

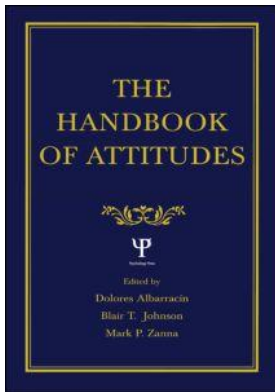
This article was downloaded by: 10.2.97.136

On: 06 Dec 2023

Access details: *subscription number*

Publisher: *Routledge*

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: 5 Howick Place, London SW1P 1WG, UK



## **The Handbook of Attitudes**

Dolores Albarracín, Blair T. Johnson, Mark P. Zanna

## **The Influence of Attitudes on Beliefs: Formation and Change**

Publication details

<https://test.routledgehandbooks.com/doi/10.4324/9781410612823.ch9>

Kerry L. Marsh, Harry M. Wallace

**Published online on: 01 Apr 2005**

**How to cite :-** Kerry L. Marsh, Harry M. Wallace. 01 Apr 2005, *The Influence of Attitudes on Beliefs: Formation and Change from: The Handbook of Attitudes* Routledge

Accessed on: 06 Dec 2023

<https://test.routledgehandbooks.com/doi/10.4324/9781410612823.ch9>

**PLEASE SCROLL DOWN FOR DOCUMENT**

Full terms and conditions of use: <https://test.routledgehandbooks.com/legal-notices/terms>

This Document PDF may be used for research, teaching and private study purposes. Any substantial or systematic reproductions, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The publisher shall not be liable for an loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

## 9

# The Influence of Attitudes on Beliefs: Formation and Change

Kerry L. Marsh  
*University of Connecticut*

Harry M. Wallace  
*Trinity University*

Through direct or indirect contact with an object or event, we experience what attributes that object may have, what feelings it evokes in us, and what actions we can take with regard to it. Our response to those experiences generally does not stop with a cataloging of these believed features, affective reactions, and perceived action-possibilities, however. Often, the resulting beliefs people form regarding whether the object has desirable or undesirable attributes leads individuals to form a general evaluative tendency, that is, an attitude toward that object. In this chapter we review research on one way in which forming such attitudes is useful: in aiding the subsequent retrieval, formation, or change in beliefs about the object. Because of the nature of conceptual structures such as attitudes, and because of the motivation to resist information that contradicts our current preferences, attitudes often have attitude-congruent effects on beliefs. Attitude–belief congruence means that individuals accept or revise their beliefs about attributes of the object in a way that makes these beliefs congenial with their attitudes. Although the more traditional way of conceptualizing the link between beliefs and attitudes is to view beliefs as causally prior to attitudes (see Kruglanski & Stroebe, this volume, for a review of these perspectives), there is evidence that attitudes also distort our beliefs, through information processing that is biased for motivational or cognitive reasons. Attitudes can influence beliefs by influencing the perception of an attitude object, by affecting the mere retrieval of beliefs on which the attitude was originally formed, or by constructing new beliefs on-the-fly. Moreover, circumstances that lead one to reflect on or change an attitude can strengthen attitude–belief associations and yet, paradoxically, cause distorted beliefs *about the beliefs* that formed those attitudes (an attitude–belief disconnect). This chapter reviews theoretical perspectives on attitude–belief effects and reviews the evidence for a causal impact of attitudes on beliefs, discussing the conditions under which attitude–belief congruence effects are strengthened or eliminated.

## ATTITUDES INFLUENCE BELIEFS THROUGH BIASED PERCEPTIONS

### Social Judgment Theory

According to the social judgment theory perspective (Sherif, Sherif, & Nebergall, 1965), prior attitudes serve as an anchor against which to judge other stimuli. At minimum, our attitudes influence our beliefs about others' attitudes—for example, how extreme or moderate their attitudes seem to us. Depending on where others' attitudes fall within one's latitude of acceptance, rejection, and noncommitment, one may assimilate or contrast others' positions with one's own position (e.g., Sherif et al., 1965). A belief about the validity of another person's position is contrasted in an unflattering light (toward disbelief) if it is in one's latitude of rejection, and assimilated and seen as more valid if another's position falls within one's latitude of acceptance. One implication of social judgment theory is that prior attitudes could influence retrieval of beliefs in the process of judging persuasive messages. Consistent with the tenets of social judgment theory, a number of studies provide correlational evidence that prior attitudes play an important role in belief retrieval (e.g., Johnson, Lin, Symons, & Campbell, 1995; Wood, 1982; Wood & Kallgren, 1988). Another implication of social judgment theory supported by research is that through assimilation and contrast processes, prior attitudes can lead to biased perceptions of information in a persuasive message, resulting in beliefs about the validity of the information in the message (Johnson, Smith-McLallen, Killeya, & Levin, 2004). Thus, a message that falls within one's latitude of acceptance will lead to beliefs that the arguments are valid and good, whereas arguments in a message that advocates a position far from one's current attitudinal position will be seen as weak.

### ATTITUDES' EFFECTS ON BELIEF RETRIEVAL

Social judgment theory indicates that the initial judgmental process of responding to a persuasive message may affect beliefs about the message content. The outcomes of this judgmental process may subsequently be stored in memory, to presumably have additional impact when attitudes are retrieved from memory. A number of theoretical perspectives suggest that attitudes have an effect on the accessibility of beliefs stored in memory. One fundamental issue, however, is whether retrieval will be biased in an attitude-congruent direction. A recent meta-analysis of memory for attitude-relevant information suggests that this issue cannot be concluded by simply assuming that attitude-congruent information that an individual receives will be stored and then retrieved when beliefs are assessed. Rather, an individual's memory for information that was received in a persuasive message is not necessarily biased in a congenial direction (Eagly, Chen, Chaiken, & Shaw-Barnes, 1999; Eagly, Kulesa, Chen, & Chaiken, 2001). Therefore, in the following section, we discuss what explanations better account for the retrieval of beliefs from memory.

### Cognitive Consistency Theories

A number of cognitive consistency and structural accounts suggest that retrieved beliefs should be consistent with attitudes. Consistency theories (Abelson et al., 1968; Rosenberg, Hovland, McGuire, Abelson, & Brehm, 1960) postulate consistency between the organization of relevant attitudinal/belief components. These include theories involving consistency in cognitive organization (Abelson & Rosenberg, 1958; Osgood & Tannenbaum, 1955; Rosenberg, 1956, 1960b), perceptual consistency–balance theory (Heider, 1958), and motivated inconsistency reduction–dissonance theory (Festinger, 1957). From each of these perspectives, attitudes and

beliefs will normally be psychologically consistent. According to Rosenberg (1960b), for instance, the magnitude and direction of one's attitude toward some object (termed *affect* in his writings) varies as a function of the summed beliefs regarding whether the object would be useful for achieving values, weighted by the importance of those values (Rosenberg, 1956). Thus, retrieval of the summary attitude should also lead to retrieval of relevant beliefs about the object, including values and beliefs about the instrumental potency of that object for attaining a value (Rosenberg, 1960a).

### Other Structural Perspectives

Other structural perspectives that have implications for attitude–belief relations make specific predictions regarding the way cognitive structures are organized. McGuire's early probabilistic research (McGuire, 1960a, 1960c) and his later research on the organization, content, and operation of thought systems (McGuire, 1960a, 1960c; McGuire & McGuire, 1991) suggests that people develop "connected and coherent thought systems around core events that might befall him or her" (McGuire & McGuire, 1991, p. 4) that help the individual cope realistically and autistically with these events. In McGuire's studies using syllogisms to test probabilistic models (McGuire, 1960a, 1960b, 1960c; see Wyer & Albarraçin, this volume), participants rated the desirability of sets of three propositions, and rated the subjective probability that each proposition was true. The propositions were syllogistically related such that if premises A and B were true, conclusion C should be true.

One way in which individuals are believed to cope with an event is by thinking of the pleasantness of the event's antecedents or consequences and the degree to which the antecedents promote the event. For example, the desirability of a potential event such as whether admission prices to major sporting events will increase will be judged on the basis of logical reasoning about the positivity of the consequences and antecedents. Thus, raised prices to the events will be viewed more negatively if they will lead one to not be able to attend as many sporting events and if it follows from negative antecedents such as rising operating costs. McGuire's model (McGuire & McGuire, 1991) also makes predictions about individuals' beliefs regarding the core event's likelihood of happening. *Sufficient reason* for the event's occurrence implies that individuals make realistic judgments based on how many antecedents promote or prevent it. Thus, an individual might view rising sports ticket costs as likely to the degree to which he or she believes that there are a number of antecedents such as decreasing sports profits, and as less likely if there are antecedents such as strict price control laws.

The implication of these principles is that attitude–belief systems are formed in an organized and coherent manner. The realistic and coping principles of McGuire's model, therefore, suggest that accessing one's attitude should also result in retrieval of beliefs that are consistent with the attitude. Other models that make more explicit assumptions regarding memory representations also suggest that there should be cognitive links between attitudes and attitude-relevant beliefs. Whether models assume a tripartite structure (Breckler, 1984), or view some attitudes as bipolar and others as unipolar, the structural assumptions imply that one's evaluative summary will be linked to supportive beliefs. For instance, attitudes can be viewed as involving object label, evaluative summary (attitude), and a knowledge structure that supports that evaluation (Pratkanis, 1989; Pratkanis & Greenwald, 1989). Such associative network models imply that through spreading activation, retrieving one's attitude will lead to activation of linked nodes such as beliefs (Sherman, 1987).

### Cognitive Processing Principles

Cognitive consistency and structural accounts, as well as social judgment theory, suggest that the congruence between attitude and beliefs is in large part a consequence of the assessment of

the truth-value of some event (the likelihood that the object has some attribute). This attitude–belief congruence is based either on the standard set by one’s own attitude, the logical link between antecedents and consequences, or the ways attitudes and beliefs are stored as a consequence of forming attitudes through weighted beliefs. Modern social-cognitive models of persuasion have implications for the underlying cognitive processes by which attitudes influence beliefs. Current models of persuasion include the elaboration likelihood model (e.g., Petty & Cacioppo, 1986; Petty & Wegener, 1999), heuristic-systematic model (Chaiken, Liberman, & Eagly, 1989; Chen & Chaiken, 1999), the MODE model of attitude–behavior consistency (Fazio, 1990b; Fazio & Towles-Schwen, 1999), and single-process models of persuasion (Albarracín, 2002; Kruglanski, Thompson, & Spiegel, 1999). Although models differ in the specific message reception (Albarracín, 2002) and yielding processes (e.g., Chaiken et al., 1989; Petty & Cacioppo, 1986) they describe, there are commonalities in the underlying information processing principles they assume. For instance, all models speak in some way to the consequences of cognitive limitations (i.e., lack of capability—limits that are due to cognitive content, or lack of cognitive capacity; Kruglanski et al., 1999), and variations in motivational engagement in the attitudinal issue. These cognitive process models have general implications for the processes of retrieving beliefs in response to retrieval of an attitude.

For attitudes to lead to belief retrieval, attitudes must first be formed online, that is, at the time of exposure to information (Mackie & Asuncion, 1990) rather than merely formed at the time of attitude expression. If attitudes are not formed online, then correlations between attitudes and beliefs cannot be caused by attitudes preceding belief formation. Moreover, even if attitudes are formed at the time when people are exposed to information about attributes of the attitude object, attitudes might not be used to cue retrieval of beliefs. Rather, if time is sufficient and accuracy motivation is high, beliefs might be retrieved directly (Sanbonmatsu & Fazio, 1990). For instance, assume one formed a more positive attitude about one department store over another, while also learning details such as the preferred store’s particular strengths in some departments and weaknesses in others. If one has to make an expensive purchase and has time to choose a store to patronize, one would go to the store one believed was better for that purchase rather than relying on one’s attitude toward the store (Sanbonmatsu & Fazio, 1990). With online formation of attitudes, the belief-related information that affected its formation could have been relatively unelaborated, as in the case where the individual was not motivated to deliberate and a message cue allowed for simple acceptance of the information (e.g., the message was presented by an expert). Alternatively, individuals who were exposed to a message on an issue of importance to them, for which they had sufficient knowledge and cognitive resources to ponder, might form beliefs (and attitudes) that diverge considerably from the message content. Because attitudes formed online can be stored separately from the beliefs that served as the basis for attitude formation (Hastie & Park, 1986), attitudes would only lead to retrieval of (attitude-consistent) beliefs to the extent that an individual makes sufficient effort to retrieve them. In this case, attitudes will likely lead to a bias to retrieve those beliefs that were most strongly elaborated and, thus, most congruent with the attitudes.

