored around 2.5, all brands scored a mean above 3.0 on this scale, indicating that they were generally liked brands.

*Phase 2: Manipulation.* Participants then went through the manipulation of repeated attitude expression where they expressed true attitudes toward 10 of the 30 brands 10 times each and false attitudes toward another 10 of the 30 brands 10 times each. They were told to respond as quickly and accurately as possible. Instructions to provide true or false attitudes were presented along with brand names on the computer screen, one at a time, and participants pressed the key labeled 'Like' or the key labeled 'Dislike' depending on the instructions and their true attitudes toward the brand. Thus, if the word 'False' appeared along with a brand that participants actually liked (disliked), they pressed the 'Dislike' ('Like') key.

As described in the experiment overview, the sets of brands were counterbalanced across participants. Each set contained 10 brands.

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1. As expected based on the frequently observed correlation between attitude extremity and attitude strength (cf. Krosnick et al., 1993), it was not possible to equate liking of strong and weak brands. The final set of 15 strong brands were liked more than the 15 weak brands ( $M$ 's = 3.43 versus 3.19;  $F(1,38) = 11.42, p < .01$ ).



One-third of the participants expressed true attitudes toward one of the three sets and false attitudes toward another of the three sets with the third set serving as a control toward which they did not express any attitudes. There were 10 blocks of presentation of the 20 brands. Within each block the 20 brands were presented in a random order and participants expressed true attitudes toward 10 brands and false attitudes toward 10 brands. Thus, each participant expressed his or her true or false attitudes on 200 trials. This procedure is similar to that used by Maio and Olson (1995).

*Phase 3: Dependent Measures.* As in phase 2, participants were asked to respond as quickly and accurately as possible by pressing the key labeled 'Like' or 'Dislike.' They were told that they should express their true attitudes toward all the brands in this study. After responding to ten practice brands, participants were presented with the thirty brands in random order, one at a time, on the computer screen and pressed 'Like' or 'Dislike' based on their true attitudes toward the brand. Responses as well as response times were recorded by the computer. While the responses on the initial liking scale suggest that all brands were liked on average, responses on the dichotomous scale revealed a fair number of "dislike" responses (761 of 2,304 responses were dislike). Therefore, dissimulation was not exclusively restricted to falsely reporting dislike of a liked brand; the reverse scenario also occurred in some cases. Our results on attitude accessibility were unaffected by initial attitude valence. Thus, analyses were pooled across this factor (past dissimulation effects have also been obtained for both liked and disliked objects; Maio & Olson, 1995). This ended the computer portion of the experiment.

*Phase 4: Final Attitudes.* Participants were then told that the experimenters were interested in the effects of subliminal noise on brand judgments and they filled out the same liking scales as in phase 1. This measure was taken to check whether the attitude expression manipulation led to a change in attitudes. In addition, they filled out a familiarity scale anchored at 1 = extremely unfamiliar with brand and 5 = extremely familiar with brand.

## RESULTS

For the first set of analyses, the data for each participant were aggregated across the five strong and five weak brands within each attitude expression set (true, false, control). The counterbalancing factor did not signifi-

cantly interact with the independent variables and is hence not discussed further.

All analyses were conducted using a  $2 \times 3$  within-subjects design with Attitude Strength (strong vs. weak) and Attitude Expression (true vs. false vs. control) serving as factors. For both strong and weak attitudes, comparisons of attitude accessibility in the control condition with each of the attitude expression conditions (true as well as false) were of central interest. We note that no gender effects were obtained on any of the outcome measures; thus, the results reported below are pooled across gender.

### Manipulation and Confounding Checks

Comparison of the like/dislike responses in the manipulation phase with the responses in the dependent variable phase confirmed that participants followed attitude expression instructions. The strong and weak brands were reassuringly rated to be equally familiar ( $M$ 's: 3.65 vs. 3.61,  $p > .9$ ).

To determine whether attitude expression caused attitude change, the absolute difference in liking ratings collected in Phase 1 versus Phase 4 was calculated for each participant. This change variable was then subjected to a  $2$  (strong vs. weak)  $\times$   $3$  (true vs. false vs. control) within-subjects ANOVA. The only significant effect obtained was a main effect for Attitude Expression ( $F(2,138) = 4.36, p < .05$ ). Pair-wise comparisons were conducted (collapsing across the strength factor) and revealed that attitudes changed more when attitudes had been expressed truthfully versus not expressed at all ( $M$ 's:  $.26$  vs.  $.19$ ;  $t(69) = 2.62, p < .05$ ). Attitudes also changed more when attitudes had been expressed falsely versus not expressed at all ( $M$ 's:  $.25$  vs.  $.19$ ;  $t(69) = 2.46, p < .05$ ). Means in the truthful expression condition did not differ from those in the false expression condition ( $t < 1$ ). That similar degrees of attitude change were obtained for truthful and false expression refutes the possibility that the attitude change in the dissimulation condition was due to dissonance reduction following a counter-attitudinal task (Scher & Cooper 1989); rather, it is more likely that the attitude change obtained by our manipulations was due to processes such as mere thought, according to which thinking about an attitude object can itself produce attitude change (Tesser, 1978) or even mere exposure, which suggests that simply being exposed repeatedly to an object can lead to attitude change (Zajonc, 1968).

To determine whether attitudes changed in a particular direction, raw attitude change scores (time 2 – time 1) were also subjected to a  $2 \times 3$  ANOVA. The only significant effect was one of attitude strength ( $F(1,69) = 10.01, p < .01$ ), with somewhat greater change observed for strong attitudes compared to weak attitudes ( $M_s = .142$  vs.  $.053$ ). More importantly, the finding that raw attitude change was not affected by the attitude expression factor rules out the possibility that the hypothesized difference in attitude strength across the different expression conditions is driven by differences in attitude change. However, because attitude expression did have a significant effect on the absolute level of attitude change, it is possible that the effects of attitude expression on attitude accessibility might be accounted for by its effects on absolute attitude change. Absolute attitude change is therefore included as a covariate in an analysis of response times to control for this possibility.

#### **Attitude Accessibility**

The accessibility of respondents' true attitudes (as manifested in response latency) was the primary dependent variable of interest. For strong-attitude brands, we expected that both repeated truthful and false expression would result in increased accessibility as compared to the no-expression control group. For weak-attitude brands as well, repeated truthful expression should increase attitude accessibility. However, repeated false expression could either yield lower accessibility as compared to the control (if an interfering link is created as a result of dissimulation) or higher accessibility (if dissimulation simply involves activation of the true attitude, rather than a structural change).

Most participants took approximately 900 milliseconds to respond and none of the responses were greater than 1600 milliseconds or less than 500 milliseconds. All responses were therefore retained for the analyses. Mean latencies are in Table 1.

A  $2 \times 3$  within-subjects ANOVA on the response times revealed a main effect for attitude strength ( $F(1,76) = 54.47, p < .01$ ), such that response times toward strong-attitude brands were faster than those toward weak-attitude brands. This finding confirmed the validity of our manipulation of initial attitude strength. A significant main effect was also obtained for attitude expression ( $F(2,152) = 34.49, p < .01$ ). Follow-up contrast analyses revealed that, as expected, true expression increased accessibility relative to the control condition ( $M_s = 908$ ms vs.  $1115$ ms;  $t(76) = 8.5, p < .001$ ). The same pattern was observed for false ex-

TABLE 1. Experiment 1: Attitude Accessibility Measured By Response Times To Report True Attitudes

	True Expression (SD)	False Expression (SD)	Control (SD)
Strong Brands	865 (196)	908 (233)	1011 (222)
Weak Brands	950 (237)	1027 (279)	1219 (289)

Note. Response times in milliseconds.

pression ( $M$ 's = 968ms vs. 1115ms;  $t(76) = 5.86, p < .001$ ). Analyses of logarithmic transformations of the response times (to reduce skewness in the data) provided the same results as above.

