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## Attitudes Over Time: Attitude Judgment and Change

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**Y**ears ago, Sherif and Hovland (1961) suggested that people who hold an attitude about an object are likely to perceive new information about the object in relation to the attitude. For example, one's prior attitude toward condom use will partially determine the effect of a strong external endorsement for condom use on one's subsequent attitude. If recipients favor condom use only slightly, the campaign will offer a relatively stronger endorsement than the recipients'. The size of the difference, however, should matter a great deal in predicting the actual effects of the campaign. If the distance between the two positions is small, recipients may perceive the campaign as congruent with their prior attitudes and shift in the direction of increased support for condom use. In contrast, as the distance between the two positions increases, recipients will be likely to distinguish or contrast the two positions. Under these conditions, they may shift their attitude in the opposite direction of the campaign, resulting in decreased rather than increased support for condom use. Following this logic, prior attitudes, other accessible evaluative information, and the comparison of these sources of information jointly determine the stability of attitudes over time.



On the heels of Sherif and Hovland's (1961) seminal work, however, the majority of researchers have concentrated on the simpler influence that prior attitudes exert on subsequent evaluative judgments (for a review, see Eagly & Chaiken, 1993; Johnson, Maio, & Smith-McLallen, *in press*; Petty, Wheeler, & Tormala, 2003). As part of this attempt, the representation of attitudes in memory and the mechanisms through which these attitudes influence subsequent judgments have been a matter of considerable attention. For example, Fazio (1995) described attitude representations in permanent memory as a concept node (flower) linked to an evaluative node (e.g., pleasant). When this link is strong, the prior evaluation is more accessible in memory and, thus, it is more likely that the evaluative node will be activated whenever one encounters or recalls the attitude object. Important to note, these accessible attitudes do not rest in memory inconsequentially (e.g., Fazio, 1990). They influence not only future evaluative judgments, but also the future processing of information about the attitude object and the behaviors in which people engage. For example, this impact is so important that sometimes having a prior attitude blinds people to changes in the real object (Fazio, Ledbetter, & Towles-Schwen, 2000). Thus, for Sherif and Hovland as well as Fazio, evaluative judgments that are based on existing attitudes are fundamentally different from judgments that require novel evaluations (see also Albarracín, Wallace, & Glasman, 2004).

In contrast to Sherif and Hovland's (1961) assumptions, other researchers have downplayed the role of attitudes stored in permanent memory. As the most visible proponents of this perspective, Schwarz and colleagues (Schwarz & Bohner, 2001; Schwarz & Strack, 1991) have persuasively argued that attitudes are momentary evaluative judgments constructed on the basis of whatever information happens to be accessible at the time. Thus, even when a prior evaluation serves as an input for this construction, the old evaluation is translated and typically integrated with other information rather than just applied automatically after its recall. After all, the argument goes, if people cannot even report their attitude toward a political party without the response being biased by subtle features of the questions, why should researchers dedicate themselves to explicating the structure of enduring attitudes stored in permanent memory? For these reasons, Schwarz and colleagues have modeled attitude judgment while minimizing the importance of representations of attitudes in memory and the study of attitude change.

Although attitudes have long been considered central to social psychology (see Allport, 1935; Eagly & Chaiken, 1993), adequate integration between representational and constructionist perspectives has been scarce. The lack of integration is unfortunate because, although a disparity exists between these perspectives, both views are likely to capture aspects of the true picture. For in-



stance, most theorists would probably agree that the enduring attitudes people hold are highly diagnostic for making evaluative judgments. At the same time, most would also agree that judgments involve the selection of an informational basis as well as response generation. Therefore, although attitudes may be highly diagnostic, other types of available information can also contribute to judgments and constraints in response formats can force individuals to further reconstruct their judgments. In this context, a comprehensive model of attitudes must acknowledge the contributions of both memory-based and online evaluations, and capture both the durability and the fluidity of evaluative judgments. As we see later, some of the most recent models of attitudes (e.g., Bassili & Brown, *in press*) and models of attitude change (e.g., Albarracín et al., 2004) have embraced this logic, and thus appear to have embraced the implications of Sherif and Hovland's (1961) seminal analysis.