For example, research testing the cognition in persuasion model indicates that relatively more effortful processing (that is, moderate motivation and high ability) is required for beliefs to be used in the formation of attitudes (Albarracín, 2002). When cognitive resources are more limited, individuals will use other information to form their attitudes (e.g., affective state). The implication of this premise for subsequent retrieval is that attitudes that are formed from more elaborative processes (central route or systematic processing rather than peripheral cues) are most likely to lead to biased retrieval—albeit the beliefs retrieved may not be the equivalent in content to information that the individual received. That is, beliefs that are retrieved in such a situation will be biased in an attitude-consistent direction—and it may

be the case that original information that was attitude-*uncongenial* might well have been most strongly counterargued (Eagly, Kulesa, Brannon, Shaw, & Hutson-Comeaux, 2000) and, thus, least believed. In contrast, for attitudes that are formed through more shallow processing, for example, using an affective cue about one's emotional state at the time of attitude formation, retrieval of one's attitude necessarily cannot yield retrieval of beliefs that formed those attitudes. However, these attitudes can affect the subsequent formation of beliefs (Albarracín & Wyer, 2001).

#### Implications of Attitude–Belief Retrieval for Belief Formation

Approaches that emphasize that retrieving one's attitude will increase the accessibility of beliefs in memory also have implications for constructing beliefs on-the-fly from the retrieved attitude. For instance, from McGuire's perspective, there are logical cognitive ramifications of attitudes for the belief system. Attitudes have an impact on logically related propositions as well as relatively remote logical ramifications (McGuire, 1981). For example, if one has a positive attitude toward teacher competency testing, and then encounters new information that a teacher failed or passed such a test, one's positive attitude toward such testing is likely to form beliefs that follow logically: One's inferences about the teacher's competence will be affected by this information (Mackie, Ahn, Asuncion, & Allison, 2001). Individuals with negative attitudes toward such testing will not be affected by such information, because such inferences do not follow logically from a position opposing the validity of such tests.

However, the implication of more complex analyses of attitudinal processes yielded by information processing principles lead to the conclusion that motivated inference processes will more commonly occur than will logical reasoning processes. In the next section we detail evidence that attitudes lead to the formation of beliefs that are distorted in an attitudinally congenial manner.

### ATTITUDES INFLUENCE MOTIVATED INFERENCES

When individuals form an attitude online (Mackie & Asuncion, 1990), and such attitudes are sufficiently accessible from memory (Fazio, 1990b), these attitudes can often have a direct effect on an individual's beliefs that an object or event has certain qualities. The most common effects reflect motivated inferences that yield attitude–belief congruency. Such effects of attitudes on beliefs are not merely limited to beliefs about the attitude object (Lord, Ross, & Lepper, 1979; Rosenberg, 1960b) but can extend to beliefs about related events or objects (Hastorf & Cantril, 1954), beliefs about future outcomes (Babad & Katz, 1991; Markman & Hirt, 2002; McGuire, 1960a), and beliefs about other people's attitudes (Krosnick, 1990a).

#### Wishful Thinking

Despite the assumptions of cognitive consistency and structural models, the effects of attitudes on inferences do not always adhere to logical consistency. Individuals may display logical inconsistencies between available information and their preferred attitude-consistent conclusions, distorting judgments in an attitude-consistent direction. One autistic coping principle of McGuire's thought system analysis is a *rationalization* principle that suggests that one adjusts the desirability of the core event based on its likelihood. Thus, one might come to feel that rising sports ticket prices would not have such devastating consequences after all, if it seemed inevitable that this was to occur. McGuire's research indicated that when inconsistencies in subjective probability ratings in syllogism triads occurred, they tended to be a function of the

desirability of the consequences (McGuire & McGuire, 1991). The total evidence of wishful thinking from McGuire's studies, however, offers only weak support that the attitudinal valence of statements has an effect on whether we believe them to be true (see Wyer & Albarracín, this volume). Dillehay and colleagues (Dillehay, Insko, & Smith, 1966) also found mixed support for wishful thinking, finding effects of belief distortions in some, but not all, circumstances. Both McGuire (1960a) and Dillehay et al., however, found support for validity-seeking processes. Namely, presenting participants with messages that argued for the truth of a proposition led to changes in unmentioned, though logically related, beliefs.

Results of more recent research examining moderators of attitude strength in persuasion (Johnson et al., 2004) suggests that attitudes' impact on beliefs may be more consistent overall with wishful thinking than with logical, validity-seeking processes. Johnson et al. (2004) examined the relationship between desirability of a proposition and beliefs about the likely truth of the proposition, and these variables' effects on judgments of argument strength. Johnson et al.'s valence hypothesis suggests that the label of *argument strength* is usually a proxy for the degree to which an argument is positive in valence, or implies desirable consequences, and that perceived validity of an argument is not the basis for argument strength. For example, their research indicated that commonly used arguments viewed as strongly supportive of having senior comprehensive exams were positively valenced statements such as maintaining academic excellence at the university, or attracting more corporations for job recruitment (e.g., Petty, Harkins, & Williams, 1980). In contrast, weak arguments about difficult exams preparing one for life implied undesirable consequences such as the possibility of failure and unpleasant difficulties in the future. Moreover, propositions that implied more desirable consequences were perceived as more likely, but it was the valence of the position—that is, the degree of congruence with desired consequences—that affected attitudes, not the likelihood of the consequences (Johnson et al., 2004).

Although McGuire (1960c) suggested that the events for which subjective probability and desirability were being assessed could involve any object of judgment, including physical entities or combination of entities (McGuire, 1960c, 1981), most of his research involved propositions about future states of affairs or occurrences (e.g., McGuire & McGuire, 1991). Thus, results of these studies have the most implications for *wishful thinking* in which beliefs about the likelihood of a future event are biased by an individual's attitudes toward that event. Evidence for wishful thinking is particularly abundant in the area of political attitudes. Analyses of nonsystematic surveys of college students and community members conducted prior to World War II (Cantril, 1938; McGregor, 1938) suggested that participants' attitudes toward the occurrence of political events affected their attitudes toward events for which predictive data were ambiguous (Roosevelt being elected) but not for events with strong external evidence (another world war, Hitler being in power). More systematic survey research during the last 55 years also offers evidence for wishful thinking bounded by reality, though the correlational nature of these investigations leaves the causal direction of the attitude-beliefs relationship open to interpretation. In elections, preferences for a political candidate strongly influence predictions of who will win an election in the United States (Granberg & Brent, 1983; Lewis-Beck & Skalaban, 1989) as well as in other countries such as Israel and New Zealand (e.g., Babad & Yacobos, 1993). For instance, for both state and national elections, candidate preferences predicted citizen forecasts (Dolan & Holbrook, 2001). For other political predictions (Granberg & Holmberg, 1986) and predictions in other arenas, evidence for wishful thinking or an *allegiance bias* (Markman & Hirt, 2002) is equally strong. For instance, Babad and colleagues (Babad, 1987; Babad & Katz, 1991) found that soccer fans in soccer stadiums and betting stations in Israel displayed wishful thinking regarding the outcome of the games. Such results have been replicated in the United States for fans of college sports teams (e.g., Markman & Hirt, 2002).

### *Breadth and Mechanisms of Effects*

A wide range of studies, covering domains as diverse as sporting events and the political arena find that wishful thinking is pervasive. In contrast, the effects for a reverse association between desirability of outcome and beliefs about it coming true are more limited. Research examining people's predictions of who would win U.S. presidential elections from 1952 to 1980 indicated a *bandwagon effect* (i.e., implying more rationalization processes) only in 1960, when a significant number of individuals who initially preferred Nixon but expected Kennedy to win voted for Kennedy (Granberg & Brent, 1983). Apart from this single example, most data from these elections are consistent with wishful thinking rather than rationalization, but these effects are also bounded by reality constraints. If a citizen wants a particular candidate to become mayor of her town, she is more likely to predict that her candidate will win (Dolan & Holbrook, 2001), and she is likely to view arguments that imply that outcome as stronger than arguments implying a loss (Johnson et al., 2004). One reason for such autistic thinking is that it serves a coping function (McGuire & McGuire, 1991), psychologically defending oneself against undesired outcomes. But even as it might serve an irrational function of making something appear to be more likely to come true, it might also serve an adaptive and rational function—an overgeneralization of the promotive effects of positive expectations on reality.

Wishful thinking might be a form of superstitious behavior designed to influence reality. For instance, one might refuse to harbor negative expectations about a desired reality in the case of wanting a particular horse to win a race. Violating such superstitions by betting against one's preferred horse might be seen as bad karma that could in some way cause that horse to lose. Second, and more realistically, for outcomes over which one does have some control over the outcome, a bias to believe in one's preferred reality is adaptive for creating such a reality because of the positive effects on motivation and action that result from holding that bias (Nasco & Marsh, 1999). Thus, having some confidence about one's political candidate's chances to win might lead one to more effectively work for that outcome (donate money, campaign, be an effective persuader of others), whereas extreme doubt of the personal controllability of that outcome would decrease effective action (Bandura, 1997; Wortman & Brehm, 1975). Wishful thinking in this context, however, is also bounded by reality. In cases where a negative outcome is likely and consequential, likelihood judgments may show the opposite of optimism, where individuals "brace for the worst" by anticipating a feared future (Shepperd, Findley-Klein, Kwavnick, Walker, & Perez, 2000).

### Current Attitudes Yield Biased Predictions Regarding Others' Attitudes and One's Own Past Attitudes

Attitudes also affect our beliefs about others, an effect frequently examined in the political arena. People whose policy attitudes are important to them are likely to believe that candidates have substantial differences in their attitudes on policy issues (Krosnick, 1990a). On rare occasions, partisans hold negative beliefs about others such as in the negative media bias, in which medias are viewed as hostile toward one's side (Vallone, Ross, & Lepper, 1985). However, most distortions of beliefs about others are in an attitude-supportive direction. For instance, according to the attitude projection hypothesis, individuals' attitude toward a policy may lead them to distort their perceptions of a favored (or disfavored) candidate's position on a policy relevant to their attitude (e.g., research by Granberg & Brent, 1980; Shaffer, 1981). To conduct a strong test of this projection hypothesis, studies must look at how attitude position and prior perceptions of candidate positions before an election predict *subsequent* perceptions of candidate's perceptions. One such study (Krosnick, 1990a) found little evidence that *change* in perceptions of a candidate's position was predicted by prior attitudes, suggesting that the



evidence for attitude projection is weaker than political psychologists have thought. However, other research suggests that forming a positive attitude toward someone (e.g., having a friendly instructor) can lead us to believe they have other positive attributes (e.g., are intelligent), an effect termed the *halo effect* (Kozlowski & Kirsch, 1987; Lance, LaPointe, & Stewart, 1994; Nisbett & Wilson, 1977a). This tendency to make attitude-congruent inferences about others may even extend to situations where we evaluate the validity of information about individuals. For instance, students who were asked to identify facts about liked and disliked personalities were more likely to identify attitude-congruent facts as true (Pratkanis, 1988).

Moreover, similar processes occur when people use their current attitudes as a guide for forming beliefs about themselves. Considerable research by Ross and colleagues indicates that individuals' beliefs about what their attitudes were in the past are distorted by their current attitudes. Individuals whose attitudes have been changed showed selective retrieval of their past beliefs, and faulty reconstruction of autobiographical memories (e.g., Ross & Conway, 1986). Thus, a woman who supports a conservative candidate, currently owns her own business, and makes considerably more money than when she was much younger may falsely recollect her previous beliefs about her political positions. She may be likely to forget that as a student she had more liberal beliefs and supported political positions that were less conservative than her current political attitudes.