Separate comparisons for strong and weak brands also confirmed the same pattern. For strong-attitude brands, participants were faster at expressing attitudes that they had repeatedly lied about ( $M = 908$  ms) or truthfully expressed ( $M = 865$  ms) than at indicating attitudes they had never previously expressed ( $M = 1011$  ms;  $t(76) = 3.46, p < .01$  and  $t(76) = 4.95, p < .01$  respectively). Thus, as expected, both repeated truthful expression and repeated dissimulation led to increased accessibility of the true attitude.

While the above result served to replicate earlier findings (Maio & Olson, 1995), we were particularly interested in examining the effects for weak-attitude brands. For these brands, repeated expression of true attitudes resulted in greater accessibility of true attitudes compared to the control condition ( $M$ 's = 950 ms vs. 1219 ms;  $t(76) = 7.09, p < .01$ ). More importantly, repeatedly expressing false attitudes also resulted in greater accessibility of true attitudes compared to the control condition ( $M$ 's = 1027 ms vs. 1219 ms;  $t(76) = 4.96, p < .01$ ). This "strengthening" finding supports a simple activation-based mechanism for dissimulation effects.

The main effects of attitude strength and expression were qualified by a significant interaction ( $F(2,152) = 3.78, p < .05$ ). This interaction appears to be driven by the greater difference between experimental and control conditions in the case of weak brands compared to strong brands. In other words, repeatedly expressing true or false attitudes is more helpful in improving accessibility of brands for which initial attitudes are relatively inaccessible. This finding is consistent with the idea of a ceiling on attitude accessibility—accessibility of brands with high initial accessibility cannot be increased much further whereas there is much room for improvement when initial accessibility is low.

Finally, because the absolute level of attitude change in the true expression and attitude dissimulation conditions differed from attitude change in the control condition, we wanted to rule out the possibility that the effects of attitude expression on attitude accessibility were due to the attitude change obtained in these conditions. We therefore included attitude change (the absolute value of the difference in attitude scores in phase 1 versus phase 4) as a covariate in an analysis of covariance. The analysis was performed across all trials of all participants (each trial served as one observation) with response time as the dependent variable and attitude strength and attitude expression as independent variables. The attitude change score was a marginally significant covariate ( $F(1,2082) = 3.33, p < .10$ ) and the main effect of attitude expression remained significant ( $F(1,2082) = 36.15, p < .01$ ) as did the relevant contrasts. This same result was replicated even when the analyses were conducted separately for strong and weak attitude brands. Thus, it is unlikely that the obtained effects on attitude accessibility are driven by the observed differences in absolute attitude change.

## DISCUSSION

Replicating Maio and Olson's (1995) results in a product attitude context, we found that repeatedly lying about strongly held attitudes produced a strengthening effect, that is, an increase in accessibility of the true attitude compared to a no-expression control group. More importantly, Experiment 1 showed that repeatedly lying about relatively weak attitudes also increased true attitude accessibility. Thus, the strengthening effect of dissimulation holds for weak attitudes as well. This result not only extends the domain of the strengthening effect, but also presents stronger evidence against the idea that attitude dissimulation leads to change in attitude structure by setting up a competing link between the attitude object and the false attitude. Had this occurred, a weakening effect would have been the likely outcome of repeated lying about already weak attitudes. Such an effect was not observed. Rather, the observed strengthening effect for weak attitudes supported an activation-based mechanism, according to which dissimulation, rather than producing structural changes, simply leads respondents to think of their true attitudes, resulting in increased accessibility.

While Experiment 1 extends earlier findings and provides stronger support for an activation-based view of dissimulation, the focus on atti-

tude accessibility as the sole measure of attitude strength seems somewhat narrow given the multi-dimensional nature of the strength construct (Krosnick & Petty, 1995; Raden, 1985). Various qualities of attitudes such as accessibility, conviction, confidence, and the predictive power of the attitude—in the sense of predicting behavior as well as future attitudes—have all been posited to operationalize attitude strength (Eagly & Chaiken, 1993). In a general sense, all these dimensions differentiate “strong” and “weak” attitudes. However, these dimensions are often not highly correlated and researchers have questioned whether attitude strength is a global, unitary property of attitudes (Krosnick et al., 1993; Raden, 1985). Thus, examining the effects of dissimulation on operationalizations other than attitude accessibility would be useful.

Apart from its theoretical significance, such an investigation has the potential to further highlight the insidious consequences of lying about one’s attitudes. For example, Maio and Olson (1998) found that because lying about an attitude makes the true attitude more accessible, lying can influence subsequent judgments of related issues (cf. Roskos-Ewoldsen & Fazio, 1992). Experiment 2 investigates other important, strength-related consequences of dissimulation, such as the confidence with which the attitude is held, the degree to which it endures over time, and perhaps more importantly, the extent to which it influences actual behavior. This experiment focuses solely on weak attitudes in light of our reasoning that obtaining strengthening effects for such attitudes, rather than for strong attitudes, provides a stronger test of the effects of dissimulation. As described in more detail subsequently, Experiment 2 also provides further evidence for the activation-based mechanism posited to underlie the effects of dissimulation.

## EXPERIMENT 2

### ATTITUDE-BEHAVIOR CORRESPONDENCE, ATTITUDE PERSISTENCE, AND ATTITUDE CONFIDENCE

Two commonly studied consequences of attitude strength, which also highlight the practical ramifications of the strength construct, are attitude-behavior correspondence (Berger & Mitchell, 1989; Fazio et al., 1989) and attitude persistence (Erber, Hodges, & Wilson, 1995; Haugtvedt et al., 1994; Petty, Haugtvedt & Smith, 1995). Both of these consequences are strongly influenced by attitude accessibility. Accessible attitudes are likely to exhibit a stronger link with behavior (Fazio et

al., 1983; Fazio et al., 1989; Fazio & Williams, 1986), and also to remain more stable over time, although evidence for the latter proposition is relatively sparse (Zanna, Fazio, & Ross, 1994). The explanation for both these effects relies on the idea that accessible attitudes are more likely to be spontaneously activated and retrieved from memory. Such retrieval guides perceptions of the attitude object, thus directing behavior in a manner consistent with the valence of the attitude. Similarly, accessible attitudes are more easily retrieved from memory after a period of time. Accordingly, the correspondence between initial and delayed measures of attitude is likely to be higher for accessible attitudes. For less accessible attitudes however, salient environmental factors may have a greater impact on the delayed evaluation measure than the original attitude itself, thus lowering the degree of persistence.

Experiment 1 showed that repeated dissimulation, even for weak attitudes, increased attitude accessibility as compared to a no-expression control group. Accordingly, we predict that repeated dissimulation should also produce increases in the attitude-behavior link as well as attitude persistence. Note that once again, the alternative hypothesis, involving the formation of a competing link in attitude structure, would predict exactly the reverse—in particular, the presence of such opposing links has been shown to produce both lower attitude persistence (Rosenberg, 1968) and also a lower attitude-behavior link (Norman, 1975; Sengupta & Johar, 2002), due to factors such as heightened attitudinal ambivalence. Thus, an empirical test of the effects of dissimulation on these outcomes will further help to distinguish between the two opposing hypotheses.

Finally, based on the premise that dissimulation involves activation of the underlying true attitude, we argue that repeatedly lying about one's attitudes should also increase the confidence with which the true attitude is held.<sup>2</sup> This prediction is based on prior research that has found that repeatedly making the same decision increases confidence in that decision (Einhorn & Hogarth, 1978). By analogy, repeatedly activating the same attitude should increase confidence in that attitude (see Berger,

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2. Indeed, recent research has shown that people may use accessibility as a heuristic to judge other qualities of their attitude (Roese & Olson, 1994). Viewed from this perspective, it might even be conjectured that the increased accessibility produced by repeated dissimulation could itself cause increased confidence. While the current investigation was not designed to test such a mechanism, it should be borne in mind.



1992; Berger & Mitchell, 1989 for a similar argument in the context of advertising repetition).