Moreover, in keeping with the central theme of this volume we highlight how the consideration of future orientation has contributed to our understanding of attitudes. Research in other domains has already shown that one's temporal perspective is likely to influence how one elaborates upon novel information and ultimately one's judgments (see chaps. 2 and 15, this volume). Perhaps surprisingly, little effort has been made to directly explore the role of this temporal factor in attitude judgment and change (see Strathman, Gleicher, Boninger, & Edwards, 1994). Nonetheless, on the basis of the existing literature we speculate how the consideration of future orientation may cast further light on the contributions of memory-based and online evaluative processes to the dynamics of attitudes over time.

## REPRESENTATIONAL MODELS OF ATTITUDES

### Fazio's Model of the Attitude Representation

Fazio (1986, 1990, 1995; Fazio & Towles-Schwen, 1999) offers what is arguably the most prominent contemporary representational model of attitudes. According to him, attitudes are represented in memory as summary evaluations associated with the attitude object. Although the object–evaluation associations are presumed to be part of much broader networks that may include other information about the object, the model concentrates on the strength of the association between an evaluation and an attitude object. Attitudes are thought to fall on a continuum defined, at one end, by representations of attitude objects that are not associated with a summary evaluation (i.e., nonattitudes; see Converse, 1964, 1974) and, at the other end, by representations of attitude objects that are strongly associated with a summary evaluation.



According to the model, attitude accessibility is determined by the strength of the association between an attitude object and its evaluation. When the object–evaluation link is strong, the attitude is highly accessible and exposure to the attitude object will activate the evaluation. The process is thought to be automatic and important to the attitude–behavior relationship because activated evaluations can guide thought and behavior in the presence of the attitude object (Fazio, Powell, & Herr, 1983; for a review, see Ajzen & Fishbein, in press). For example, highly accessible attitudes exert strong influences on behavior (Fazio, 1990) and can bias perceptions of attitude objects (Fazio et al., 2000). To this extent, information about an object is likely to have a different impact when people possess a prior attitude and when they do not.

Perhaps ironically, even though Fazio’s model recognizes that existing attitudes often influence the impact of novel information, it does not attempt to describe specific processes that allow these representations to be incorporated with other information at the time of evaluative judgment, or how representations change in the face of compelling contradictory information. Other models, however, have attempted to explicate these processes.

## MODELS OF ONLINE INFORMATION PROCESSING

### Constructionist Models

In stark contrast to traditional representational models of attitudes, constructionist models emphasize the contribution of online evaluations derived on the basis of whatever information happens to be accessible at the time. The strong form of this argument implies that evaluative judgment is exclusively guided by information present in the external context rather than on elements that are represented in memory (Schwarz & Bohner, 2001). For example, individuals may use the affective reactions (e.g., Schwarz & Clore, 1983) or the physiological arousal (e.g., Valins, 1966; Wells & Petty, 1980) they momentarily experience to determine their evaluations of objects they encounter, without ever bothering to recall a prior attitude about these objects. A more tempered application of Schwarz and Bohner’s construal model suggests that memory-based evaluative information about an attitude object plays a role in judgment, but this role is often no more important than that of external inputs. Moreover, even when a prior judgment serves as a basis for a subsequent judgment, the judgment is still constructed anew, just constructed using old information from memory.