### *Summary*

Effects such as projection, the halo effect, and biased assessments about facts regarding others or oneself in the past occur for reasons similar to that of wishful thinking. These effects occur both because of motivational reasons as well as for cognitive appraisal reasons—that attitudes are handy tools for assessing reality (Pratkanis, 1988). In addition, such effects as inferring one's own past beliefs also reflect faulty retrieval and reasoning processes, including implicit theories regarding attitude-belief congruence and beliefs about personal stability (Ross, 1989; Ross & Conway, 1986). Although the outcomes of resulting judgmental processes can often be biased, it is important to recognize that using one's attitude to make inferences can be useful, for instance, in a situation in which one would otherwise have no information. Thus, one's own attitude has some informational value that can improve predictive accuracy (e.g., Hoch, 1987; Murphy, Jako, & Anhalt, 1993; Solomonson & Lance, 1997). An individual from a different culture, dropped into a completely alien society would dramatically improve his ability to guess about other people's beliefs if he were given any member of that society's attitudes as a starting point for his judgments. On the other hand, the individual would do well to document his current attitudes so that once the attitudes he reported changed, he would not have to rely on highly faulty reconstructive processes to recall what they had been.

### Biased Processing of New Information

Considerable evidence suggests that acceptance of new beliefs, or updating of old beliefs, are biased in an attitude-consistent direction. First, individuals are less likely to expose themselves to information that contradicts their attitudes. For example, people are less likely to be around people whose views differ from their own, or to choose to listen to a talk show host whose views strongly contradict their own. Both *de facto* exposure and selective exposure that is dissonance driven (Frey, 1986; Sweeney & Gruber, 1984) contribute to individuals' continued exposure to attitude-confirming information.

Second, individuals' prior attitudes may often serve to bias the new beliefs they form (or old beliefs they update) because of ability limitations. Individuals who have an attitude supportive of one political candidate have knowledge bases that are consistent with their attitude; thus, their understanding, interpretation, and storage of new information is likely to be

attitude-consistent. In examining the hostile media phenomenon (that the media is perceived as being unduly biased against one's own side), researchers suggested that part of the reason pro-Israeli and pro-Arab students believed that media coverage of highly charged events in West Beirut in 1982 was biased (Vallone et al., 1985) was because their informational bases (e.g., the content and analyses *not* covered by the media) differed. To the extent that biases are informationally based rather than motivationally driven, individuals who are aware of the potential biasing effects of their attitude could potentially correct their beliefs to adjust for these biases if they were motivated and able (Wegener & Petty, 1997).

Third, individual's prior attitudes distort the processing of new information for motivational reasons. As detailed in the following, considerable evidence suggests that individuals process new information in an attitude-congruent manner so as to defend themselves against a wide range of unwanted conclusions, from believing that one's attitudes are incorrect, to believing that one's health is in danger. These processes reflect, in part, the natural conservatism of the cognitive system: Individuals show a status quo effect in their decisions, resisting making a different choice unless the new choice is substantially better, so they tend to avoid accepting that their attitudes are contradicted by new information about the attitude object. Motivated reasoning processes (Kunda, 1990) regarding the probable attributes of an entity may serve to bolster and maintain attitudes and maintain an inherent sense of the continuity and consistency of self (Abelson, 1986). Moreover, the beliefs we form after exposure to information may serve motivational purposes much the way other cognitive biases do, such as attributions about the causes of events that are biased in a self-flattering manner (Bradley, 1978; Greenwald, 1980). From the perspective of the heuristic-systematic model, attitudes will be particularly likely to bias forming or updating beliefs when an individual experiences defense motivation, the "desire to hold attitudes and beliefs that are congruent with one's perceived material interests or existing self-definitional attitudes and belief" (Chen & Chaiken, 1999, p. 77). In addition to evidence that attitudes distort beliefs in an attitude-congruent direction (Bothwell & Brigham, 1983; Ditto & Lopez, 1992; Hastorf & Cantril, 1954; Houston & Fazio, 1989; Lord et al., 1979; Pomerantz, Chaiken, & Tordesillas, 1995; Proshansky, 1943), there is considerable evidence that general self-interest or hedonic relevance of an attitude increases belief distortion (Ditto & Lopez, 1992; Giner-Sorolla & Chaiken, 1997; Liberman & Chaiken, 1992). In the studies that provide this evidence, participants are typically presented with novel belief-relevant information that contradicts their preferred beliefs, implying for instance that the individual may be sick or at risk for disease, or arguing for a position that goes against the individual's vested interest. In many cases, such research is not dealing with the effects of existing attitudes, but attitudes that are constructed on-the-fly in the experimental context. For instance, even if one did not know about a given disease prior to an experiment, one's intrinsic attitude toward personal physical well-being will lead to automatic generation of a negative evaluative response to the idea of being infected with this previously unknown disease. Thus, a positive evaluative tendency toward being healthy and alive, performing well, or being viewed positively by others can lead to defensive distortion in beliefs (e.g., unwillingness to believe a negative outcome).

### *Empirical Evidence for Motivational Distortions*

The strongest evidence that attitudes' effects on beliefs are motivationally driven comes from situations in which individuals are exposed to ambiguous information such as at sporting events, in research reports, or in information about an individual. Attitudes frequently lead to the formation of attitude-congenial beliefs through biased processing of ambiguous information. Two classic examples stand out. Hastorf and Cantril (1954) found that Princeton and Dartmouth students who viewed the same Princeton versus Dartmouth football game had different beliefs regarding the infractions each team had committed. Two decades later, Lord, Ross, and Lepper (1979) had participants who held extreme attitudes for or against capital punishment read

articles that presented mixed evidence regarding capital punishment as a deterrent for crime. Attitudes affected their beliefs. For example, participants viewed the proattitudinal report in the experiment as more convincing than the counterattitudinal report, and they devoted more critical scrutiny regarding the methodological flaws in studies yielding counterattitudinal findings. Other studies have replicated Lord et al.'s results using their capital punishment materials (Houston & Fazio, 1989; Pomerantz et al., 1995). Comparable biasing effects have been demonstrated using other materials (Bothwell & Brigham, 1983; Proshansky, 1943) and in different domains such as impression formation (e.g., Lott, Lott, Reed, & Crow, 1970). For instance, college students who watched the 1980 Reagan–Carter U.S. presidential debate believed that the candidate they preferred prior to the debate had won the debate (Bothwell & Brigham, 1983).

### *Mechanisms of Motivational Distortion*

Researchers have specified a number of mechanisms by which defense motivation results in attitudes having a biasing effect on beliefs. Many of the principles are not specified in any particular model of persuasion (e.g., modern dual process models), but are derived from social cognition and information processing principles relevant to persuasion (e.g., Albarracín, 2002; McGuire, 1968; Sherman, 1987; Wegener & Carlston, this volume).

*Biased Information Seeking.* Defense motivation engages what lay epistemic theory would label a need for specific closure—that is, a desire to reach a particular conclusion. One way to achieve this particular closure is to prematurely freeze the search for information if the search yields information that supports the desired conclusion (Kruglanski, 1989, 1990). Ditto and Lopez (1992, Experiment 1) induced a positive or negative attitude toward a potential interaction partner. Participants were then allowed to see their partner's responses to analogy items, on which the person was shown to perform well or poorly. Participants ended their examination of the other person's performance on the items more quickly when the performance allowed them to develop beliefs about the person that were consistent with their attitude. In addition, defense motivation is associated with delayed freezing in an epistemic search (Kruglanski, 1989, 1990) when incoming information is disconfirming of one's preferred conclusions. Ditto and Lopez (1992, Experiment 2) found, for instance, that when participants testing themselves for a fictitious medical condition believed that a test indicator needed to change color in order to indicate absence of the condition, participants not only waited much longer to conclude the test, but sought to test themselves again.

*Biased Analysis and Evaluation of Information.* For belief-relevant information that is not congenial with one's attitude or personal interests, one may show more extensive analysis and critical evaluation of the information. Considerable evidence suggests that individuals engage in biased hypothesis testing (Snyder & Swann, 1978), a process that often is motivated toward confirmation of an existing bias. One way in which individuals might confirm a desired hypothesis, for instance, is by setting higher standards for validity of a less preferred belief. For instance, Ditto and Lopez (1992) found that participants were more likely to take multiple tests if an initial test diagnosing some presumed illness yielded an undesirable outcome. Moreover, the individual might selectively focus on weaknesses of the opposing position but ignore the weaknesses of evidence that supports one's position (e.g., Hastorf & Cantril, 1954; Lord et al., 1979), or combine information in a biased manner (Petty & Wegener, 1999). For instance, Liberman and Chaiken (1992) had coffee drinkers (versus nondrinkers) read an essay discussing different reports arguing for and against the hypothesis that coffee drinking was associated with development of disease. Each report had methodological limitations, allowing for biased interpretations to have an effect. Thus, the coffee drinkers processed the threatening aspects of the reports the most, finding methodological flaws in the reports that supported a link between coffee drinking and disease.

*Biased Cognitive Responses.* In addition to more critically evaluating and analyzing the content of messages that contradict one's attitude or desired conclusion, individuals' self-generated arguments will be biased in a direction toward their preferred conclusion. The role of cognitive responses in mediating persuasion has been verified by experimental procedures that direct an individual's thoughts in a message-agreeing or message-disagreeing manner (Killeya & Johnson, 1998). Instructing an individual to engage in favorable thoughts about a message or to engage in unfavorable thoughts can overcome the effects of weak and strong arguments, respectively (Killeya & Johnson, 1998). Therefore, individuals who are motivated to direct their thoughts toward discounting a message's undesired conclusion may often be successful. For example, Ditto and Lopez (1992, Experiment 3) found that participants were able to come up with more potential excuses for why a test might be wrong when the test result implied an undesirable outcome.

*Biased Use of Heuristics.* Both the heuristic-systematic model and the elaboration likelihood model suggest that biased processing that occurs for motivational reasons can lead to biased assessment of persuasion cues as well as biased elaboration of message arguments if elaboration likelihood is high (Petty & Wegener, 1999). In general, attitude-biased or self-interest-biased processing leads individuals to use heuristics if heuristics are congenial with one's attitude or interests, but they are ignored or actively discounted if they are contrary to one's attitude or interest. For instance, participants who had a vested interest in validating the importance of essay exams (i.e., they believed they performed better on these) or invalidating essay exams responded differently to a consensus cue depending on whether a message was supportive of their vested interest (Giner-Sorolla & Chaiken, 1997). Thus, people who received only the consensus cue saw it as less reliable if it contradicted their vested interest. For people who also received a message and the consensus cue was hostile to their vested interest, the effects of vested interests on attitude change were partially mediated by participants' cognitive elaborations.

Whether one or another of these processes will occur should depend on the reality constraints of the situation—these processes will be used strategically and flexibly given the constraints of the particular situation. Each of these effects implies that relevant attitudes (e.g., regarding being healthy) are automatically accessed in that situation and then they bias perception of the attitude object (Fazio, 1990a). If the relevance of the information to one's attitudes or beliefs was not apparent to an individual, or the relevant attitude or hedonic relevance were not highly accessible, these biases would not occur. Moreover, an individual's ability to engage in more thought-intensive strategies will also be important. Individuals who cannot engage in more elaborative processes because of cognitive distractions or time pressure for instance, may simply reject or accept the belief-relevant information, or strategically assess the validity of salient peripheral cues (Petty & Wegener, 1999). In addition, other situational factors may reduce individuals' needs to distort their beliefs in an attitude-consistent direction. For example, individuals who have recently affirmed their values respond more objectively to information in a message rather than showing a proattitudinal distortion (Correll, Spencer, & Zanna, in press).

#### MODERATORS OF ATTITUDE-BELIEF CONGRUENCE IN RETRIEVAL AND FORMATION OF BELIEFS

A number of moderators of the tendency for attitudes to increase the accessibility of beliefs stored in memory and for attitudes to yield distorted beliefs have received empirical support. In general, these moderators fall into two categories—those that reflect circumstances about which beliefs are being retrieved or formed and serve as reality constraints, and those that

reflect qualities of the attitudes themselves (e.g., attitude strength; for a review, see Fabrigar, MacDonald, & Wegener, this volume).

### Situational Constraints

Ambiguity increases the congruence between attitude and belief for numerous phenomena, including wishful thinking (Cantril, 1938). People's tendency to distort information in an attitude-congruent direction is bounded by reality. To paraphrase Singer (1980), a distinguishing feature of belief systems is that they all are apparently true—people do not intentionally choose to believe something they know is false. The strongest evidence for attitude–belief congeniality comes from situations where evidence for and against one's attitudinal position in a new situation is mixed, ambiguous, or incomplete, and not in situations where the objective outcome of some attitude-relevant situation is highly salient (Allison, Beggan, Midgley, & Wallace, 1995). In predicting future political outcomes, for instance, evidence of wishful thinking is reduced when there is overwhelming evidence for the likely outcome (Cantril, 1938; McGregor, 1938). Analysis of U.S. presidential elections over 30 years also indicated that wishful thinking was weaker in years when the outcome of the election was relatively unambiguous (Granberg & Brent, 1983). Strong evidence of attitudes' distorting influence on beliefs comes from experimental contexts in which mixed information is presented, such as evidence for and against capital punishment (Lord et al., 1979), or mixed research evidence for a caffeine–disease link (Lieberman & Chaiken, 1992).