Experiment 2 tests the prediction that repeated dissimulation, in the context of weakly held attitudes, leads to increases in attitude–behavior correspondence, attitude persistence and attitude confidence, as compared to a no–expression control. While we were primarily interested in studying the effects of dissimulation, we also included two other experimental conditions. These were a repeated truthful expression condition and a repeated dissimulation condition in which respondents were instructed to think about their true attitudes while dissimulating (false–activate). Again, both these conditions should lead to an increase in attitude strength (as manifested along all three of our measures) compared to the control condition. The false–activate condition enables us to gain confidence in the activation process presumed to underlie attitude strengthening effects. Specifically, we force the presumed underlying process in this condition experimentally, and observe the effects in this condition versus the simple false expression condition. If the underlying process explanation is correct, we should see the same effects in both conditions. This study therefore serves to replicate and extend the previous study and to provide support for the proposed activation mechanism.

## METHOD

### Overview

The study was conducted in a classroom context and data were collected from several different undergraduate sections of the same course. The study consisted of two sessions spaced two days apart. In the first session, respondents provided attitude and behavior (choice) measures. Different experimental conditions were randomized within each data collection exercise (i.e., within each classroom). Two days later, in order to compute attitude persistence, research assistants returned to the classrooms (in which instructors had previously granted permission) and collected delayed attitude measures. Since some instructors did not permit the use of their classroom a second time, delayed measures could not be obtained from all the respondents who provided data at the first session. Thus, the sample size used for session 1 measures, such as the attitude–behavior link ( $n = 178$ , 70% female), differed considerably from the sample size used to compute attitude persistence ( $n = 84$ ). However, although there was a significant amount of participant attrition over



time, attrition levels did not vary across conditions, thus minimizing threats to internal validity.

### **Design and Procedure**

We manipulated four levels of attitude expression (truthful expression, false expression, false expression-plus-activation, and no attitude expression) in a between-subjects design. Thus, three groups of participants were asked to repeatedly express true, false, or no attitudes toward a set of four candy bars, while a fourth group was asked to think about true attitudes at the time of providing false attitudes. We refer to these conditions as "true," "false," "control," and "false-activate" respectively.

As explained earlier, we were particularly interested in the effects of dissimulation for weak attitudes. Therefore, we chose to study attitudes toward new brands induced by advertising. Prior research on advertising effects suggests that attitudes produced in such a scenario are likely to be quite weak, particularly in the context of single-exposure advertising for unfamiliar brands (Berger & Mitchell, 1989; Haugtvedt et al., 1994). Further, to ensure creation of weak attitudes, we induced low involvement conditions during message processing (Petty & Cacioppo, 1986). Specifically, participants were told that the study concerned new candy bars being successfully marketed in a different country (Canada) and that these candy bars would not be available to the students any time soon. Participants were also told that their individual opinions would be aggregated with those of others (see Petty, Cacioppo, & Schumann, 1983 for similar low involvement instructions). Because lack of experience with the attitude object can contribute to weakly held attitudes (Fazio & Zanna, 1978), we used Canadian brands (Crunchie, Caramilk, Mr. Big and Sweet Marie) pre-tested to be unfamiliar to the student participants in our experiment.

The stimulus booklet that was handed out to participants presented information about each candy bar on successive pages. Three types of information were presented for each bar: (a) the ad slogan and some marketing information about the brand; (b) a color picture of the candy bar; and (c) information on the candy bar's shelf life and availability in Canada. The information ensured that participants would have positive attitudes toward the brands. Negative brand attitudes were not studied in this investigation because of our focus on weakly held attitudes. Pilot testing revealed that while it was possible to create negative brand atti-

tudes by providing negative attribute information, these attitudes also tended to be quite strongly held—possibly because of the relatively rare occurrence of negative information in product settings. After exposure to the stimuli, participants received a second booklet that included the attitude expression manipulation and the measurement of dependent variables.

First, all participants completed two manipulation checks for message involvement ( $r = .60$ ). They were asked to indicate (a) how carefully they had read the product information, and (b) how interested they were in reading the product information, on two semantic differential 7-point scales anchored by “not at all” (1) and “very much so” (7). Next, participants were exposed to the manipulation of attitude expression. In each of the three experimental conditions, participants were asked to express evaluations toward the four candy bars on five dichotomous scales (like/dislike, bad/good, tasty/not tasty, favorable/unfavorable, positive/negative). Following Berger (1992), participants were exposed to all four brands on a single page with the brands presented in a different order for each of the five dichotomous scales. This was done to prevent mere retrieval of previously provided responses from one attitude activation to the next.

In the “true” condition (truthful expression), participants saw the brand name and the slogan and expressed their true attitude five times toward each of the four brands on five different dichotomous scales (each scale on a different page). In the “false” condition (false expression), participants were told: “some research has shown that asking people to express the opposite of their true feelings is a good way of measuring how they really feel.” Based on this rationale, participants were instructed to express the opposite of their true feelings toward the four brands on each of the five scales above (cf. Maio & Olson 1995). Subsequent open-ended probing revealed that participants accepted this rationale. Instructions in the “false-activate” condition (false expression-plus-activation) were exactly similar, with the addition that participants were asked to carefully think about their true feelings toward the brands before expressing the opposite of these feelings. Finally, participants in the control condition were given the slogan accompanied with the jumbled brand name and were asked to unscramble the brand names. All four brand names were presented on a single page and participants completed five different jumbles. This ensured that control participants were exposed to the brands the same number of times as

participants in the experimental conditions, controlling for any differences that might arise from automatic attitude activation in the experimental conditions.

Participants then responded to three seven-point evaluation scales (1 = bad, unfavorable, dislike; 7 = good, favorable, like) for each brand (Cronbach's  $\alpha > .80$  for each brand) and then provided demographic information. Following these measures, participants recorded how confident they were about their evaluations on a 1 (not at all confident) to 7 (very confident) scale. Finally, participants were told that promotional samples of the four candy bars would be available later, and that they should circle the name of the brand that they wanted to sample. This served as the measure of choice behavior. After two days, participants unexpectedly received the brand names and slogans and were again asked to provide evaluations on a similarly worded set of three evaluation scales (Cronbach's  $\alpha > .80$  for each brand), anchored this time at  $-4$  and  $+4$ . By using differently anchored scales at immediate and delayed measurement of attitudes, we hoped to prevent an affect referral phenomenon whereby participants would simply retrieve initial evaluations at delay.

## RESULTS

### Involvement

Levels of involvement were relatively low as desired ( $M = 4.00$  on a 7-point scale).

### Post-Manipulation Attitudes

Initial (pre-manipulation) attitudes (immediately after providing brand information) were not collected in this experiment so that the rationale for the dissimulation manipulation would not be jeopardized; accordingly, it was not possible to measure whether the different experimental manipulations led to different degrees of attitude change (i.e., post-pre manipulation attitudes) as compared to the control condition. However, a simple comparison of the post-manipulations attitudes across conditions was indicative. Analyses revealed a significant effect of condition ( $F(3,174) = 3.83, p < .05$ ). Post hoc Duncan tests then indicated that this effect was due to a more favorable post-manipulation attitude ( $M = 4.74$ ) in the true condition compared to the false condition ( $M = 4.35$ ) and the false-activate condition ( $M = 4.32$ ). More importantly, none of these three conditions was found to differ significantly from the control condi-

tion ( $M = 4.55$ ). Thus, the predicted improvement in attitude strength for the three experimental conditions as compared to the control cannot be explained by differences in the extremity of post-manipulation attitudes in experimental versus control conditions.

### Attitude Persistence

We computed the correlation between initial attitudes and attitudes measured after a two-day delay (see Hodges & Wilson, 1994 for a similar measure of attitude persistence). Two different analysis methods were used to compute the correlations. In the first method, a correlation was calculated for each respondent using the four initial attitude scores and the four delayed attitude scores for that respondent. These correlations were then converted to a Fisher  $z$ -score and subjected to an ANOVA (Berger, 1992; Fazio et al., 1989). A significant effect was obtained for Attitude Expression ( $F(3,80) = 3.75, p < .05$ ), with greater attitude persistence being produced in all experimental conditions as compared to the control ( $r$ 's: true = .87, false-activate = .74, false = .84, control = .51; all contrasts with control  $p$ 's < .05). See Table 2 for average correlations.