On the basis of their inclusion/exclusion model, Schwarz and colleagues (Schwarz, 1999; Schwarz & Bless, 1992) described how momentarily accessible

information can contribute to evaluative assimilation and contrast effects and corresponding instability in attitude judgment. For example, in one study Stapel and Schwarz (1998) drew participants’ attention to Colin Powell’s (a highly popular military leader at the time) decision to join the Republican Party or to his decision to reject an offer to run as a presidential candidate for the Republican Party before they were asked to evaluate the party. When participants were asked what party Colin Powell recently joined, evaluations of the party were more favorable presumably because the question led participants to think of well-liked Colin Powell as being part of the Republican Party. Under these conditions, participants’ extremely positive regard for Powell may have been used as an input for the evaluation of the party. When participants were asked about Powell’s refusal to run as a presidential candidate for the Republican Party, evaluations of the party were less favorable, presumably because the question led participants to distance Powell from the party. Under these conditions, participants’ extremely positive regard for Powell may be used as a standard of comparison, rendering the judgment of the party less favorable by contrast. Assimilation and contrast effects like these are often difficult to explain if one assumes that evaluative judgments are driven by the retrieval of stable attitudes represented in memory.

By incorporating evaluative inputs associated with momentarily accessible evaluative information and concentrating on the role of processes underlying judgment construction, the construal model signifies a great step forward in addressing the context-sensitivity of attitude judgment. Despite its strengths, however, it has garnered criticism due to its limited attention to evaluative structures encoded in memory. Contrary to the assumption that evaluations stored in memory are not important, the literature and daily experience are filled with examples that reveal the dramatic influence of some attitudes stored in memory (for a review, see Bassili & Brown, in press; Petty & Krosnick, 1995; Petty et al., 2003). Hence, insofar as the scope of the construal model does not adequately address the representational aspects of attitudes and the issue of attitude change, it presents a partial picture of the processes involved in attitude judgment.

### Reception Models

Models of attitude change have emerged largely from an interest in persuasion and from attempts to account for enduring changes in attitudes. Initially, social psychologists simply applied learning theory and assumed that people change their attitudes when they receive the “right” information (for a recent review see Johnson et al., in press). Thus, incentive models prescribed associating a



particular message recommendation or idea with an adequately reinforcing stimulus. Associating the idea with the proper reward, such as approval from a communicator, should in turn elicit attitude change.

As research on persuasion evolved and as psychology shifted from learning to cognition, theories developed an understanding of the processes triggered by a persuasive communication. As the most prominent example, McGuire (1968a) conceptualized the impact of persuasive messages as contingent on the stages of exposure to the communication, attention, comprehension, yielding or acceptance of the message's position, retention of the new attitude, and behavior. However, research following McGuire's analysis was slow to deepen understanding of the various stages of processing he identified. In fact, McGuire (1968b) himself abandoned the distinction between exposure, attention, and comprehension and proposed a single stage comprising all aspects of message reception, though retaining yielding as the second stage.

In spite of the simplification the reception-yielding model represents, the model is useful to generate a number of interesting predictions concerning the relationship between factors of the recipients (personality, intelligence) or the environment (distraction) and attitude change. According to the model, individual difference variables can exert opposing effects on reception and yielding. For example, McGuire predicted that self-esteem and intelligence should relate positively to reception but negatively to yielding. Presumably, persons with higher intelligence or self-esteem are better able to attend to and comprehend information (increased reception) but also better able to defend their initial attitudes and be critical of new information (depressed yielding). As a result of the play of these two antagonistic influences, the overall impact of intelligence and self-esteem on persuasion should be curvilinear, with persons on the midscale positions being persuaded more than those at higher or lower positions.

The predictions derived from the reception-yielding model have received some support. For example, Eagly and Warren (1976) explored the influence of intelligence on reception and yielding by exposing participants to persuasive messages containing complex or simple arguments. Compared to their less intelligent counterparts, intelligent participants were expected to better comprehend the complex arguments and thus demonstrate greater attitude change when such arguments were included in the message. At the same time, intelligent participants were expected to defend their own attitudes better than their less intelligent counterparts, and thus demonstrate less attitude change when simple arguments were presented. As predicted, when the messages were supported with complex arguments there was a positive correlation between intelligence and attitude change, whereas when the messages were supported with simple arguments, there was a negative correlation between intelligence and attitude change. Over-



all, the empirical support for McGuire's predictions has, however, been relatively weak (see Eagly & Chaiken, 1993, for a review). Perhaps the streamlined model fails to address processes that contribute to the integration of prior attitudes and the evaluative implications of other available information, thus producing inadequate predictions of communication outcomes.