The source of attitude–belief congruence effects is clarified by examining the variables that are *not* sufficient for reducing attitude–belief congruence. In general, imposition of external motivators to reduce biased distortions has little effect. Instructing people to be objective in their judgments can have small effects for limited groups, reducing wishful thinking (Babad, 1987), but it often does not (Babad, Hills, & O'Driscoll, 1992; Babad & Katz, 1991). Similar manipulations, such as making individuals more accountable for their judgments or other attempts to explicitly direct individuals' processing in an objective direction, have also typically not had much effect (Babad, 1997).

Additional evidence for the limited effectiveness of external inducements is that monetary inducements do not eliminate wishful thinking in sports fans (Babad & Katz, 1991) or in voters (Babad, 1997). The limitations of external instructions and external incentives in moderating wishful thinking suggests that when attitudes distort beliefs, they do so either because of limitations in cognitive capabilities or because of an automatic (and difficult to override) orientation toward attitude-maintenance. Cognitive content is less likely to play a role in moderating attitude effects on beliefs for many of the contexts that have been studied. For instance, during a game, biased access to knowledge about each team's strengths and weaknesses should be substantially less important during the immediacy of a game. In contrast, knowledge during exposure to a political persuasion attempt would be substantially more important. Overall, for thinking about the future, the evidence is more supportive of a motivated distortion.

### Attitudinal Features

Other moderators of attitude–belief congruence pertain to aspects of the attitude itself. When considered along a nonattitude (Converse, 1964) to attitude dimension, true attitudes are likely to lead to more generation or retrieval of beliefs than nonattitudes, especially beliefs that are congruent with the valence of the prior or changed attitude. In particular, attitudes that are highly accessible, meaning that they are automatically evoked by presentation of an attitude object, will be associated with a strong tendency to retrieve beliefs and interpret

attitude-relevant information (the foundation of beliefs) in an attitude consistent manner (Houston & Fazio, 1989). Fazio and Williams (1986) found that individuals' beliefs about the performance of Reagan in a TV debate were biased in the direction of their attitudes, an effect that was stronger in individuals with more accessible attitudes regarding Reagan. Moreover, attitudes that have been formed by means that increase attitude accessibility (e.g., direct experience; Fazio, Chen, McDonel, & Sherman, 1982) or attitudes that have been made temporarily more accessible (e.g., through repeated expression; Houston & Fazio, 1989; Schuette & Fazio, 1995) have more effects on subsequently expressed beliefs. For instance, participants with more accessible attitudes toward the death penalty had stronger correlations between their attitudes and their beliefs about the capital punishment studies used in Lord et al. (1979; Houston & Fazio, 1989). Such effects were not present, however, when participants had high concern about making valid judgments (Schuette & Fazio, 1995). These effects were, therefore, consistent with the MODE model's predictions that attitude effects on perceptions will diminish with increased motivation to process information in a deliberative fashion.

Another important moderator of attitude–belief congruence effects is whether the attitude is one about which an individual has knowledge or not. For instance, instructions to reflect on one's attitude would not be expected to lead to polarization if participants do not have access to the reasons they formed their attitude (e.g., Wilson, Dunn, Bybee, Hyman, & Rotondo, 1984). For wishful thinking phenomena, although political knowledge attenuates wishful thinking (Babad, 1997; Babad et al., 1992; Dolan & Holbrook, 2001), there is some evidence (Babad, 1997) that it does so only weakly. In general, individuals who are able to successfully defend their attitudes against new belief-inconsistent information must have sufficient, accessible knowledge. For instance, Chaiken and Yates (1985) found that high consistency subjects generated refutational thoughts in response to discrepant information. Knowledge works as a moderator for cognitive as well as motivational reasons—one has adequate knowledge to adequately defend one's prior attitude, but even under high accuracy motivation, having access to a complex base of knowledge that is homogeneous, that is, involves highly correlated dimensions (Millar & Tesser, 1986b), can yield attitude-congruent beliefs.

Perhaps the most important attitudinal dimension that moderates attitude–belief congeniality effects is attitude strength. By definition, attitudes that are strong rather than weak should have more influence on beliefs, generally in a congruent direction. Strong attitudes are those that are durable (persistent and resistant) and impactful (influence information processing and judgments; Petty & Krosnick, 1995). Stronger attitudes can reflect a number of different dimensions. For instance, individuals vary in the degree to which their attitudes are consistent with their beliefs. Individuals with high evaluative–cognitive consistency should have stronger congruence and more highly organized beliefs (Chaiken & Baldwin, 1981). Moreover, attitudes that individuals subjectively experience as important are believed to involve more knowledge that is primarily accurate (which implies more attitude–belief consistency); such attitudes should have more influence in guiding interpretations (Boninger, Krosnick, & Berent, 1995). For example, people whose policy attitudes are important to them are more likely to believe that candidates have substantial differences in their attitudes on policy issues (Krosnick, 1990a). Attitude importance is associated with having more accessible attitudes, being more knowledgeable about issues, having the attitude linked to more core values, and having more internal consistency (Krosnick, 1990b)—all factors that may increase the likelihood that attitudes will lead to consistent beliefs. The emphasis of attitude importance research, however, is that beliefs are congenial with attitudes for relatively objective reasons (attitude-consistent knowledge and beliefs that result from cognitive elaborations of one's attitude position). The most plausible explanation for the link between attitude importance and attitude–belief consistency is that importance involves highly accessible attitudes (Lavine, Borgida, & Sullivan, 2000; Lavine, Sullivan,

Borgida, & Thomsen, 1996) toward objects that one has extensive knowledge about and that one is motivated to think about. Important attitudes are likely high in *embeddedness*, that is, linkage to the self, values, or knowledge, but moderate in degree of commitment or certainty (Pomerantz et al., 1995). Although in some cases high motivation to deliberate about incoming information could reduce the direct impact of attitudes on perceptions (Fazio, 1990b; Schuette & Fazio, 1995), this effect is compensated for by the tendency for attitude importance to increase approach tendencies toward proattitudinal information (Visser, Krosnick, & Simmons, 2003).

The attitude strength concepts of *personal relevance* or *vested interest* are more commonly used to refer to attitude objects that have an impact on pragmatic or hedonically relevant outcomes and are less inherently linked to personal values. In particular, many manipulations of personal relevance were intentionally chosen to involve attitude objects for which individuals have limited knowledge and counterarguments (Petty, Cacioppo, & Haugtvedt, 1992). Issues that are more personally relevant because they have implications for one's own practical outcomes are likely to induce more thoughtful analysis. Merely engaging in thought about issues that are logically related to one's attitudes can lead to more consistency between cognitive elements such as attitudes and beliefs (the *Socratic effect*; McGuire, 1960a). Moreover, self-threat also engages motivated defense against attitude-inconsistent belief formation. Personal relevance and vested interest manipulations vary considerably in the degree to which they evoke threats to the self. The degree to which the outcomes threaten pragmatic outcomes (e.g., tuition hikes, senior thesis exams), self-identity, or self-existence (e.g., ego-involving issues that evoke personal values; Johnson & Eagly, 1989; and threats to one's health or life) likely determines whether attitude-belief congruency is a function of cognitive biases versus more radically distorted motivated reasoning. In support of the former process is evidence that personally involving attitude issues lead to increased thought and polarization and, thus, heightened attitude accessibility (Thomsen, Borgida, & Lavine, 1995). Moreover, structural accounts similarly argue for this process. McGuire's model (McGuire & McGuire, 1991) predicts stronger links among thought elements for highly desirable and personally involving events.

There is some evidence, however, that vested interest can lead to defensively distorted beliefs. For example, in one study, students at a university who believed they would be most affected by a tuition surcharge had stronger beliefs that all other students (even those unaffected by the surcharge) would have attitudes similar to their own (Crano, 1983). In addition, evidence that vested interest's effect occurs in part for self-protective reasons is reflected by the fact that the false consensus bias is stronger after a failure manipulation (Sherman, Presson, & Chassin, 1984). Moreover, studies in which the potential outcomes threaten one's health find that participants distort their beliefs about the accuracy of the implied information (Ditto & Lopez, 1992; Liberman & Chaiken, 1992).

#### *Caveats to Attitude Strength as a Moderator*

Having more elaboratively structured, that is, stronger, attitudes means more thoughtfulness in response to counterattitudinal information. For example, one should have well-elaborated thoughts regarding why counterattitudinal information that has been encountered is believed to be incorrect. As a result, although one's attitudes should be congenial with one's stored beliefs, there may be no congeniality effect reflected in the correlation between remembered information one was exposed to (because one's active refutation of them might have yielded quite contrary beliefs) and one's attitude (Eagly et al., 1999; Eagly et al., 2000).

Moreover, many attitude-belief effects are quite robust and occur even when attitude strength dimensions are apparently low. For instance, Granberg and Brent (1983) found that the effects of preferences for a U.S. presidential candidate on individuals' expectations that

they would win were not much weaker for nonvoters and those who said that the candidate choice was not that important to them. Thus, although some conditions (such as stronger attitudes) lead to stronger attitude–belief congeniality effects, few conditions lead to the complete elimination or reversal of congeniality effects.

One final caveat comes from Tetlock's value pluralism model of ideological reasoning (Tetlock, 1983b, 1986; Tetlock, Armor, & Peterson, 1994; Tetlock & Boettger, 1989; Tetlock, Peterson, & Lerner, 1996). This model suggests that certain ideologies may lend themselves to more integrative complexity, which involves holding equally strong, conflicting values. In such cases one might infer that the beliefs yielded from such political attitudes and attitude systems will not show simple congruency.

## Conclusions

In sum, the mechanisms by which attitudes bring about the formation or retrieval of congruent beliefs are structural as well as motivational. That is, the mechanisms reflect either the outcomes of judgmental processes (Sherif et al., 1965) or the way attitudes and beliefs are perceptually (Heider, 1958) or cognitively organized (Osgood & Tannenbaum, 1955; Rosenberg, 1960a), but they also reflect the tendency for preferences to bias beliefs, as in wishful thinking phenomena (McGuire, 1960a). For some moderators such as attitude strength and knowledge, attitude–belief congruence probably reflects cognitive effects rather than substantial motivational distortion. For other situations (predicting an unknown outcome, receiving new information about a previously unknown danger), motivational explanations dominate. The total evidence for attitudes' effects on beliefs, however, offers particularly strong support that even when the effects reflect predominantly motivational processes (e.g., wishful thinking effects), the process is marked not by passive selection or storage of attitude-congruent information and overlooking of incongruent information (Eagly et al., 1999). Instead, when attitude–belief congruencies occur, they are the result of highly active cognitive processing involving actively refuting attitude-discrepant information in the process of reconstructing past beliefs (Ross & Conway, 1986) or forming beliefs about new information (Ditto & Lopez, 1992).

## CHANGING BELIEFS BY CHANGING THE CONTENT OR EXTREMITY OF ATTITUDES

### Cognitive Consistency, Information Processing, and Belief Change

Meta-analytic and experimental studies (Eagly et al., 1999; Eagly et al., 2000; Eagly et al., 2001; Hastie & Park, 1986) provide compelling evidence that the valence of information remembered from a persuasive message is often uncorrelated with the attitude that was formed. Given this demonstrated independence, one might infer that a change in attitude should not necessarily have an impact on relevant beliefs. Theoretical perspectives that address cognitive consistency processes and cognitive structural issues, however, make predictions that contradict this inference. Moreover, empirical evidence also contradicts this inference and indicates that there are reciprocal links between changes in attitudes, retrieval of beliefs, and strengthening of changed attitudes. After attitude change, for instance, individuals who are induced to recall past behaviors indicate beliefs about their past behavior that are biased by their new attitudes (Ross, McFarland, Conway, & Zanna, 1983). Furthermore, engaging in such recollections strengthens the persistence of the changed attitudes (Lydon, Zanna, & Ross, 1988).