Second, following the procedure used by Fazio et al. (1989; see also Berger, 1992), we computed the correlation for each brand, pooled across all participants within each of the four conditions. Four correlation coefficients (one for each brand) were thus obtained in each condition. Each of these correlation coefficients was then converted to a Fisher  $z$ -score, and treated as a separate observation. Based on these data, ANOVA was used to test for differences across conditions, with brand as the unit of analysis. The results obtained were exactly similar to those obtained with the subject-level analysis. The overall effect of Attitude Expression was significant ( $F(3,12) = 4.00, p < .05$ ), and the pattern of correlations showed that attitudes were more persistent in all experimental conditions compared to the control condition ( $r$ 's: true = .77, false-activate = .79, false = .80, control = .55; all contrasts with control  $p$ 's < .05).<sup>3</sup>

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3. Given the low number of observations in each condition, a non-parametric ranks-sum test (Van der Waerden test) was also carried out for the correlations data. Results from this analysis were completely supportive of the ANOVA results. Analyses using these test revealed that correlations in all three experimental conditions differed significantly from the control (for each pairwise planned contrast:  $z = 2.24, p < .05$ ).

TABLE 2. Experiment 2: Attitude–Behavior and Initial–Delayed Attitude Correlations for Weak Attitude Brands

	True Expression	False Expression	False- plus- Activate	Control
Initial–delayed attitude	.87	.84	.74	.51
Attitude–behavior	.61	.54	.53	.39

Further, none of the three experimental conditions differed from one another.

#### Attitude–Behavior Correlation

The brand selected by each participant served as the measure of brand choice. Based on the same techniques discussed above, we used ANOVA to compare differences in point–biserial correlations across conditions. A marginally significant main effect of Attitude Expression was obtained from the subject–level analysis ( $F(3,160) = 2.13, p < .10$ ). Planned contrasts then revealed a greater attitude–behavior link for the three experimental conditions compared to the control condition ( $r$ 's: true = .61, false–activate = .53, false = .54, control = .39; all contrasts with control  $p$ 's < .05, one–tailed).

Results from the brand–level ANOVA revealed a marginally significant effect for the four level factor of Attitude Expression ( $F(3,12) = 2.19, p < .10$ ). Planned contrasts showed that the attitude–behavior correlation was significantly higher in the true condition versus the control condition ( $r$ 's: .48 vs. .33,  $F(1,12) = 5.57, p < .05$ ) and in the false–activate condition versus the control condition ( $r$ 's: .45 vs. .33,  $F(1,12) = 3.76, p < .05$ ). While the correlation in the false condition did not differ from that in the control condition ( $r$ 's: .39 vs. .33,  $F(1,12) = 1.10, p > .3$ ), the pattern of correlations was in the expected direction. The lack of significance is likely due to the lower statistical power in the brand–level analysis.

#### Attitude Confidence

Attitude confidence was analyzed by computing mean confidence levels in each condition (in this case, the same results were provided by a subject–level analysis as with a brand–level analysis). A significant main effect of Attitude Expression ( $F(3,174) = 3.27, p < .05$ ) was obtained. Con-

trasts then revealed greater attitude confidence for all three experimental conditions compared to the control ( $M$ 's: true = 4.64, false-activate = 4.74, false = 4.66, control = 4.18; all  $p$ 's < .05). None of the three experimental conditions differed from one another on this measure.

## DISCUSSION

Results on various strength indicators extended our previous results on the effects of attitude dissimulation. Repeatedly lying about weak attitudes was found to significantly increase attitude stability and attitude-behavior correspondence, and also attitude confidence, as compared to a no-activation control group. Taken together with earlier findings on attitude accessibility, these results provide convergent evidence for the somewhat paradoxical premise that dissimulation actually increases the strength of the underlying true attitude. Further, these results provide additional support for the notion that repeated dissimulation, even for weak attitudes, involves repeated activation of the true attitude, rather than formation of a competing link in attitude structure. The presence of such conflicting elements in attitude structure has been shown to dilute both attitude persistence (Rosenberg, 1968) and the attitude-behavior link (Norman 1975; Sparks, Hedderley, & Shepherd, 1992; Sengupta & Johar, 2002). It is extremely unlikely, therefore, that strengthening effects on these outcomes would have been obtained had dissimulation been accompanied by structural changes. Support for the activation perspective also comes from the finding that results in the false expression condition are the same as those in the false-activate condition where participants were expressly asked to think about their true attitudes at the time of dissimulation.

Our results also highlight the substantive implications of dissimulation. Clearly, if lying about one's feelings serves to make them endure longer, lying may be more consequential than might be supposed. Further, our findings on the attitude-behavior link suggest that lying can lead to actual changes in one's behavior—again, a result of significant import. In fact, unlike research which suggests that any changes in attitudes and behavior tend to be consistent with the expressed opinion (Bem, 1972; Salancik & Conway, 1972), we find that such changes actually occur in the direction opposite to the false expression.

While Experiments 1 and 2 provide support for the hypothesis that attitude dissimulation, even for weakly held attitudes, leads to significant

strengthening of the true attitude, inherent limitations in the attitude dissimulation manipulation should be noted. In both experiments, participants were simply told to report the opposite of their true attitudes on a scale; there was no mention of an audience to whom the participants were lying, and there was no requirement to make the lie believable. The artificial nature of this dissimulation manipulation may have entailed simple translation of true attitudes at the time of reporting attitudes, rather than actual lying. If such a translation process underlies the dissimulation manipulation, the results simply replicate several earlier demonstrations of the effects of true attitude expression (Fazio et al., 1982). For our research to speak more clearly to the effects of dissimulation, we need to study more naturalistic lying conditions. In particular, “real world” lies, rather than baldly stating a false opinion/assertion, typically include an attempt to make the lie believable to the recipient of the communication. This may be done in several different ways—the communicator may actually distort facts to support the lie; or focus only on those facts that support the false assertion (omitting to mention facts that are opposed to the lie); or seek to make the lie believable through exaggeration and emphasis.

It would be interesting to examine the effects of these more realistic forms of dissimulation on the strength of the underlying true attitude. In addition to enhancing the ecological validity of our findings, such an examination, especially in the context of weak attitudes, would also provide a stronger test of the alternative hypothesis that attitude dissimulation can lead to a weakening effect by creating a link between the attitude object and the false attitude. It can be argued that the lack of a weakening effect in Experiments 1 and 2 is due to the relatively weak nature of this competing link—that is, simply reporting a false attitude on a scale is insufficient to create a link to the false attitude that is strong enough to interfere with the existing link to the true attitude. However, providing a justification for one’s false opinions should serve to strengthen the link to the false attitude, thus increasing the possibility of a weakening effect. On the other hand, if a strengthening effect of dissimulation (vs. control) is observed even for such justification-inclusive lying, it may be inferred with some confidence that dissimulation, rather than changing the underlying attitude structure, simply serves to activate the true attitude.

Some evidence regarding the effects of “actual” lying (i.e., in which the respondent strives to make the lie believable) was obtained in a dissimu-

lation study by Maio and Olson (1998), in which participants were to write a lengthy counter-attitudinal essay in support of their false attitudes. Consistent with the premise that lying strengthens the underlying attitude, such dissimulation was found to increase the effect of the true attitude on subsequent judgments toward attitude-relevant issues. However, as with these authors' earlier work (Maio & Olson, 1995), the attitude object in this study (Albert Einstein) was a familiar one, toward which strong attitudes were held. As discussed earlier, the current research focuses on the effects of dissimulation for weak attitudes, both because people are likely to lie about such attitudes, and because the weak-attitude context (given the greater possibility of a weakening effect in this context) affords a stronger test of the strengthening effect of dissimulation. Accordingly, Experiment 3 examines the effects of realistic dissimulation on attitude strength for weak attitudes (e.g., attitudes toward unfamiliar objects); further, we extend Maio and Olson's (1998) results by examining the effects of several different types of lying strategies, as discussed below.