## MODELS OF THE ROLE OF ATTITUDE REPRESENTATIONS AND ONLINE INFORMATION PROCESSING

### Dual-Process Models

Other models have emphasized the processes that account for the selection of specific information at the time of judgment, recognizing that factors that decrease ability to comprehend or think about a message determine the way in which people express and ultimately change their attitudes. Specifically, dual-process theories like the elaboration likelihood model (ELM; Petty & Cacioppo, 1981, 1986; Petty & Wegener, 1999) and the heuristic-systematic model (HSM; Chaiken, 1987; Chaiken, Lieberman, & Eagly, 1989) both propose that recipients of a persuasive communication scrutinize the arguments the communication presents if and only if they are able and motivated to do so. Cognitive resources and motivation, however, are limited. Therefore, when ability and motivation are scarce, recipients of a communication are influenced by information other than the arguments contained in the communication. For example, the communication might be more persuasive if it contains three arguments instead of one, regardless of the quality of the arguments being considered. Although the ELM and HSM are distinct models that stem from different traditions, the models share many fundamental features and can accommodate the same findings (Petty et al., 2003). For our present purposes, we simply focus on the ELM.

At the heart of the ELM is the elaboration likelihood continuum. An individual's position along the continuum, determined by their motivation and ability to carefully think about the issues at hand, has qualitative and quantitative implications. The qualitative and quantitative implications of elaboration likelihood were demonstrated by Petty, Cacioppo, and Goldman (1981). In this study, student participants were told that the university was currently considering policy changes to academic programs, including the implementation of comprehensive exams prior to college graduation. Participants were instructed to evaluate the broadcast quality of arguments in favor of the implementation of the exams for possible use on the university radio station. The researchers ma-



nipulated personal involvement, message argument quality, and message source expertise to see if argument quality and source expertise were contingent on the level of personal involvement with the issue, which presumably affects recipients' motivation to think about the message.

Personal involvement was manipulated by telling half the participants that the comprehensive exam policy would be implemented during the following year, thereby affecting them personally. The remaining participants were told that the policy would be implemented 10 years down the line, thus never affecting them directly. To manipulate argument quality, half of the participants received messages with strong arguments that contained statistics and evidence (e.g., "the institution of the exams has led to a reversal in the declining scores on standardized achievement tests at other universities"). The remaining participants received messages with weak arguments (e.g., "a friend of the author's had to take a comprehensive exam and now has a prestigious academic position"). Finally, to manipulate the expertise of the source of the message, half of the participants were led to believe that the policy report had been prepared by a class at a local high school (low expertise), whereas the remaining half of the participants were told that the report had been prepared by a professor of education at Princeton University (high expertise).

As predicted by the ELM, argument quality exerted a significant impact on attitudes toward comprehensive exams when personal involvement was high. Independent of source expertise, strong arguments produced more agreement than did weak arguments. Under low involvement, however, the researchers observed the opposite pattern. Independent of argument quality, participants agreed with the message more when the source was an expert than when it was not. In terms of the ELM, highly involved participants believed that the institution of the senior comprehensive exam would directly affect them and were, therefore, motivated to process the issue-relevant merits of the message. Hence, strong arguments exerted a greater impact on these participants' attitudes than did weak ones. In contrast, low-involvement participants had little motivation to elaborate on the arguments of the message. Implementation of the exam was 10 years away and by then they would have long since graduated. Having little motivation to elaborate on the message, these participants primarily focused on the peripheral cue—the expertise of the source.