Cognitive consistency theories assume that the reason a change in one's attitude leads to cognitive reorganization of related thoughts is to maintain psychological consistency. Direct, early evidence that change in one's attitudes can precede change in beliefs about the attitude object's attributes comes from approaches testing expectancy-value models of cognitive consistency (Rosenberg, 1960b) and models regarding the organization of thought systems. Two weeks after assessing participants' attitudes and cognitive structures (values and beliefs) for different social issues, Rosenberg (1960b) hypnotized participants and gave them a posthypnotic suggestion to change their evaluative responses (i.e., attitudes) on two of the social issues, one of low and one of high personal interest. Afterward, attitudes, values, and beliefs about whether an attitude object would achieve those values (instrumentality) were assessed. Attitudes were changed as expected, especially on the low interest item. Moreover, Rosenberg found that related beliefs changed—both the intensity of participants' values and their beliefs about instrumentality. For example, a woman under posthypnotic suggestion who was induced to feel much more positively about a city-manager plan changed her beliefs regarding whether it would lead to a more democratic system and promote equal rights (Rosenberg & Gardner, 1958). In contrast, control participants asked to role play different attitude responses on their high- and low-interest topics showed more exaggerated responses than hypnotized participants. For the manipulated topics, the control participants indicated more extreme changes on their attitudes and cognitions, but primarily changes in the values, not on instrumentality. More important, they also reported attitude change on nonmanipulated attitude objects. In contrast, changes in attitudes and beliefs occurred only on manipulated items for hypnotized participants (Rosenberg, 1960b). Thus, presumably the hypnotized participants' belief changes were due to the hypnosis-induced attitude change rather than being due to experimental demand. Although the experimental use of hypnosis is somewhat unusual and is invalid for studying memory (Lynn, Lock, Myers, & Payne, 1997), it has acceptable validity for creating cognitive and emotional states (e.g., Forgas, Bower, & Krantz, 1984; Kirsch & Lynn, 1999). Nevertheless, a methodological confound in the study raises other questions about the validity of the results. Namely, the experimental group was not equivalent to the control group; the former group was selected on the basis of being highly hypnotizable.

Most other expectancy-value models, most notably the theories of reasoned action and planned behavior (Ajzen, 1991; Ajzen & Fishbein, 1980), have exclusively conceptualized weighted beliefs as being causally prior to attitudes and, thus, have not included tests analogous to Rosenberg's. Nor do cognitive dissonance researchers test the causal direction of attitudes preceding belief change. Rather researchers typically use behavioral manipulations such as induced compliance combined with manipulations of beliefs (e.g., about negative consequences of their actions, Cooper & Fazio, 1984) and measure attitude change as a consequence (see Olson and Stone, this volume).

An early study by McGuire using triads of syllogism, however, did offer support for Rosenberg's finding (McGuire, 1960a). Some participants received a message that argued that one of the propositions was true. As a consequence, other related beliefs were changed, but less extensively than expected. Therefore, changes in beliefs as a function of changes in attitudes may occur somewhat imperfectly (McGuire & McGuire, 1991). The components of the thought system are apparently only loosely linked unless the issues are personally involving, in which case the thought system may be tightly articulated. According to this perspective, although changing attitudes should influence beliefs, there will be some cognitive inertia such that change in belief may be slow and delayed, and the extent of the change is not as extensive as logic implies (McGuire, 1960a).

Thus, approaches that focus on the structural analysis of attitudes and beliefs suggest that attitude change will lead to belief change. However, of particular concern, given that modern cognitive perspectives on attitudes and memory reveal a lack of congeniality effects in memory

for attitude-relevant information (Eagly et al., 2001; Hastie & Park, 1986), is whether current cognitive models of persuasion would similarly expect changes in beliefs as a function of attitude change. Albarracín (2002) has argued that most current information-processing models focus extensively on yielding processes (e.g., whether it results from cognitive responses or responses to simple message cues), and do not specify detailed predictions regarding the reception processes. As such, current dual process models do not provide a sufficient framework for organizing the myriad of findings relevant to these reception and retrieval processes (e.g., Chaiken et al., 1989; Petty & Cacioppo, 1986). In contrast, the cognition in persuasion model describes the sequential steps involved in the retrieval, selection, and use of information in cognitive processing of messages (Albarracín, 2002). Recent research testing these processes verifies that changes in attitudes can precede changes in beliefs under some circumstances (Albarracín & Wyer, 2001). The researchers presented strong or weak arguments about a moderately relevant topic after students received a positive or negative mood induction. Some participants read the persuasive message while receiving a moderate distraction. The distraction was weak enough that participants were responsive to argument strength—their beliefs about the likely consequences of such a policy were affected accordingly. The distraction was strong enough, however, that it disrupted participants' abilities to combine belief-based information in forming their attitudes. For these participants, a causal model in which attitudes preceded message-relevant beliefs was a better fit to the correlations than a model in which beliefs predicted attitudes (Albarracín & Wyer, 2001). Participants' beliefs were influenced by the strength of the message arguments as well as by the attitudes participants formed based on the affective cue from the mood manipulation. For participants who had sufficient ability to engage in more complete processing of the message (e.g., they did not receive a distraction, or they had extra processing time if they had a distraction), the correlations better supported a model in which beliefs predicted attitudes.

In summary, limited research testing cognitive consistency and structural perspectives on thought systems demonstrates that belief change can follow changes in attitudes. Moreover, more recent research focusing on the role of cognition in persuasion processes suggests that under some circumstances, belief change can follow rather than precede attitude change. All of these studies, however, involve an explicit attempt to directly change an individual's attitudes by presenting them with persuasive information. Another way in which attitudes have been shifted is through procedures that merely have individuals focus on their attitudes in some way—either introspecting on the attitude itself (e.g., Sadler & Tesser, 1973)—or with a metacognitive focus, introspecting on the reasons for holding their attitude (e.g., Wilson et al., 1984). These two areas of research, attitude polarization and thought introspection research, respectively, have very different consequences for beliefs, as we discuss in the following.

### Attitude Polarization

One implication of both structural accounts (Rosenberg et al., 1960) as well as motivational explanations (Lord et al., 1979) of attitudes' effects on beliefs is that greater activation of attitudes should lead to increased coherence in expressed beliefs congenial to one's attitudes. This notion is supported by research on thought-induced attitude polarization. In one study involving pairs of participants (Sadler & Tesser, 1973), participants were induced to form negative or positive attitudes of their fellow participant. Some participants were instructed to think about their partner; other participants were distracted from thinking. Afterward they wrote down their beliefs about their partner. Participants in the thought inducement condition had more extreme attitudes than control participants, they wrote more negative thoughts about dislikable partners than control participants, and they also wrote more positive thoughts about likable partners than control participants. Numerous other studies have supported the basic

processes that in some circumstances, having people think about their attitudes can lead to attitude extremity (Cialdini, 1976; Cialdini & Petty, 1981; Fitzpatrick & Eagly, 1981; Liberman & Chaiken, 1991; Tesser & Conlee, 1975; Tesser & Cowan, 1975; Tetlock, 1983a), with beliefs mediating this effect (Clary, Tesser, & Downing, 1978; Tesser, 1978; Tesser & Conlee, 1975; Tesser & Cowan, 1975).

### Thought Introspection

Recent research directly contradicts the general finding that increasing thought about one's attitudes leads to congruence in the existing attitude and one's generated beliefs during the introspection. Instead, research suggests that one consequence of thinking about the reasons one holds an attitude is that it can lead to beliefs that are disconnected from the original attitudes. This research mostly stems from studies in which individuals focus on the reasons for holding attitudes, specifically ones for which they have limited access to the correct foundation of their original preferences (e.g., Nisbett & Wilson, 1977b). For example, over the course of five sessions, Wilson and Kraft (1993) had dating couples repeatedly introspect on the reasons their relationships were going the way they were. Individuals' attitudes toward their relationship were changed by this manipulation, but there wasn't any common pattern of shift across the group. In contrast to Tesser's typical findings (Tesser, 1978), polarization of attitudes did not occur. This research reveals that attitudes can often be disconnected from related beliefs (e.g., Wilson et al., 1984). Wilson and his colleagues suggested that the reason for this disconnect is that people bring to mind reasons that are accessible and easy to verbalize (i.e., highly shareable; Freyd, 1983) but not necessarily in line with an individual's initial attitude. As a result of such thought, the attitudes that participants report will be different than if they had not engaged in such thought. Wilson's work (e.g., Wilson & Dunn, 1986; Wilson, Dunn, Kraft, & Lisle, 1989; Wilson & Kraft, 1993; Wilson, Kraft, & Dunn, 1989) suggests that reflecting on the reasons for holding one's attitude leads to (often transient) change in those attitudes, and as a result, a disconnect between attitude and behavior, as a result of inability to access the correct beliefs (or feelings) that are related to the formation of that attitude.

One question regarding the thought introspection studies is whether the manipulation leads individuals to form a different attitude than they would have otherwise (e.g., in cases where attitudes are being newly formed), whether an existing attitude is being changed by the manipulation, or whether a new attitude is created, without updating the old attitude. Although in the earliest studies, premanipulation attitudes were not measured (e.g., Wilson et al., 1984); later studies did so, verifying that participants' reported attitudes were shifting (Wilson & Kraft, 1993). Thus, early research suggested that actual attitude change was occurring. For example, an individual who enjoys a particular puzzle but introspects on the reasons would be viewed as changing her attitude as a result of the process. However, the reduced correlations that resulted from these attitudes and the actual behavior suggested that somehow the real reasons for taking pleasure in the behavior continued to direct behavior by some means (Wilson et al., 1984). This lowered attitude-behavior correlation directly contradicted the findings of attitude polarization research, in which similar experimental manipulations led to an increase in attitude-behavior consistency (Millar & Tesser, 1986a, 1989).

A resolution of the odd paradox that a changed attitude was not also reflected in behavior change is offered by the recent introduction of a dual attitudes system for explaining these results (Wilson, Lindsey, & Schooler, 2000). When one engages in metacognitive processing, introspecting about why one holds an attitude might not allow one to access the source of information that formed that attitude (e.g., verbalizable beliefs and unarticulatable experiential qualities). Alternatively, one might be unable to use this information. In either case, a new attitude may be created (Wilson et al., 2000) rather than the old one further polarized (Tesser,

1978). This dual attitudes system suggests, however, that older attitudes may be automatically evoked in some situations (and hence would guide behavior) unless an individual has the capability and motivation to reflect on their newer, explicit attitudes.

More important than what this research says about attitudes and beliefs is perhaps what it says about the link between attitudes and *metabeliefs*—beliefs about the original sources of one's attitude formation or lay theories about attitudinal processes. A more general demonstration of this phenomena occurs in affective forecasting (Gilbert & Ebert, 2002; Gilbert & Wilson, 2000). In affective forecasting, individuals estimate the extent or durability of the feelings that they will experience should they receive certain positive or negative outcomes in the future. In making such forecasts, people's use of their attitudes and current preferences lead them to make biased predictions. Thus, an individual will likely overestimate how long their joy will last if they win a lottery or how awful they will feel if they fail a test. Their beliefs reflect an exaggerated reliance on their current preferences for outcomes and indicate poor lay theories about the strength and stability of people's emotional responses to outcomes. People are not aware of the psychological processes by which desired outcomes, once received, might be less satisfactory than anticipated, or how less preferred outcomes may be less distressing than anticipated (e.g., Crawford, McConnell, Lewis, & Sherman, 2002).

In sum, a variety of studies that involve reflecting on current attitudes suggest that those attitudes can be an incorrect basis for formation of beliefs, whether they are beliefs about the foundation of one's current attitudes, or beliefs about one's affective responses to future, attitude-relevant outcomes. An individual may know what they currently feel, but using those attitudes to form beliefs may be faulty. For instance, one could be wrong about *why* one cares for a romantic partner (e.g., Wilson et al., 1984), and wrong about how *lasting* the angst will be should that relationship end (e.g., Gilbert & Ebert, 2002).

### Moderators for Changing Beliefs Through Attitude Change

At first reflection, lack of attitude congeniality effects in memory for persuasive messages and rather poor access to beliefs about why we hold certain attitudes seem at odds with research finding change in beliefs in response to message-induced attitude change or research on attitude polarization. Resolving these effects requires understanding the moderators of attitude–belief effects and moderators of the attitude–belief disconnection.