### EXPERIMENT 3

#### TYPES OF DISSIMULATION

One commonly used strategy that is used to make the lie believable involves actually misrepresenting issue-relevant facts in order to support the false opinion—that is, a lie of commission (e.g., saying that a friend's outfit looks very smart because it fits current fashion trends—even though, in reality, the outfit may be hopelessly dated). Maio and Olson's (1998) research on the strengthening effects of dissimulation focused on the effects of this type of naturalistic lying strategy. However, as DePaulo et al. (1996) have pointed out, communicators can also rely on other strategies to make their lies believable. In one such strategy, which may be termed a lie of omission, respondents seek to convince the audience by simply focusing on the facts that are supportive of the lie, omitting to discuss information that is discrepant with the lie (e.g., complimenting a friend on her new outfit by saying that the color is just right for her complexion, but omitting to mention that the style is very unflattering). Finally, communicators may also seek to convince the audience simply through exaggeration and emphasis, without providing any reasons for the lie (e.g., simply telling a friend that her new outfit looks "great!"), a dissimulation strategy that we term ly-



ing-with-puffery. Experiment 3 examines how each of these three different types of lies affect the strength of the underlying attitude, as compared to a control group in which participants do not engage in any form of attitude dissimulation. Based on the reasoning that dissimulation, whether it involves a strategy of commission, omission, or puffery, entails activation of the true attitude, our a priori expectation was that of attitude strengthening in all three lying conditions.

## METHOD

### Overview

Ninety-nine students (66% female) participated in this experiment in return for course credit. At the beginning of the session, participants were informed that they would be asked to complete three different marketing-related surveys. The first survey obtained pre-manipulation attitudes toward the attitude object, a new (and fictitious) brand of shampoo named Clean & Healthy. As in Experiment 2, an unfamiliar attitude object was chosen because of our interest in the effects of dissimulation for relatively weak attitudes. The second survey contained the experimental manipulation, which either required participants to lie about their attitudes toward Clean & Healthy in one of three different ways further described below (lie-commission, lie-omission, lie-puffery) or required them to express their attitudes toward a different product (control condition). The third survey then obtained post-manipulation attitudes toward Clean & Healthy, as well as indicators of attitude strength, such as the extent to which the attitude predicted brand choice. These surveys are described in greater detail below.

### Procedure

*Survey 1.* All participants were given information about a new brand of shampoo named Clean & Healthy, and were then asked to provide their true attitudes toward the shampoo. The information, which was purportedly extracted from the report of an independent consumer research agency, discussed the shampoo's performance on five different attributes (dandruff-removing capability, cleaning both hair and scalp, residue left on hair, presence or absence of conditioner, and number of rinses required). A short descriptive paragraph was provided for each attribute, along with a rating on a one to seven scale (1= very bad; 7 = very good). For instance, the shampoo received a high rating of 7 on dan-

druff-removing capability, and the accompanying description of this attribute read as follows:

“This shampoo is excellent at removing dandruff. In market research, this brand was found to perform 25% better than leading brands such as Head and Shoulders. The superior performance of Clean & Healthy is due mainly to the presence of the ingredient neutroprene.”

Similarly positive descriptions and ratings were provided for all the attributes, except for one feature (lack of conditioner), which was described in negative terms so as to enhance the credibility of the entire product description. As with Experiment 2 stimuli, pilot testing with equivalent negative descriptions revealed that unambiguous negative attitudes were strongly held. Thus, negative descriptions led to a ceiling effect that precluded observing any differences in attitude strength between experimental and control conditions. After reading the product description, participants were asked to first indicate their attitudes toward the shampoo on a dichotomous measure (i.e., circle “bad” or “good”). The dichotomous measure helped to removed ambiguity from participants’ initial attitudes by forcing them to decide whether they liked or disliked the shampoo. This made it easier for them to complete the experimental manipulation later which required them to lie about their attitudes. As expected, all participants circled the word “good” on the dichotomous measure, indicating positive attitudes toward the shampoo. The dichotomous measure was followed by two 7-point attitude scales (1 = dislike, unfavorable; 7 = like, favorable). The mean of these two scales ( $r = 0.78$ ) served as the pre-manipulation or initial measure of attitudes toward the shampoo.

After indicating attitudes toward Clean & Healthy, all participants read another product description, this time for a new tennis racquet named Lightning. Information was provided on six attributes and was again positive in content. After reading the information, participants provided attitudes toward the racquet, as they had done with the shampoo. Two purposes were served by measuring attitudes toward the racquet—first, this acted as a filler between the first and second survey, and second, it provided the basis of a dissimulation task for control participants, analogous to that completed by participants in the experimental conditions.

*Survey 2.* The second survey, which contained the experimental manipulation, was framed as a product testimonial study. Using a cover story similar to that employed by Maio & Olson (1998), all participants

were told that consumers often receive untruthful information about products (e.g., companies may pay someone to write an untruthful negative testimonial against a competing brand) and that the researchers were interested in the effects of such untruthful, negative testimonials on product perceptions. In order to study such effects, the current participants were being requested to provide untrue testimonials against either Clean & Healthy shampoo (experimental conditions) or the Lightning tennis racquet (control condition), which would then be given to future research participants so as to examine the effects of these testimonials on their perceptions of the product in question. Space was provided on the bottom of the page for the false testimonial to be written.

The cover story also contained additional instructions telling participants how to enhance the believability of the untrue testimonial. In particular, "commission" participants were told that past research had shown that the negative testimonial would have a better chance of being believed if it provided a reason for its negative views, by including a description (albeit untruthful) of the brand's performance on specific attributes. The following example was provided as an illustration: "... if you want to convince someone that a particular brand of TV is bad, you might lie and say that its color quality is very poor, even if it is actually quite good." On the other hand, "omission" participants were told that the negative testimonial would have a better chance of being believed if it discussed the shampoo's performance on the specific attributes on which it performed badly. The illustrative example in this case read as follows: "... if you want to convince someone that a particular brand of TV is bad, you might talk only about its high price, even though all its other features are excellent." Finally, "puffery" participants were advised that the negative testimonial would be believable if it simply contained negative statements about the shampoo without discussing its performance on specific attributes. The example stated: "... if you want to convince someone that a particular brand of TV is bad, you might simply say, "I think this TV is terrible!" without talking about any specific features." Thus, commission participants were encouraged to discuss (and lie about) the shampoo along specific attributes on which the shampoo actually performed well (lie of commission), omission participants were encouraged to focus only on the attribute on which the shampoo performed badly (lie of omission), whereas puffery participants were encouraged to completely avoid discussing specific feature performance (lie of puffery).

After writing the essay, participants in all three experimental conditions were also required to indicate their attitudes toward the shampoo on two semantic-differential scales (-3 to + 3), anchored by bad/good and unfavorable/favorable. Following the procedure used by Maio and Olson (1998), participants were asked to indicate unfavorable attitudes toward the shampoo on these scales, purportedly in order to further convince future readers of the testimonials that the writer indeed had a poor opinion of the shampoo.

The instructions in the control condition were analogous to those in the experimental-commission condition, with the only change being that, instead of being asked to write an untrue negative testimonial against the shampoo, participants were asked to provide a false testimonial against the Lightning tennis racquet about which they had read earlier. Thus, these participants wrote a negative essay about the racquet, and also indicated unfavorable attitudes toward it on the semantic-differential scales provided.

*Survey 3.* At the beginning of this questionnaire booklet, all participants were reminded that they had earlier read about two products: Clean & Healthy shampoo and Lightning tennis racquets. They were then asked to evaluate the shampoo on three semantic seven-point differential scales (1-7), anchored by dislike/like; poor/excellent and unfavorable/favorable ( $\alpha = 0.85$ ). They were also asked to indicate their confidence in these evaluations on two scales (1 = not confident/not sure; 7 = quite confident/quite sure;  $r = 0.91$ ). Next, all participants responded to similar evaluation and confidence questions with reference to the tennis racquet; these measures served as a brief filler between the attitude measures for the shampoo and the choice task that followed on the final page of the questionnaire. Specifically, participants were asked to imagine that they were purchasing a shampoo, and had to choose between Clean & Healthy and their current brand of shampoo. Participants indicated their choice by circling the appropriate option. Choice was coded as 1 if Clean & Healthy shampoo was chosen, and 0 otherwise. Finally, participants were debriefed and dismissed.