**The Role of Future Orientation.** One of the most remarkable characteristics of dual-process models like the ELM is their ability to address the influence of a variety of individual and environmental factors. As noted earlier, research in other domains has already shown that one's future orientation is likely to influence how one elaborates upon novel information and ultimately



one's judgments (see chaps. 2 and 15, this volume). To our knowledge, however, only Strathman et al. (1994) have directly explored the influence of this temporal factor in the domain of attitudes. In particular, Strathman and colleagues demonstrated that chronic differences in consideration of future consequences (CFC) influenced attitude change toward issues that involve immediate and distant consequences of events such as offshore oil drilling. Specifically, among low-CFC participants, who tend to focus on the immediate implications of their current actions, attitudes about drilling were more favorable when the advantages were characterized as immediate and the disadvantages as far off. In contrast, high-CFC participants, who tend to focus on the future implications of their current actions, were more persuaded when the advantages were distant and the disadvantages immediate.

These findings can be interpreted as a reflection of individual differences in the processing of information concerning future versus immediate outcomes, leading to increased elaboration of messages that match the recipients' temporal perspective. Interestingly, this bias remains unaltered when one introduces instructions that might be expected to correct it. Subsequent research demonstrated that even when low-CFC individuals are prompted to think about the future, they do not seem to weigh possible futures much at all (Boninger, Gleicher, & Strathman, 1994).

**Attitude Stability.** One of the most important conclusions offered by process models is that attitudes formed on the basis of careful processing of information will show greater temporal stability, greater impact on behavior, and greater resistance to counterpersuasion than attitudes formed on the basis of peripheral processing. Petty and Cacioppo (1986) outlined various mediating mechanisms that are presumably responsible for the effects of elaboration on attitude strength. Generally speaking, elaboration involves greater thinking about the attitude object and contributes to heightened accessibility of the attitude. Heightened accessibility, in turn, increases the probability that the same attitude will be expressed at two points in time and that the attitude will be available to guide behavior in the future (Fazio, 1990, 1995). In some cases, however, thinking about the attitude object even superficially, as induced by repeated peripheral processing of peripheral cues (Petty & Cacioppo, 1986) or by rehearsal of the message content without elaboration (Zanna, Fazio, & Ross, 1994), can also contribute to attitude strength through increased accessibility.

**The Role of Prior Attitudes.** Although we have classified dual-process models like the ELM as addressing both prior attitudes and online information processing, these models only superficially acknowledge the influence and role



of prior attitudes. In part, the relative lack of importance assigned to prior attitudes derives from the fact that the model assumes the same processes apply for the case of attitude formation as of change (Petty & Cacioppo, 1986). Past research, however, has not clearly established whether people who possess prior attitudes utilize the same types of heuristics as people who lack prior attitudes. To examine this issue Kumkale and Albarracín (2003) conducted a meta-analytic review of longitudinal research on the effects of source credibility and distinguished between cases in which participants possessed an initial attitude toward the target issue and those in which they did not. The results revealed that the effects of source credibility were small when participants possessed an initial attitude or had sufficient ability or motivation to form a new attitude online on the basis of the arguments contained in the message. In contrast, when participants could neither retrieve an attitude from memory nor form a new attitude online, the impact of the credibility of the source of the communication strengthened significantly.

### The Potentiated Recruitment Framework

Models inspired by connectionism (see Smith, 1996) offer an alternative means to account for the influences of both enduring attitudes and the evaluative implications of momentarily accessible information. For example, according to the potentiated recruitment framework (PRF; Bassili & Brown, in press) attitudes are represented as molecular elements that have the potential to be recruited in various mixes depending on the eliciting context and chronic potentiating factors. Evaluation emerges in response to the activity of microconceptual networks that are activated by contextually situated attitude objects, goals, and task demands. Therefore, evaluations are as fluid and context dependent as the combined activation of chronic and temporary relevant patterns allows.