According to cognitive consistency approaches, consistency pressures will only be apparent when an individual's needs or expectations cause them to focus on their attitudes (Abelson & Rosenberg, 1958). McGuire's thought system research similarly suggests that not all changes in attitudes will result in belief changes (McGuire & McGuire, 1991). Rather, events that are highly desirable and personally involving are expected to have stronger links between cognitive elements. Both analyses suggest that changes in attitudes that are not of particular importance to an individual's needs or desires may result in relatively little change in beliefs. However, if individuals are exposed to persuasive arguments of importance to them, other research suggests that change in their beliefs is more likely to *precede* attitude change unless their cognitive resources are low (Albarracín & Wyer, 2001). Regardless of the situations, cognitive approaches to persuasion clarify why congeniality effects in memory are not common (Eagly et al., 2001)—because information is actively transformed in the process of forming attitude. Thus, it is the *belief* about information that is presented that will commonly be congenial with related attitudes, not the untransformed information presented in a message.

Several moderators of attitude polarization effects have also been identified. Attitude polarization is more likely to occur in ambiguous situations (Tesser & Cowan, 1975). Moreover, polarization occurs more commonly for issues about which one has extensive knowledge (Tesser & Leone, 1977), and issues for which one has high evaluative-cognitive consistency

(Chaiken & Yates, 1985). In addition, attitude depolarization would be more likely to occur in situations that induce an individual to generate attitude-inconsistent cognitive responses (e.g., Killeya & Johnson, 1998). Such a situation might occur when one is exposed to an accountability manipulation in which one anticipates discussing an issue with someone with different views (Tetlock, 1983a). These findings suggest that the situations in which increased accessibility to attitudes (via thought) will lead to attitude-consistent beliefs are those in which the content of one's attitudes makes congruence more readily possible and when the thought focus is open-ended rather than directed into specific directions.

More generally, resolving the issue of when introspection will lead to more insight into the beliefs that are relevant to one's attitudes (Tesser, 1978) versus reduced insight (Wilson et al., 1984) is a particular challenge. Several moderators of the attitude-belief disconnect, however, offer clues. Analyzing reasons will modify attitudes (i.e., lead to a disconnect) mostly when one is less knowledgeable about a topic (Wilson, Kraft et al., 1989). Moreover, when task demands require focus on one's attitudes, one may need time to show a change in attitudes as a result of reflecting on beliefs about that attitude (Wilson et al., 2000). When individuals experience time pressure during this process, they may revert to their old attitude. In addition, Hodges and Wilson (1993) found that people with less accessible attitudes changed their attitudes more than people who had highly accessible attitudes (as assessed by response time).

Attitude-belief disconnect is most likely to occur when real reasons are poorly defined and difficult to articulate (Wilson & Schooler, 1991). Millar and Tesser (1986a; 1989), for instance, demonstrated that focusing on an ill-fitting dimension of one's attitudes (*reasons* or cognitive aspects of a puzzle task) led to a poor attitude-behavior correlation (e.g., when one's playing with puzzles was an expression of affective dimensions: enjoyment). For the most part, the laboratory creates unique constraints in task and dimensions of focus that may be less common in the real world. Within the laboratory context, one can make individuals think analytically about tasks for which they might otherwise trust intuition (their romantic partner) or they would not bother analyzing (puzzles). Thus, it seems likely that inadvertently focusing on the wrong dimensions of one's attitude will occur much less often for attitudes in naturally occurring settings that are important enough for one to bother reflecting about. For example, Kmett and colleagues (Kmett, Arkes, & Jones, 1999) used an issue of considerably more importance—choosing a college—than typical topics studied by Wilson (e.g., selecting jams, posters, or reregistering for a course for the next term). High school seniors analyzed reasons in advance of attending college; thus, they had existing attitudes that they then analyzed. In all groups, analysis led to greater satisfaction with college—regardless of whether recall was accurate or not at follow-up. Therefore, introspecting about real reasons is helpful during attitude formation (Kmett et al., 1999), but introspecting about pseudo-reasons for existing attitudes is unhelpful.

The implication of this account for persistence and change is that attitudes and beliefs may overtly seem quite transient, affected by the current context and hindered by our inability to access or use veridical sources of our attitude formation. However, in most recent accounts (Wilson et al., 2000), researchers suggest that those original attitudes and beliefs might persist. Moreover, an unresolved question is just how pervasive the tendency to engage in meta-cognitive processes regarding the affective bases of one's attitudes is. Accessing one's attitude should frequently result in access to beliefs. This process will commonly occur automatically through spreading activation for highly accessible attitudes, or more effortfully, when an individual actively retrieves his or her attitude. Thus, accessing attitudes is likely to be relatively spontaneous. In contrast, however, the tendency to engage in thoughts *about* one's attitudes is not likely to be very spontaneous. One might not spontaneously think about the reasons for holding one's current attitudes, and one might not spontaneously think about how one's current attitudes will influence one's feelings about future outcomes. For example, individuals

do not necessarily spontaneously anticipate how much regret they would feel regarding lost opportunities or incorrect choices in the future (Crawford et al., 2002).

A broader perspective (i.e., taking into account decision-making theory and research) suggests boundary conditions to the findings of Wilson and colleagues (e.g., Wilson, Dunn, et al., 1989). For instance, cognitive neuroscience research seems to suggest that individuals' reasoned choices involve veridical assessment of their evaluative responses to phenomena for individuals with intact cognitive systems (Damasio, 1994). Although contrived situations that force individuals to verbally articulate intuitive and implicit reactions to stimuli may create disconnection between attitude, belief, and behavior, research on decision making (Wagar & Thagard, 2004), attempts to self-regulate impulses (Mischel, Cantor, & Feldman, 1996), and risk assessment (Loewenstein, Weber, Hsee, & Welch, 2001) suggest that individuals have access to their evaluative responses (albeit distorted) and attempt to regulate their actions accordingly. That is, approaches that focus on getting individuals to control their behavior in the face of attractive but potentially harmful stimuli (e.g., in a risky sexual situation), convincingly postulate that people have direct access to their reactions to stimuli that are present (e.g., sexual interest). Not all such reactions, however, are well verbalized. For instance, individuals' intuitive assessments of the future, based somatically on their experiences in the present (how well or how poorly they are feeling about something) may be intuitive and not well articulated. Thus, making good choices about the future, such as which deck of cards to choose from, in an experiment that has some decks with bad but nonobvious payoffs, may be based on awareness of emotional reactions that is not yet articulated in verbal beliefs (Bechara, Damasio, Tranel, & Damasio, 1997). Individuals may naively and correctly assess their evaluative reactions to events and, thus, correctly form beliefs about them, and yet not be well able to articulate that *somatically marked* (Damasio, 1994) information in typical experimental procedures.

## CONCLUSIONS

This chapter addressed aspects of attitude-related processes that have traditionally received less systematic examination. Most attitudinal models focus on a causal direction of beliefs preceding attitudes rather than the opposite. One consequence of most attitude research traditions is that they may have unduly restricted thought regarding the causal direction of these links. Relevant research on these less-studied causal directions, however, reveals rich consequences of attitudes for beliefs and suggests some promising areas of future study that have been relatively neglected. Evidence that attitudes influence beliefs has grown dramatically since Hastorf and Cantril (1954) first examined how Princeton and Dartmouth fans "saw a game." Current evidence extends from reconstructions of the past and projections onto the present as well as wishful interpretations of the future, extending across topics that involve personal self-interest to those that have political impact. With the continued development of cognitive processing principles comes an articulation of *why* we "see the game" differently: Attitudes bias the retrieval and formation of beliefs both because of cognitive processes (more accessible attitude-congruent knowledge) as well as motivated distortions (e.g., to protect the self). In addition, considerable understanding of some of the moderators of these effects has been gained, most notably attitude accessibility and attitude importance. The most intriguing and recent wrinkle in these findings is the development of research that splits with previous findings (Sadler & Tesser, 1973; Tesser, 1976) of how thinking about one's attitude leads to attitude polarization, and more important, attitude-belief coherence. This newest research harkens back to the classic finding nearly 30 years ago that we do not always know why we form certain preferences (Nisbett & Wilson, 1977b). Out of this understanding that there can often be a disconnect between ill-formed or affectively formed attitudes and our beliefs about why we hold those attitudes

(Wilson, Kraft et al., 1989; Wilson, Lisle, Schooler, & Hodges, 1993), is the implication that our metacognitions regarding the origins of our attitudes (and indeed, our guesses about our future attitudinal reactions; Crawford et al., 2002; Gilbert & Ebert, 2002) are often flawed. Resolving these disparate understandings of the attitude–belief congruence versus attitude–belief disconnect is tentatively offered here, but is clearly something that encourages further study.

## REFERENCES

- Abelson, R. P. (1986). Beliefs are like possessions. *Journal for the Theory of Social Behaviour*, *16*, 223–250.
- Abelson, R. P., Aronson, E., McGuire, W. J., Newcomb, T. M., Rosenberg, M. J., & Tannenbaum, P. H. (Eds.). (1968). *Theories of cognitive consistency: A sourcebook*. Chicago: Rand McNally.
- Abelson, R. P., & Rosenberg, M. J. (1958). Symbolic psycho-logic: A model of attitudinal cognition. *Behavioral Science*, *3*, 1–13.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*, 179–211.
- Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- Albarracín, D. (2002). Cognition in persuasion: An analysis of information processing in response to persuasive communications. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 34, pp. 61–130). San Diego, CA: Academic Press.
- Albarracín, D., & Wyer, R. S., Jr. (2001). Elaborative and nonelaborative processing of a behavior-related communication. *Personality and Social Psychology Bulletin*, *27*, 691–705.
- Allison, S. T., Beggan, J. K., Midgley, E. H., & Wallace, K. A. (1995). Dispositional and behavioral inferences about inherently democratic and unanimous groups. *Social Cognition*, *13*, 105–126.
- Babad, E. (1987). Wishful thinking and objectivity among sports fans. *Social Behaviour*, *2*, 231–240.
- Babad, E. (1997). Wishful thinking among voters: Motivational and cognitive influences. *International Journal of Public Opinion Research*, *9*, 105–125.
- Babad, E., Hills, M., & O'Driscoll, M. (1992). Factors influencing wishful thinking and predictions of election outcomes. *Basic and Applied Social Psychology*, *13*, 461–476.
- Babad, E., & Katz, Y. (1991). Wishful thinking—against all odds. *Journal of Applied Social Psychology*, *21*, 1921–1938.
- Babad, E., & Jacobos, E. (1993). Wish and reality in voters' predictions of election outcomes. *Political Psychology*, *14*, 37–54.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Bechara, A., Damasio, H., Tranel, D., & Damasio, A. R. (1997). Deciding advantageously before knowing the advantageous strategy. *Science*, *275*, 1293–1294.
- Boninger, D. S., Krosnick, J. A., & Berent, M. K. (1995). Origins of attitude importance: Self-interest, social identification, and value relevance. *Journal of Personality and Social Psychology*, *68*, 61–80.
- Bothwell, R. K., & Brigham, J. C. (1983). Selective evaluation and recall during the 1980 Reagan–Carter debate. *Journal of Applied Social Psychology*, *13*, 427–442.
- Bradley, G. W. (1978). Self-serving biases in the attribution process: A reexamination of the fact or fiction question. *Journal of Personality and Social Psychology*, *36*, 56–71.
- Breckler, S. J. (1984). Empirical validation of affect, behavior, and cognition as distinct components of attitude. *Journal of Personality and Social Psychology*, *47*, 1191–1205.
- Cantril, H. (1938). The prediction of social events. *Journal of Abnormal and Social Psychology*, *33*, 364–389.
- Chaiken, S., & Baldwin, M. W. (1981). Affective-cognitive consistency and the effect of salient behavioral information on the self-perception of attitudes. *Journal of Personality and Social Psychology*, *41*, 1–12.
- Chaiken, S., Liberman, A., & Eagly, A. H. (1989). Heuristic and systematic information processing within and beyond the persuasion context. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 212–252). New York: Guilford.
- Chaiken, S., & Yates, S. (1985). Affective-cognitive consistency and thought-induced attitude polarization. *Journal of Personality and Social Psychology*, *49*, 1470–1481.
- Chen, S., & Chaiken, S. (1999). The heuristic-systematic model in its broader context. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 73–96). New York: Guilford.
- Cialdini, R. B. (1976). Elastic shifts of opinion: Determinants of direction and durability. *Journal of Personality and Social Psychology*, *34*, 663–672.