## RESULTS

### Manipulation Check

The particular types of thoughts listed in participants' negative essay about Clean & Healthy shampoo provided an indication of the efficacy of our three experimental manipulations (lie-commission, lie-omission,

lie-puffery). A research assistant who was blind to the experimental hypotheses coded the testimonial thoughts (all of which were negatively valenced because participants were dissimulating about a "good" brand) as either referring to a specific attribute that participants had earlier read about (e.g., "this shampoo doesn't remove dandruff") or as an abstract evaluative thought not referring to a specific shampoo attribute (e.g., "this is a terrible shampoo"). As expected, a significant effect on the total number of abstract evaluative thoughts ( $F(2,73) = 43.56, p < .001$ ) revealed that the puffery condition contained the greatest number of these thoughts ( $M_{\text{puffery}} = 2.46, M_{\text{commission}} = .61, M_{\text{omission}} = .15$ ). On the other hand, the latter two conditions contained more specific negative thoughts ( $M_{\text{commission}} = 2.85, M_{\text{omission}} = 2.50$ ) than the puffery condition ( $M_{\text{puffery}} = .5, F = 28.34, p < .001$ ). Finally, although the omission and commission conditions both contained specific negative thoughts, participants in these two conditions differed in terms of their focus. In particular, participants in the omission condition, in accordance with the instructions given in this condition, listed a disproportionate number of thoughts about the one attribute (lack of conditioner) that had been described negatively in the stimulus information ( $M_{\text{omission}} = 2.19, M_{\text{commission}} = .88, F = 31.92, p < .001$ ). Conversely, a summed index of thoughts about the other four attributes that had been described in the shampoo information revealed that omission participants listed comparatively few thoughts about these attributes ( $M_{\text{omission}} = .31, M_{\text{commission}} = 1.96, F = 31.08, p < .001$ ). Thus, the three different lying manipulations seemed to work as intended, with participants in the puffery condition focusing on abstract evaluative thoughts, participants in the omission condition focusing on the one attribute that the shampoo performed badly on, and participants in the commission condition listing negative thoughts about several different features on which the shampoo actually performed well.

Finally, an analysis of the total number of thoughts written down by participants also revealed a significant effect of lying type ( $F = 3.60, p < .05$ ). Post hoc Duncan tests showed that this effect was due to a greater number of thoughts in the commission condition ( $M = 3.77$ ) vs. the omission condition ( $M = 2.89$ ); the puffery condition ( $M = 3.12$ ) did not significantly differ from the other two conditions. The comparatively low number of thoughts in the omission condition may be attributed to the particular instructions employed in this condition, which required respondents to primarily focus on the sole shampoo attribute that was described in negative terms.

### Attitude Change

To determine whether the dissimulation manipulation caused attitude change, pre-manipulation attitudes (measured in Survey 1) and post-manipulation attitudes (measured in Survey 3) were submitted to a  $4 \times 2$  (condition  $\times$  time of measurement) mixed-model ANOVA, with time of measurement (pre vs. post-manipulation) as the within-subjects factor. None of the effects attained significance. In particular, pre-manipulation attitudes toward the shampoo ( $M = 5.51$ ) did not differ from post-manipulation attitudes ( $M = 5.44$ ,  $F(1,95) = 2.29$ ,  $p > .13$ ); further, the lack of an interaction effect of the two factors (time of measurement and condition) indicates that this pattern held across conditions. The equivalence of attitude change across conditions implies that differential attitude change cannot explain any differences detected in attitude strength for experimental vs. control groups.

### Attitude-Behavior Correlation

The relationship between post-manipulation attitudes and choice was examined by analyzing the Fisher- $z$  transformation of the attitude-choice correlation obtained in each cell. As expected, a reliable effect of condition was obtained ( $F(3, \infty) = 7.56$ ,  $p < .001$ ). Planned contrasts then revealed that the attitude-choice correlation was greater for commission vs. control ( $r_{\text{commission}} = .47$ ,  $r_{\text{control}} = -.13$ ;  $F(1, \infty) = 4.25$ ,  $p < .05$ ), omission vs. control ( $r_{\text{omission}} = .55$ ,  $r_{\text{control}} = -.13$ ,  $F(1, \infty) = 5.95$ ,  $p < .05$ ), and also puffery vs. control ( $r_{\text{puffery}} = 0.48$ ,  $r_{\text{control}} = -.13$ ,  $F(1, \infty) = 4.37$ ,  $p < .05$ ); further, the correlations in the three experimental conditions did not differ. Thus, as expected, dissimulation, irrespective of the specific strategy used to make the lie believable, produced a reliable increase in the relationship between attitudes and behavior.

Another comparison of the attitude-choice link across conditions was carried out by partitioning participants on the basis of their response to the choice measure, and submitting the attitude data to a  $2$  (choice:  $1/0$ )  $\times$   $4$  (condition type: commission/omission/puffery/control) ANOVA. A stronger (weaker) link between attitudes and choice in any condition should be manifested in a greater (lower) attitude difference between the group of subjects who chose Clean & Healthy (choice = 1) and the group of subjects who did not choose Clean & Healthy (choice = 0) in that condition. Thus, the stronger attitude-choice link hypothesized for the experimental vs. control conditions should be manifested in an interaction effect of Condition and Choice in the  $2 \times 4$  ANOVA. A significant

interaction was in fact obtained ( $F(3,91) = 3.78, p < .05$ ). Planned contrasts then revealed that, as expected, the attitude difference between participants who chose the Clean & Healthy as compared to those who did not choose this shampoo was greater for the commission condition (Choice(0) = 4.94, Choice (1) = 5.65) vs. the control condition (Choice(0) = 5.66, Choice (1) = 5.45,  $F(1,45) = 4.23, p < .05$ ) supporting the thesis of a stronger attitude–choice link in the former condition. Similarly, a stronger attitude–choice link was indicated for the omission condition (Choice(0) = 4.13, Choice (1) = 5.46) compared to the control ( $F(1,47) = 7.28, p < .01$ ), as well as puffery (Choice(0) = 4.87, Choice (1) = 5.75) compared to the control ( $F(1,43) = 4.78, p < .05$ ).

#### Attitude Confidence

Confidence in the post-manipulation attitude toward the shampoo (measured in Survey 3) was submitted to a single-factor four-level (condition type: commission, omission, puffery, or control) ANOVA. A significant main effect was observed ( $F(3,95) = 6.90, p < .001$ ). Post hoc tests revealed that attitude confidence in the omission condition ( $M = 4.65$ ) was lower than that in the other three conditions ( $M_{\text{commission}} = 5.28, M_{\text{puffery}} = 5.56, M_{\text{control}} = 5.67$ ). Thus, asking participants to focus on an attitude–discrepant feature (as was done in the omission manipulation) lowers confidence in the attitude. It should also be noted that, unlike in Experiment 2, attitude dissimulation in general did not lead to increased confidence. This difference between the two experiments is discussed later.

## DISCUSSION

Results from Experiment 3 show that dissimulation leads to increased attitude strength even when respondents seek to make their lies believable by using strategies such as justification or emphasis. Thus, lies of commission, omission and puffery each produced a stronger attitude–behavior link as compared to the control condition. These findings indicate that the strengthening effect of dissimulation can be generalized to real-world lying situations, in which people usually strive to make their lies believable. Further, the results obtained in the two justification conditions (commission and omission) provide a particularly strong refutation of the counter hypothesis that dissimulation might produce a weakening effect by creating a competing link to the false atti-



tude. The strength of this competing link should be stronger (and thus, the likelihood of a weakening effect should be increased) when participants actively justify the false attitude, as was done in the commission and omission conditions. That only a strengthening effect was observed even for these conditions indicates that rather than producing a competing link in the underlying attitude structure, dissimulation simply activates the link to the true attitude, resulting in a strengthening effect. Finally, the finding that justifying false attitudes did not lead to attitude change in either the commission or omission conditions indicates that writing attitude-discrepant testimonials did not produce cognitive dissonance. This result is consistent with accounts of dissonance (e.g., Cooper & Fazio, 1984), which posit that dissimulation should lead to cognitive dissonance only when the respondent freely chooses to dissimulate (participants in the current study were required to do so) and when the dissimulation produces foreseeable negative consequences (again, this was not the case in the present study).