According to the model, evaluations emerge as a result of four primary sources of potentiation. One source is recent cognitive experiences that prime particular microconcepts in memory. Another source is the current information available about the attitude object and the context in which it is situated. This source of potentiation is particularly important because it comprises activation resulting from both enduring evaluations toward the attitude object and the specific eliciting conditions. Thus, even subtle features of the context can exert considerable influence on the emergent evaluation. The third source of potentiation consists of the flow of activation between linked microconcepts and accounts for the potential influence of general knowledge and culture on attitudes. Finally, cognitive activity in working memory is an important source of potentiation, particularly in marking the distinction between implicit and ex-



PLICIT evaluative judgments. By explicating all these sources of variability in the potentiation of attitudes, this framework increases the possibility of making predictions about evaluations at different points in time. Hopefully, we will see developments from this model in the area of attitude change in the years to come.

### The Activation and Comparison Model

In contrast to previous theories, the activation and comparison model of attitude survival and change (Albarracín et al., 2004) attempts to incorporate the key aspects of both representational and information processing models by embracing the distinction between attitude formation and attitude change. Naturally, the model attempts to take a broader look at processes that take place at the time of attitude judgment and account for the possible simultaneous contributions of memory-based and online evaluations.

As discussed at the outset of this chapter, the attitudes people hold are likely to be diagnostic whenever an evaluative judgment is necessary. Extant research, however, indicates that judgment processes involve the selection of an informational basis as well as response generation (Wyer & Srull, 1989; see also Albarracín, 2002). As diagnostic as attitudes may be, other types of information that are chronically or momentarily available can also be selected and contribute to responses. Embracing this logic, Albarracín and colleagues attempt to provide a parsimonious yet comprehensive account of how the old attitude and the present information collectively contribute to the dynamics of change in evaluative judgments over time.

The activation and comparison model is simple to the point of obviousness. It emphasizes that understanding and predicting attitude change requires examination of three processes: (a) activating the prior attitude (retrieving it from memory), (b) activating information related to the prior attitude (which can come from memory or an external source), and (c) comparing the prior attitude with the related information. None of the processes is inevitable, and each process can have different implications for attitude change and maintenance. On the one hand, the sole activation of either attitude-consistent information or the prior attitude itself will lead to attitude maintenance. On the other hand, online reconstruction of an attitude based on the sole activation of attitude-inconsistent information, as well as comparison of the prior attitude with attitude-consistent or -inconsistent information should generally produce attitude change. Nevertheless, these two processes do not always occur independently of each other, and better understanding of attitude change emerges from a joint consideration of the two. Although the processes themselves are not counter-intuitive, their joint implications, as elaborated in the model, often contrast

with prior assumptions and predictions. The outcomes of each process in isolation and in combination are described next.

**Activation.** The model allows for independent effects resulting from the activation of existing attitudes and other accessible evaluative information. Activation of an existing attitude in the absence of comparison with other available information typically results in judgment stability. In contrast, when other information is accessible and an existing attitude is not activated, judgments should be based primarily on the online evaluation of this information. Under these conditions, attitude stability should occur when the evaluative implications of the accessible information are congruent with the prior attitude, but judgments should change when these implications are incongruent with the prior attitude.

**Comparison.** Individuals increase the confidence or extremity of an existing attitude when the evaluative implication of other accessible information corroborates their attitude. Correspondingly, individuals maintain the confidence or extremity of an existing attitude when the attitude and novel information are evaluatively congruent but only one is valid. Furthermore, individuals increase their confidence in, or extremity of, attitude judgment when they perceive their evaluation as valid and comparative processes have resulted in the invalidation of other evaluatively incongruent information. In contrast, comparing a prior attitude with incongruent but equally valid novel information results in moderation of the prior attitude. As implied by these possibilities, generally speaking, comparative processes will contribute to attitude change.

**Reciprocal Influence of Activation and Comparison.** Although the activation of a prior attitude will increase attitude maintenance in the absence of comparative processes, attitude activation will contribute to change when comparative processes are active. Simply put, in order to compare an existing attitude with other available information, the initial attitude must first be brought to mind. When a prior attitude is relatively inaccessible, the motivation to compare these two elements will facilitate attitude activation but may not be sufficient to produce the actual comparison. Under these conditions, the evaluative implication of the other available information is not likely to serve as an input for judgment construction, leading to stability in attitude judgments.