- Cialdini, R. B., & Petty, R. E. (1981). Anticipatory opinion shifts. In R. E. Petty, T. M. Ostrom, & T. C. Brock (Eds.), *Cognitive responses in persuasion* (pp. 217–235). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Clary, E. G., Tesser, A., & Downing, L. L. (1978). Influence of a salient schema on thought-induced cognitive change. *Personality and Social Psychology Bulletin*, 4, 39–43.
- Converse, P. E. (1964). The nature of belief systems in mass publics. In D. E. Apter (Ed.), *Ideology and discontent* (pp. 206–261). New York: Free Press.
- Cooper, J., & Fazio, R. H. (1984). A new look at dissonance theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 17, pp. 229–266). San Diego, CA: Academic Press.
- Correll, J., Spencer, S. J., & Zanna, M. P. (2004). An affirmed self and an open mind: Self-affirmation and sensitivity to argument strength. *Journal of Experimental Social Psychology*, 40, 350–356.
- Crano, W. D. (1983). Assumed consensus of attitudes: The effects of vested interest. *Personality and Social Psychology Bulletin*, 9, 597–608.
- Crawford, M. T., McConnell, A. R., Lewis, A. C., & Sherman, S. J. (2002). Reactance, compliance, and anticipated regret. *Journal of Experimental Social Psychology*, 38, 56–63.
- Damasio, A. R. (1994). *Descartes' error: Emotion, reason, and the human brain*. New York: Putnam.
- Dillehay, R. C., Insko, C. A., & Smith, M. B. (1966). Logical consistency and attitude change. *Journal of Personality and Social Psychology*, 3, 646–654.
- Ditto, P. H., & Lopez, D. F. (1992). Motivated skepticism: Use of differential decision criteria for preferred and nonpreferred conclusions. *Journal of Personality and Social Psychology*, 63, 568–584.
- Dolan, K. A., & Holbrook, T. M. (2001). Knowing versus caring: The role of affect and cognition in political perceptions. *Political Psychology*, 22, 27–44.
- Eagly, A. H., Chen, S., Chaiken, S., & Shaw-Barnes, K. (1999). The impact of attitudes on memory: An affair to remember. *Psychological Bulletin*, 125, 64–89.
- Eagly, A. H., Kulesa, P., Brannon, L. A., Shaw, K., & Hutson-Comeaux, S. (2000). Why counterattitudinal messages are as memorable as proattitudinal messages: The importance of active defense against attack. *Personality and Social Psychology Bulletin*, 26, 1392–1408.
- Eagly, A. H., Kulesa, P., Chen, S., & Chaiken, S. (2001). Do attitudes affect memory? Tests of the congeniality hypothesis. *Current Directions in Psychological Science*, 10, 5–9.
- Fazio, R. H. (1990a). How do attitudes guide behavior? In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (pp. 204–243). New York: Guilford.
- Fazio, R. H. (1990b). Multiple processes by which attitudes guide behavior: The MODE model as an integrative framework. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 23, pp. 75–109). San Diego, CA: Academic Press.
- Fazio, R. H., Chen, J., 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., & Towles-Schwen, T. (1999). The MODE model of attitude–behavior processes. In S. Chaiken & Y. Trope (Eds.), *Dual process theories in social psychology* (pp. 97–116). New York: Guilford.
- 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.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.
- Fitzpatrick, A. R., & Eagly, A. H. (1981). Anticipatory belief polarization as a function of the expertise of a discussion partner. *Personality and Social Psychology Bulletin*, 7, 636–642.
- Forgas, J. P., Bower, G. H., & Krantz, S. E. (1984). The influence of mood on perceptions of social interactions. *Journal of Experimental Social Psychology*, 20, 497–513.
- Frey, D. (1986). Recent research on selective exposure to information. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 19, pp. 41–80). San Diego, CA: Academic Press.
- Freyd, J. J. (1983). Shareability: The social psychology of epistemology. *Cognitive Science*, 7, 191–210.
- Gilbert, D. T., & Ebert, J. E. J. (2002). Decisions and revisions: The affective forecasting of changeable outcomes. *Journal of Personality and Social Psychology*, 82, 503–514.
- Gilbert, D. T., & Wilson, T. D. (2000). Miswanting: Some problems in the forecasting of future affective states. In J. P. Forgas (Ed.), *Feeling and thinking: The role of affect in social cognition* (pp. 178–197). New York: Cambridge University Press.
- Giner-Sorolla, R., & Chaiken, S. (1997). Selective use of heuristic and systematic processing under defense motivation. *Personality and Social Psychology Bulletin*, 23, 84–97.
- Granberg, D., & Brent, E. E. (1980). Perceptions of issue positions of presidential candidates. *American Scientist*, 68, 617–646.
- Granberg, D., & Brent, E. E. (1983). When prophecy bends: The preference–expectation link in U.S. presidential elections, 1952–1980. *Journal of Personality and Social Psychology*, 45, 477–491.



- Granberg, D., & Holmberg, S. (1986). Prior behavior, recalled behavior, and the prediction of subsequent voting behavior in Sweden and the U.S. *Human Relations, 39*, 135–148.
- Greenwald, A. G. (1980). The totalitarian ego: Fabrication and revision of personal history. *American Psychologist, 35*, 603–618.
- Hastie, R., & Park, B. (1986). The relationship between memory and judgment depends on whether the judgment task is memory-based or on-line. *Psychological Review, 93*, 258–268.
- Hastorf, A. H., & Cantril, H. (1954). They saw a game; a case study. *Journal of Abnormal and Social Psychology, 49*, 129–134.
- Heider, F. (1958). *The psychology of interpersonal relations*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Hoch, S. J. (1987). Perceived consensus and predictive accuracy: The pros and cons of projection. *Journal of Personality and Social Psychology, 53*, 221–234.
- Hodges, S. D., & Wilson, T. D. (1993). Effects of analyzing reasons on attitude change: The moderating role of attitude accessibility. *Social Cognition, 11*, 353–366.
- Houston, D. A., & Fazio, R. H. (1989). Biased processing as a function of attitude accessibility: Making objective judgments subjectively. *Social Cognition, 7*, 51–66.
- Johnson, B. T., & Eagly, A. H. (1989). Effects of involvement on persuasion: A meta-analysis. *Psychological Bulletin, 106*, 290–314.
- Johnson, B. T., Lin, H. Y., Symons, C. S., & Campbell, L. A. (1995). Initial beliefs and attitudinal latitudes as factors in persuasion. *Personality and Social Psychology Bulletin, 21*, 502–511.
- Johnson, B. T., Smith-McLallen, A., Killeya, L. A., & Levin, K. D. (2004). Truth or consequences: Overcoming resistance to persuasion with positive thinking. In E. S. Knowles & J. Linn (Eds.), *Resistance and persuasion*. (pp. 215–233). Mahwah, NJ: Lawrence Erlbaum Associates.
- Killeya, L. A., & Johnson, B. T. (1998). Experimental induction of biased systematic processing: The directed-thought technique. *Personality and Social Psychology Bulletin, 24*, 17–33.
- Kirsch, I., & Lynn, S. J. (1999). Automaticity in clinical psychology. *American Psychologist, 54*, 504–515.
- Kmetz, C. M., Arkes, H. R., & Jones, S. K. (1999). The influence of decision aids on high school students' satisfaction with their college choice decision. *Personality and Social Psychology Bulletin, 25*, 1293–1301.
- Kozlowski, S. W., & Kirsch, M. P. (1987). The systematic distortion hypothesis, halo, and accuracy: An individual-level analysis. *Journal of Applied Psychology, 72*, 252–261.
- Krosnick, J. A. (1990a). Americans' perceptions of presidential candidates: A test of the projection hypothesis. *Journal of Social Issues, 46*, 159–182.
- Krosnick, J. A. (1990b). Government policy and citizen passion: A study of issue publics in contemporary America. *Political Behavior, 12*, 59–92.
- Kruglanski, A. W. (1989). *Lay epistemics and human knowledge: Cognitive and motivational bases*. New York: Plenum.
- Kruglanski, A. W. (1990). Lay epistemic theory in social-cognitive psychology. *Psychological Inquiry, 1*, 181–197.
- Kruglanski, A. W., Thompson, E. P., & Spiegel, S. (1999). Separate or equal? Bimodal notions of persuasion and a single-process "unimodel." In S. Chaiken & Y. Trope (Eds.), *Dual process theories in social psychology* (pp. 293–313). New York: Guilford.
- Kunda, Z. (1990). The case for motivated reasoning. *Psychological Bulletin, 108*, 480–498.
- Lance, C. E., LaPointe, J. A., & Stewart, A. M. (1994). A test of the context dependency of three causal models of halo rater error. *Journal of Applied Psychology, 79*, 332–340.
- 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.
- Lavine, H., Sullivan, J. L., Borgida, E., & Thomsen, C. J. (1996). The relationship of national and personal issue salience to attitude accessibility of foreign and domestic policy issues. *Political Psychology, 17*, 293–316.
- Lewis-Beck, M. S., & Skalaban, A. (1989). Citizen forecasting: Can voters see into the future? *British Journal of Political Science, 19*, 146–153.
- Liberman, A., & Chaiken, S. (1991). Value conflict and thought-induced attitude change. *Journal of Experimental Social Psychology, 27*, 203–216.
- Liberman, A., & Chaiken, S. (1992). Defensive processing of personally relevant health messages. *Personality and Social Psychology Bulletin, 18*, 669–679.
- Loewenstein, G. F., Weber, E. U., Hsee, C. K., & Welch, N. (2001). Risk as feelings. *Psychological Bulletin, 127*, 267–286.
- Lord, C. G., Ross, L., & Lepper, M. R. (1979). Biased assimilation and attitude polarization: The effects of prior theories on subsequently considered evidence. *Journal of Personality and Social Psychology, 37*, 2098–2109.
- Lott, A. J., Lott, B. E., Reed, T., & Crow, T. (1970). Personality-trait descriptions of differentially liked persons. *Journal of Personality and Social Psychology, 16*, 284–290.