The attitude confidence results in the current study were discrepant from earlier findings. Specifically, in contrast to Experiment 2, in which repeated dissimulation led to increased attitude confidence, none of the three dissimulation conditions of the current study produced greater attitude confidence than the control. In fact, attitude confidence in the omission condition was lower than that in the control, while attitude confidence in the commission and puffery conditions did not differ from that in the control. A possible reason for the null findings in the commission and puffery conditions (vs. control) may involve a ceiling effect. The attitude object in this study was described in near-unanimous positive terms (four out of five attributes); thus, attitude confidence was presumably high even in the control condition, a speculation consistent with the mean confidence score in this condition ( $M = 5.54$  on a scale of 7).

Perhaps more interesting than the null findings on confidence for the commission and puffery conditions was the finding that lies of omission actually led to lower attitude confidence than the control. Further research is needed to discover the reason for this result, but it seems plausible that dwelling on attitude-discrepant features (as subjects in the omission condition were asked to do) can lead to decreased confidence in the attitude. In other words, even though subjects in this condition had an overall positive opinion of the shampoo, having to focus on the one attribute that the shampoo performed badly on (lack of conditioner) might have led them to question these positive attitudes to some extent.



Moreover, the comparatively lower extent of elaboration in this condition (as indicated by the lower number of total thoughts) may have adversely affected attitude confidence. Interestingly, however, this decrease in confidence did not lead to a lowering of the attitude–behavior link; in fact, the attitude–behavior link in the omission condition was significantly greater than that in the control, suggesting that the decreased confidence was more than offset by an increase in other factors that positively influence attitude strength (e.g., attitude accessibility).

### GENERAL DISCUSSION

Dissonance–based perspectives on attitude dissimulation suggest that lying can change attitudes in the direction of the lie, as long as the dissimble freely chooses to lie and feels personally responsible for possible negative consequences (Festinger, 1957; Salancik & Conway, 1972). However, attitudinal lies are often harmless and may not have aversive consequences; such lies typically do not result in attitude change (Cooper & Fazio, 1984). An important question concerns other possible effects of this type of fairly ubiquitous attitudinal lying. This research examined a counter–intuitive but compelling proposition, namely that dissimulation may, under certain conditions, serve to strengthen prior attitudes rather than to undermine them. Three experiments found support for this proposition and in doing so, extended previous work on dissimulation effects (Maio & Olson, 1995; 1998) in three ways. First, in contrast to previous research that has tested this proposition in the context of strong attitudes, we focused on the domain of weak attitudes. Second, we studied consequences of dissimulation for several dimensions of attitude strength other than attitude accessibility. Third, we induced attitude dissimulation in a variety of ways ranging from forced dissimulation to more naturalistic dissimulation scenarios.

Collectively, our results provide strong evidence for the premise that attitude dissimulation activates the true underlying attitude and hence results in attitude strengthening. They also serve to refute a plausible alternative hypothesis that dissimulation results in the creation of a “false attitude” node in memory, which could result in response competition and weakening. In particular, the focus on weak attitudes provides strong evidence against this alternative hypothesis, given the greater likelihood of such a structural change obtaining for weakly held attitudes. Apart from serving to bolster the activation–based mechanism for

dissimulation effects and arguing against the perspective that dissimulation causes structural changes, these findings are also useful in terms of generalizing earlier results (for strong attitudes) to the domain of weak attitudes—a context in which dissimulation may be even more likely to occur.

Given the complex relationships between various antecedents and consequences of strength (Krosnick & Petty, 1995; Raden, 1985), it is important to examine multiple strength-related constructs. The second major goal of this research therefore consisted of examining dissimulation effects on strength dimensions other than attitude accessibility. Thus, Experiments 2 and 3 studied the effects of lying about weakly held brand attitudes on several variables such as attitude persistence, attitude confidence and the attitude-behavior link. Consistent with the premise that lying involves activation of the underlying attitude, dissimulation was found to lead to increases in attitude persistence as well as the attitude-behavior link. Although the effects for attitude confidence were less clear, the broad convergence between the strength results from our experiments is particularly reassuring given the different methods (response latency versus pen-and-paper) used across these experiments.

The third contribution of this research concerns the different manipulations of dissimulation that were utilized across experiments. While Experiments 1 and 2 employed different versions of an artificial forced dissimulation paradigm, Experiment 3 used a testimonial-writing context to induce more naturalistic lying. In addition, Experiment 3 included an examination of different types of lying that occur in everyday life—lies of commission, omission, and puffery. The finding that the attitude-behavior correlation for all three types of lying was higher than that in the control condition again supported the premise that dissimulation involves activation of the true attitude, thereby producing attitude strengthening. Importantly, because the formation of a competing link to the false attitude should be facilitated when respondents justify their lies, the strengthening results obtained in the two “justification” conditions (lying of commission and omission) provide a strong refutation of the alternative thesis that dissimulation leads to a change in attitude structure.

Our findings have important practical implications. Because of social desirability concerns, people may often lie about their feelings on controversial topics such as race/gender relations. For instance, a person

who harbors weakly negative attitudes toward minority groups might lie about such attitudes in social settings. The current findings on the effects of dissimulation on attitude–behavior relationship suggest that such dissimulation can actually cause future behavior toward these minority groups to be more hostile (because of the increased strength of the underlying negative attitude) than it otherwise might have been. Clearly, therefore, dissimulation can have potentially adverse, and unexpectedly significant consequences.

Some limitations of our work offer avenues for future exploration. In particular, it would be interesting to further examine the specific process underlying dissimulation. While our findings all converge on the proposition that dissimulation involves an activation of the true attitude, our research did not include measures that would tap into these processes. Future work in this area could include retrospective protocols that might provide insights into participants' thoughts during the process of dissimulation. Such protocols could also help to identify whether dissimulation, as has been suggested by Maio and Olson (1995), is accompanied by a deliberate suppression of the true attitude. Such a process has been found to increase the accessibility of the thought which is sought to be suppressed (Wegner, 1994), and would help to explain some of the effects of dissimulation on attitude strength. It is somewhat unlikely, however, that such thought suppression will be needed for weakly held attitudes, since they are less likely to be automatically activated on exposure to the attitude object.

Another interesting question in the dissimulation area has to do with the attitudinal response that is provided by people who habitually lie about an issue. For example, people who hold socially undesirable attitudes may also be quite practiced in responding with a more desirable, but false attitude. What are the conditions that militate against such a tendency? Some recent research on "dual attitudes" (Wilson, Lindsey, & Schooler, 2000) offers an answer. According to dual attitude models, people can hold two simultaneous attitudes toward an object—an automatic, implicit attitude, and a recently constructed explicit attitude. A rough parallel may be drawn between implicit vs. explicit attitudes on the one hand, and "true" vs. "false" attitudes on the other. In other words, people may have true attitudes that are automatically retrieved; however, they may also be able to construct a "false" attitude online. According to the dual attitudes model, the attitude that gets reported might be determined by available cognitive capacity. Thus, if the person is al-

lowed sufficient time and opportunity to deliver an attitudinal response, the false attitude is likely to be reported; however, if capacity is constrained, the true attitude will be manifested. Future research could apply this idea to uncover conditions under which true vs. false attitudinal responses are provided.