**Empirical Support.** Wallace and Albarracín (2003) conducted three studies exploring how factors associated with information selection and comparative processes influence attitude survival and change. As part of the proce-

dures, participants were induced to form an initial positive attitude toward a proposal to implement comprehensive exams. After a period of time, participants received additional information about the proposal before reporting their attitude toward comprehensive exams for a second time.

As part of the procedures of Studies 1 and 2, the initial message advocating comprehensive exams was followed by another message that contained new arguments also in support of the exams. In Study 1, activation and comparison were elicited by presenting the first message, which served as a basis for the initial attitude, at the time of presenting the second message. In Study 2, the comparison manipulation entailed explicit instructions to compare the implications of the second message with participants' attitudes based on the first message. The results of Studies 1 and 2 indicated that, as predicted by the model, judgments polarized when participants were induced to compare the new message with their earlier attitude, but showed greater stability when no comparison induction was in place.

Wallace and Albarracín's (2003) Study 3 was particularly helpful in clarifying the role of the accessibility of a prior attitude in subsequent evaluative judgments. In Studies 1 and 2, individual differences in need to evaluate (NE; Jarvis & Petty, 1996)—which in an independent sample correlated negatively with attitude response latencies (lower NE = slower attitude responses)—were used to estimate prior attitude accessibility (low NE = low attitude accessibility). To complement these findings, Study 3 assessed initial attitude accessibility more directly by measuring initial attitude response latencies (speedy attitude judgments were interpreted as an indicator of subsequent accessibility). Furthermore, Study 3 manipulated prior attitude accessibility by reminding half of the participants of their initial attitude judgment before they read the second information set, which contained information contradictory to the first set.

As expected, attitudes were generally stable when the initial attitude was highly accessible. Hence, akin to previous findings by Fazio (1989), these findings show that highly accessible attitudes can impede the online formation of new inconsistent attitudes. Of greater interest, however, are the findings from conditions in which comparative processes were active and the initial attitude was inaccessible. When participants' initial attitudes were inaccessible, evaluative judgments changed to a greater extent when the comparison instructions were presented with a reminder of the prior attitude rather than alone. These results, therefore, support the central tenet of the activation and comparison model that when people are motivated to compare their prior attitudes with new information, having a highly accessible prior attitude can actually promote attitude change. In contrast, when participants' initial attitudes



were accessible, attitudes changed in response to comparison instructions regardless of whether or not an attitude reminder was present.

Wallace and Albarracín's (2003) findings are particularly interesting because they are consistent with the model's prediction that both attitude stability and change can occur due to memory-based and online attitudinal processes. According to the model, when asked to report their attitude at Time 2, participants who were not induced to compare the second set of information with their initial attitude should have constructed a judgment primarily on the basis of their initial attitude if their initial attitude was accessible. In contrast, participants should construct a judgment primarily on the basis of the evaluative implications of the second information set if their initial attitude was not accessible. In Studies 1 and 2, the second information set was consistent with the first information set. Under these conditions, it is difficult to distinguish between judgments constructed on the basis of memory-based or online evaluations because both can (and did) yield attitude judgments consistent with the initial attitude. More informative, however, are the results of Study 3 in which the second information set was inconsistent with the first. According to the model, participants whose initial attitude is inaccessible should construct their judgment at Time 2 on the basis of the second evaluatively inconsistent message and thus change their attitude judgments. In contrast, those participants who spontaneously activated or were induced to activate their initial attitudes should maintain their initial judgments when no comparison instructions are present. Again, the results were in line with the predictions of the model.