- Lydon, J., Zanna, M. P., & Ross, M. (1988). Bolstering attitudes by autobiographical recall: Attitude persistence and selective recall. *Personality and Social Psychology Bulletin*, *14*, 78–86.
- Lynn, S. J., Lock, T. G., Myers, B., & Payne, D. G. (1997). Recalling the unrecallable: Should hypnosis be used to recover memories in psychotherapy? *Current Directions in Psychological Science*, *6*, 79–83.
- Mackie, D. M., Ahn, M. N., Asuncion, A. G., & Allison, S. T. (2001). The impact of perceiver attitudes on outcome-biased dispositional inferences. *Social Cognition*, *19*, 71–93.
- Mackie, D. M., & Asuncion, A. G. (1990). On-line and memory-based modification of attitudes: Determinants of message recall–attitude change correspondence. *Journal of Personality and Social Psychology*, *59*, 5–16.
- Markman, K. D., & Hirt, E. R. (2002). Social prediction and the “allegiance bias.” *Social Cognition*, *20*, 58–86.
- McGregor, D. (1938). The major determinants of the prediction of social events. *Journal of Abnormal and Social Psychology*, *33*, 179–204.
- McGuire, W. J. (1960a). Cognitive consistency and attitude change. *Journal of Abnormal and Social Psychology*, *60*, 345–353.
- McGuire, W. J. (1960b). Direct and indirect persuasive effects of dissonance-producing messages. *Journal of Abnormal and Social Psychology*, *60*, 354–358.
- McGuire, W. J. (1960c). A syllogistic analysis of cognitive relationships. In M. J. Rosenberg, C. I. Hovland, W. J. McGuire, R. P. Abelson, & J. W. Brehm (Eds.), *Attitude organization and change: An analysis of consistency among attitude components* (pp. 65–111). New Haven, CT: Yale University Press.
- McGuire, W. J. (1968). Personality and attitude change: An information-processing theory. In A. G. Greenwald, T. C. Brock, & T. M. Ostrom (Eds.), *Psychological foundations of attitudes* (pp. 171–196). San Diego, CA: Academic Press.
- McGuire, W. J. (1981). The probabilistic model of cognitive structure and attitude change. In R. E. Petty, T. M. Ostrom, & T. C. Brock (Eds.), *Cognitive responses in persuasion* (pp. 291–307). Hillsdale, NJ: Lawrence Erlbaum Associates.
- McGuire, W. J., & McGuire, C. V. (1991). The content, structure, and operation of thought systems. In R. S. Wyer, Jr. & T. K. Srull (Eds.), *Advances in social cognition* (Vol. 4, pp. 1–78). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Millar, M. G., & Tesser, A. (1986a). Effects of affective and cognitive focus on the attitude–behavior relation. *Journal of Personality and Social Psychology*, *51*, 270–276.
- Millar, M. G., & Tesser, A. (1986b). Thought-induced attitude change: The effects of schema structure and commitment. *Journal of Personality and Social Psychology*, *51*, 259–269.
- Millar, M. G., & Tesser, A. (1989). The effects of affective-cognitive consistency and thought on the attitude–behavior relation. *Journal of Experimental Social Psychology*, *25*, 189–202.
- Mischel, W., Cantor, N., & Feldman, S. (1996). Principles of self-regulation: The nature of willpower and self-control. In E. T. Higgins (Ed.), *Social psychology: Handbook of basic principles* (pp. 329–360). New York: Guilford.
- Murphy, K. R., Jako, R. A., & Anhalt, R. L. (1993). Nature and consequences of halo error: A critical analysis. *Journal of Applied Psychology*, *78*, 218–225.
- Nasco, S. A., & Marsh, K. L. (1999). Gaining control through counterfactual thinking. *Personality and Social Psychology Bulletin*, *25*, 556–568.
- Nisbett, R. E., & Wilson, T. D. (1977a). The halo effect: Evidence for unconscious alteration of judgments. *Journal of Personality and Social Psychology*, *35*, 250–256.
- Nisbett, R. E., & Wilson, T. D. (1977b). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, *84*, 231–259.
- Osgood, C. E., & Tannenbaum, P. H. (1955). The principle of congruity in the prediction of attitude change. *Psychological Review*, *62*, 42–55.
- Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 19, pp. 123–205). New York: Academic Press.
- Petty, R. E., Cacioppo, J. T., & Haugtvedt, C. P. (1992). Ego-involvement and persuasion: An appreciative look at the Sherifs’ contribution to the study of self-relevance and attitude change. In D. Granberg & G. Sarup (Eds.), *Social judgment and intergroup relations: Essays in honor of Muzafer Sherif* (pp. 147–174). New York: Springer-Verlag.
- Petty, R. E., Harkins, S. G., & Williams, K. D. (1980). The effects of group diffusion of cognitive effort on attitudes: An information-processing view. *Journal of Personality and Social Psychology*, *38*, 81–92.
- Petty, R. E., & Krosnick, J. A. (1995). Attitude strength: An overview. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 1–24). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Petty, R. E., & Wegener, D. T. (1999). The elaboration likelihood model: Current status and controversies. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 37–72). New York: Guilford.
- Pomerantz, E. M., Chaiken, S., & Tordesillas, R. S. (1995). Attitude strength and resistance processes. *Journal of Personality and Social Psychology*, *69*, 408–419.
- Pratkanis, A. R. (1988). The attitude heuristic and selective fact identification. *British Journal of Social Psychology*, *27*, 257–263.

- Pratkanis, A. R. (1989). The cognitive representation of attitudes. In A. R. Pratkanis (Ed.), *Attitude structure and function* (pp. 71–98). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Pratkanis, A. R., & Greenwald, A. G. (1989). A sociocognitive model of attitude structure and function. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 22, pp. 245–285). San Diego, CA: Academic Press.
- Proshansky, H. M. (1943). A projective method for the study of attitudes. *Journal of Abnormal and Social Psychology*, 38, 393–395.
- Rosenberg, M. J. (1956). Cognitive structure and attitudinal affect. *Journal of Abnormal and Social Psychology*, 53, 367–372.
- Rosenberg, M. J. (1960a). An analysis of affective-cognitive consistency. In M. J. Rosenberg, C. I. Hovland, W. J. McGuire, R. P. Abelson, & J. W. Brehm (Eds.), *Attitude organization and change: An analysis of consistency among attitude components* (pp. 15–64). New Haven, CT: Yale University Press.
- Rosenberg, M. J. (1960b). Cognitive reorganization in response to the hypnotic reversal of attitudinal affect. *Journal of Personality*, 28, 39–63.
- Rosenberg, M. J., & Gardner, C. W. (1958). Some dynamic aspects of posthypnotic compliance. *Journal of Abnormal and Social Psychology*, 57, 351–366.
- Rosenberg, M. J., Hovland, C. I., McGuire, W. J., Abelson, R. P., & Brehm, J. W. (Eds.). (1960). *Attitude organization and change: An analysis of consistency among attitude components*. New Haven, CT: Yale University Press.
- Ross, M. (1989). Relation of implicit theories to the construction of personal histories. *Psychological Review*, 96, 341–357.
- Ross, M., & Conway, M. (1986). Remembering one's own past: The reconstruction of personal histories. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition: Foundations of social behavior* (pp. 122–144). New York: Guilford.
- Ross, M., McFarland, C., Conway, M., & Zanna, M. P. (1983). Reciprocal relation between attitudes and behavior recall: Committing people to newly formed attitudes. *Journal of Personality and Social Psychology*, 45, 257–267.
- Sadler, O., & Tesser, A. (1973). Some effects of salience and time upon interpersonal hostility and attraction during social isolation. *Sociometry*, 36, 99–112.
- Sanbonmatsu, D. M., & Fazio, R. H. (1990). The role of attitudes in memory-based decision making. *Journal of Personality and Social Psychology*, 59, 614–622.
- Schuette, R. A., & Fazio, R. H. (1995). Attitude accessibility and motivation as determinants of biased processing: A test of the MODE model. *Personality and Social Psychology Bulletin*, 21, 704–710.
- Shaffer, S. D. (1981). Balance theory and political cognitions. *American Politics Quarterly*, 9, 291–320.
- Shepperd, J. A., Findley-Klein, C., Kwaynick, K. D., Walker, D., & Perez, S. (2000). Bracing for loss. *Journal of Personality and Social Psychology*, 78, 620–634.
- Sherif, C. W., Sherif, M., & Nebergall, R. E. (1965). *Attitude and attitude change: The social judgment-involvement approach*. Philadelphia: Saunders.
- Sherman, S. J. (1987). Cognitive processes in the formation, change, and expression of attitudes. In M. P. Zanna (Ed.), *Social influence: The Ontario Symposium Vol. 5* (pp. 75–106). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Sherman, S. J., Presson, C. C., & Chassin, L. (1984). Mechanisms underlying the false consensus effect: The special role of threats to the self. *Personality and Social Psychology Bulletin*, 10, 127–138.
- Singer, J. E. (1980). Social comparison: The process of self-evaluation. In L. Festinger (Ed.), *Retrospections on social psychology* (pp. 158–179). New York: Oxford University Press.
- Snyder, M., & Swann, W. B., Jr. (1978). Hypothesis-testing processes in social interaction. *Journal of Personality and Social Psychology*, 35, 1202–1212.
- Solomonson, A. L., & Lance, C. E. (1997). Examination of the relationship between true halo and halo error in performance ratings. *Journal of Applied Psychology*, 82, 665–674.
- Sweeney, P. D., & Gruber, K. L. (1984). Selective exposure: Voter information preferences and the Watergate affair. *Journal of Personality and Social Psychology*, 46, 1208–1221.
- Tesser, A. (1976). Attitude polarization as a function of thought and reality constraints. *Journal of Research in Personality*, 10, 183–194.
- Tesser, A. (1978). Self-generated attitude change. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 11, pp. 289–338). New York: Academic Press.
- Tesser, A., & Conlee, M. C. (1975). Some effects of time and thought on attitude polarization. *Journal of Personality and Social Psychology*, 31, 262–270.
- Tesser, A., & Cowan, C. L. (1975). Thought and number of cognitions as determinants of attitude change. *Social Behavior and Personality*, 3, 165–173.
- Tesser, A., & Leone, C. (1977). Cognitive schemas and thought as determinants of attitude change. *Journal of Experimental Social Psychology*, 13, 340–356.
- Tetlock, P. E. (1983a). Accountability and complexity of thought. *Journal of Personality and Social Psychology*, 45, 74–83.

- Tetlock, P. E. (1983b). Cognitive style and political ideology. *Journal of Personality and Social Psychology*, *45*, 118–126.
- Tetlock, P. E. (1986). A value pluralism model of ideological reasoning. *Journal of Personality and Social Psychology*, *50*, 819–827.
- Tetlock, P. E., Armor, D., & Peterson, R. S. (1994). The slavery debate in antebellum America: Cognitive style, value conflict, and the limits of compromise. *Journal of Personality and Social Psychology*, *66*, 115–126.
- Tetlock, P. E., & Boettger, R. (1989). Accountability: A social magnifier of the dilution effect. *Journal of Personality and Social Psychology*, *57*, 388–398.
- Tetlock, P. E., Peterson, R. S., & Lerner, J. S. (1996). Revising the value pluralism model: Incorporating social content and context postulates. In C. Seligman, J. M. Olson, & M. P. Zanna (Eds.), *The psychology of values: The Ontario Symposium Vol. 8* (pp. 25–51). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Thomsen, C. J., Borgida, E., & Lavine, H. (1995). The causes and consequences of personal involvement. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 191–214). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Vallone, R. P., Ross, L., & Lepper, M. R. (1985). The hostile media phenomenon: Biased perception and perceptions of media bias in coverage of the Beirut massacre. *Journal of Personality and Social Psychology*, *49*, 577–585.
- Visser, P. S., Krosnick, J. A., & Simmons, J. P. (2003). Distinguishing the cognitive and behavioral consequences of attitude and certainty: A new approach to testing the common-factor hypothesis. *Journal of Experimental Social Psychology*, *39*, 118–141.
- Wagar, B. M., & Thagard, P. (2004). Spiking Phineas Gage: A neurocomputational theory of cognitive-affective integration in decision-making. *Psychological Review*, *111*, 67–79.
- Wegener, D. T., & Petty, R. E. (1997). The flexible correction model: The role of naive theories of bias in bias correction. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 29, pp. 141–208). San Diego, CA: Academic Press.
- Wilson, T. D., & Dunn, D. S. (1986). Effects of introspection on attitude–behavior consistency: Analyzing reasons versus focusing on feelings. *Journal of Experimental Social Psychology*, *22*, 249–263.
- Wilson, T. D., Dunn, D. S., Bybee, J. A., Hyman, D. B., & Rotondo, J. A. (1984). Effects of analyzing reasons on attitude–behavior consistency. *Journal of Personality and Social Psychology*, *47*, 5–16.
- Wilson, T. D., Dunn, D. S., Kraft, D., & Lisle, D. J. (1989). Introspection, attitude change, and attitude–behavior consistency: The disruptive effects of explaining why we feel the way we do. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 22, pp. 287–343). San Diego, CA: Academic Press.
- Wilson, T. D., & Kraft, D. (1993). Why do I love thee?: Effects of repeated introspections about a dating relationship on attitudes toward the relationship. *Personality and Social Psychology Bulletin*, *19*, 409–418.
- Wilson, T. D., Kraft, D., & Dunn, D. S. (1989). The disruptive effects of explaining attitudes: The moderating effect of knowledge about the attitude object. *Journal of Experimental Social Psychology*, *25*, 379–400.
- Wilson, T. D., Lindsey, S., & Schooler, T. Y. (2000). A model of dual attitudes. *Psychological Review*, *107*, 101–126.
- Wilson, T. D., Lisle, D. J., Schooler, J. W., & Hodges, S. D. (1993). Introspecting about reasons can reduce post-choice satisfaction. *Personality and Social Psychology Bulletin*, *19*, 331–339.
- Wilson, T. D., & Schooler, J. W. (1991). Thinking too much: Introspection can reduce the quality of preferences and decisions. *Journal of Personality and Social Psychology*, *60*, 181–192.
- Wood, W. (1982). Retrieval of attitude-relevant information from memory: Effects on susceptibility to persuasion and on intrinsic motivation. *Journal of Personality and Social Psychology*, *42*, 798–810.
- Wood, W., & Kallgren, C. A. (1988). Communicator attributes and persuasion: Recipients' access to attitude-relevant information in memory. *Personality and Social Psychology Bulletin*, *14*, 172–182.
- Wortman, C. B., & Brehm, J. W. (1975). Responses to uncontrollable outcomes: An integration of reactance theory and the learned helplessness model. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 8, pp. 277–336). New York: Academic Press.

*Page Intentionally Left Blank*