## REFERENCES

- Anderson, J.R. (1990). *Cognitive Psychology and its Implications*. New York: W.H. Freeman.
- Bargh, J.A., Chaiken, S., Govender, R., & Pratto, F. (1992). The generality of the automatic attitude activation effect. *Journal of Personality and Social Psychology*, *62*, 893–912.
- Bassili, J. N. (1998). *Simultaneous accessibility: A prerequisite to heated intrapsychic conflict*. Paper presented at the annual meeting of the International Society of Political Psychology, Montreal, July 12-15.
- Bem, D.J. (1972). Self-perception theory. In L. Berkowitz (Ed.), *Advances in Experimental Psychology* (Vol. 6, pp. 1–62), San Diego, CA: Academic Press.
- Berger, I.E. (1992). The nature of attitude accessibility and attitude confidence: A triangulated experiment. *Journal of Consumer Psychology*, *1* (2), 103–123.
- Berger, I.E., & Mitchell, A.A. (1989). The effect of advertising on attitude accessibility, attitude confidence, and the attitude-behavior relationship. *Journal of Consumer Research*, *16*, 269–279.
- Cooper, J., & Fazio, R.H. (1984). A new look at dissonance theory. In L. Berkowitz (Ed.), *Advances in experimental psychology* (Vol. 17, pp. 229–266). San Diego, CA: Academic Press.
- DePaulo, B.M., Kashy, D.A., & Kirkendol, S.E. (1996). Lying in everyday life. *Journal of Personality & Social Psychology*, *70*, 979–995.
- Eagly, A.H. & Chaiken, S. (1993). *The Psychology of Attitudes*. Fort Worth, TX: Harcourt Brace Janovich.
- Einhorn, H.J., & Hogarth, R.M. (1978). Confidence in judgment: Persistence of the illusion of validity. *Psychology Review*, *85* (5), 395–416.
- Erber, M.W., Hodges, S.D., & Wilson, T.D. (1995). Attitude strength, attitude stability, and the effects of analyzing reasons. In R.E. Petty, & J.A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 433–454). Mahwah, NJ: Lawrence Erlbaum.
- Fazio, R.H. (1986). How do attitudes guide behavior. In R.M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (Vol. 1, pp. 204–233). New York: Guilford Press.
- Fazio, R.H. (1995). Attitudes as object-evaluation associations: Determinants, consequences, and correlates of attitude accessibility. In R.E. Petty and J.A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 247–282). Mahwah, NJ: Lawrence Erlbaum.
- Fazio, R.H., Chen, J.M., McDonel, E.C., & Sherman, S.J. (1982). Attitude accessibility, attitude-behavior consistency, and the strength of the object-evaluation association. *Journal of Experimental Social Psychology*, *18*, 339–357.
- Fazio, R.H., Powell, M.C., & Williams, C.J. (1989). The role of attitude accessibility in the attitude-to-behavior process. *Journal of Consumer Research*, *16* (Dec), 280–288.
- Fazio, R.H., & Williams, C.J. (1986). Attitude accessibility as a moderator of the attitude-perception and attitude-behavior relations: An investigation of the 1984 presidential election. *Journal of Personality and Social Psychology*, *51*, 505–514.
- Fazio, R.H., & Zanna, M.P. (1981). Direct experience and attitude-behavior consistency. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 14, pp. 162–202). New York: Academic.
- Festinger, L. (1957). *A Theory of Cognitive Dissonance*. Stanford, CA: Stanford University Press.
- Hagtvedt, C.P., Schumann, D.W., Schneier, W.L., & Warren, W.L. (1994). Advertising repetition and variation strategies: Implications for understanding attitude strength. *Journal of Consumer Research*, *21* (June), 176–189.
- Hodges, S.D., & Wilson, T.D. (1994). Effects of analyzing reasons on attitude change: The moderating role of attitude accessibility. *Social Cognition*, *11*, 353–366.

- Kashy, D.A., & DePaulo, B.M. (1996). Who lies? *Journal of Personality & Social Psychology*, 70, 1037–1051.
- Krosnick, J.A., Boninger, D.S., Chuang, Y.C., Berent, M.K., & Carnot, C.G. (1993). Attitude strength: One construct or many related constructs? *Journal of Personality and Social Psychology*, 65, 1132–1151.
- Krosnick, J.A., & Petty, R.E. (1995). Attitude strength: An overview. In R.E. Petty, & J.A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 1–24). Mahwah, NJ: Lawrence Erlbaum.
- Lavine, H., Borgida, E., & Sullivan, J. L. (2000). On the relationship between attitude involvement and attitude accessibility: toward a cognitive–motivational model of political information processing. *Political Psychology*, 21, 81–106.
- Maio, G.R., & Olson, J.M. (1995). The effect of attitude dissimulation on attitude accessibility. *Social Cognition*, 13 (2), 127–144.
- Maio, G.R., & Olson, J.M. (1998). Attitude dissimulation and persuasion. *Journal of Experimental Social Psychology*, 34, 182–201.
- Mowrer, O.H. (1960). *Learning Theory and Behavior*. New York: Wiley.
- Norman, R. (1975). Affective–cognitive consistency, attitudes, conformity and behavior. *Journal of Personality and Social Psychology*, 32, 83–91.
- Petty, R.E., & Cacioppo, J.T. (1986). *Communication and Persuasion: Central and peripheral routes to attitude change*. New York: Springer–Verlag.
- Petty, R.E., Cacioppo, J.T., & Schumann, D. (1983). Central and peripheral routes to advertising effectiveness: The moderating role of involvement. *Journal of Consumer Research*, 10 (September), 135–146.
- Petty, R.E., Haugtvedt, C.P., & Smith, S.M. (1995). Elaboration as a determinant of attitude strength: Creating attitudes that are persistent, resistant, and predictive of behavior. In R.E. Petty, & J.A. Krosnick (Eds.), *Attitude strength: Antecedents and Consequences* (pp. 93–130). Mahwah, NJ: Lawrence Erlbaum.
- Powell, M.C., & Fazio, R.H. (1984). Attitude accessibility as a function of repeated attitude expression. *Personality and Social Psychology Bulletin*, 10, 139–148.
- Raden, D. (1985). Strength–related attitude Dimensions. *Social Psychology Quarterly*, 48, 312–330.
- Rosenberg, M.J. (1968). Hedonism, inauthenticity, and other goads toward expansion of a consistency theory. in *Theories of Cognitive Consistency: A Sourcebook*, Abelson R. P., Aronson E., McGuire W. J., Newcomb T. M., Rosenberg M. J. & P. H. Tannenbaum (eds.), Chicago, Rand–McNally, 73–111.
- Roskos–Ewoldsen, D. R., & Fazio, R. H., (1992). The accessibility of source likeability as a determinant of persuasion. *Personality and Social Psychology Bulletin*, 18, 1, 19–25.
- Salancik, G.R., & Conway, M. (1972). Attitude inferences from salient and relevant cognitive content about behavior. *Journal of Personality and Social Psychology*, 32, 829–840.
- Scher, S.J., & Cooper, J. (1989). Motivational basis of dissonance: The singular role of behavioral consequences. *Journal of Personality and Social Psychology*, 56 (6), 899–906.
- Sengupta, J., Dahl, D.W., & Gorn, G. J. (2001). Misrepresentation in the consumer context. *Journal of Consumer Psychology* (in press).
- Sengupta, J., & Johar, G. V. (2002). Effects of Inconsistent Attribute Information on the Predictive Value of Product Attitudes: Toward a Resolution of Opposing Perspectives. *Journal of Consumer Research*, 29(1), 39–56.
- Sparks, P., Hedderly, D., & Shepherd, R. (1992). An investigation into the relationship between perceived control, attitude variability, and the consumption of two common foods. *European Journal of Social Psychology*, 22, 55–71.
- Sudman, S. & Bradburn, N. (1982). *Asking Questions*. San Francisco: Jossey Bass.
- Tesser, A. (1978). Self–generated attitude change. In L. Berkowitz (Ed.) *Advances in Experimental Social Psychology* (Vol. 11, pp. 290–338). New York: Academic.
- Wegner, D.M. (1994). Ironic processes of mental control. *Psychological Review*, 101, 34–52
- Wilson, T. D., Lindsey, S., & Schooler, T. Y. (2000). A model of dual attitudes. *Psychological Review*, 107, 1, 101–126.
- Zanna, M.P., Fazio, R.H., & Ross, M. (1994). The persistence of Persuasion. In R.C. Schank & E. Langer (Eds.), *Beliefs, reasoning, and decision making: Psycho–logic in honor of Bob Abelson* (pp. 347–362). Hillsdale, NJ: Lawrence Erlbaum.