**Summary.** In light of these findings, Albarracín and colleagues provide compelling evidence in support of their hypotheses that the activation of prior attitudes, the activation of attitude-related information, and the comparison of the attitude with the other information jointly determine the survival and change of prior attitudes. As a result, researchers may now have a better understanding of parts of the many different processes that govern the evolution of attitudes over time. Nevertheless, important aspects of these processes remain outside of the model. One such area is highlighted by Wilson, Lindsey, and Schooler (2000), who suggest that an attitude that changes does not perish. According to Wilson and colleagues, when people change a prior attitude, the prior attitude can persist at the implicit level and reemerge under some conditions. Because the scope of the activation and comparison model does not extend to storage processes per se, readers should consult Wilson et al.'s work for a treatment of how different attitudes may coexist in memory (but see Bassili & Brown, in press; Fazio & Olson, 2003).

In presenting their conceptualization of attitude survival and change, Albarracín and colleagues (2004) considered the possibility that people can activate up to two cognitive elements (i.e., the prior attitude and novel attitude relevant information) at a time. Without a doubt, however, individuals spend their lives in environments with large amounts of information. As a result, they must often make decisions after considering multiple elements that have the potential to guide their future attitudes. Hence, Albarracín and colleagues acknowledge that the presence of multiple prior attitudes or multiple pieces of novel information should have important implications for the processes they postulate. Future research should, therefore, address the processes elicited by information of greater complexity.

## GENERAL DISCUSSION AND FINAL COMMENTS

For some time, the literature on attitudes has lacked a comprehensive interpretation of the mechanisms underlying judgment survival and change. In particular, we emphasized the inadequate integration between representational and constructionist perspectives. We also suggested that a comprehensive model of attitudes must capture both the durability and the fluidity of evaluative judgments over time, and thus must acknowledge the contributions of prior attitudes and of the evaluative implications of other available information. As part of our review, we presented two recently introduced models that have embraced this logic: the potentiated recruitment framework of attitudes (Bassili & Brown, in press) and the activation and comparison model of attitude survival and change (Albarracín et al., 2004). We believe that these integrative models offer researchers exciting new tools with which to shape future research.

Earlier we noted that a recent consideration in attitude change is that one's concern for future consequences is likely to influence how one elaborates upon novel information and ultimately one's evaluative judgments (e.g., Strathman et al., 1994). It is interesting to contemplate the extent to which individual differences along this dimension may also cast further light on the contributions of memory-based and online evaluative processes in response to persuasive messages. On one hand, low-CFC individuals who are grounded "in the moment" may be more likely to base their evaluations on information available in the here and now. Moreover, these online evaluations may be primarily derived from available information that concerns the immediate consequences of one's actions. Following this logic, online information that contradicts previous information about the immediate consequences of one's actions should prompt low-CFC individuals to engage in comparative and elaborative processes, thereby provoking changes in attitude judgments.





On the other hand, high-CFC individuals, who have a chronic tendency to relate present actions to future consequences, may be more likely to rely on evaluations stored in memory, which may provide a more efficient means to relate current actions to long-standing distal goals. Moreover, these memory-based evaluations may be primed by available cues that concern future consequences. Following this logic, novel information that challenges one's prior evaluations of the future consequences should prompt high-CFC individuals to engage in comparative processes, contributing to changes in attitude judgments. Clearly, this line of reasoning is highly speculative and calls for future research. The CFC construct, however, may offer researchers a promising tool with which to examine the contribution of online and memory-based evaluative processes to attitude judgment and change.

In closing, many researchers have investigated the predictors and consequences of attitude survival and change. As a result, contemporary researchers have a greater understanding of the many different processes that govern the dynamics of attitudes over time. Unfortunately, the existing literature addressing attitude survival and change has suffered from a lack of comprehensive, theoretical integration, which is not surprising considering the difficulties inherent in achieving such integration. In view of this situation, we have called for an enhanced integration and theoretical development in attitude research and highlight two recent advancements toward this goal. The integrative models we have reviewed may offer researchers a new means to guide the development of programs to improve judgments and behaviors that are important for individuals in society. Given the important societal consequences of attitude survival and change we hope that these models and further consideration of the future orientation construct will stimulate such efforts in the future.

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# III



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