

Attitude Change

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Arguably two of the most fundamental and adaptive capacities any agent could possess would be the ability to construct meaningful evaluations of external stimuli (determining which entities are helpful, useful, gratifying, or valuable versus dangerous, confounding, unpleasant, or useless) and the ability to later retrieve or reconstruct these evaluations in the presence of the same or related stimuli. Once activated, such evaluations provide a basis for deciding whether to approach and engage with an entity or to avoid it all costs. These capacities are at the heart of the psychology of attitudes. Of course, environments are dynamic and a given entity's evaluative significance could easily change over time. A person who is helpful at one point in time might prove to be untrustworthy in a subsequent situation. As a result, an adaptive attitude system must be amenable to modification in light of new experiences; attitudes that are characterized by rigid stability run the risk of providing obsolete or overly general behavioral guidance. The processes governing attitude change are the focus of this chapter.

Automatic versus Deliberate Evaluation

Historically, the primary focus of attitude research was on deliberate evaluative judgments of the sort that could be verbally reported in interviews and questionnaires. Many hundreds of studies have been conducted on the factors that result in modification of these deliberated expressions of attitudes. Such evaluations consist of assertions about the evaluative properties of a stimulus (e.g., "X is good" or "I like X"), and we refer to them as *propositional evaluations* in light of their explicit, declarative nature. However, in recent years there has been a growing appreciation that evaluative reactions also occur in a more immediate, less deliberate manner (e.g., Petty, Fazio, & Briñol, 2009). Even preverbal infants who are not yet able to make propositional assertions are nevertheless quite capable of learning and expressing evaluations (Hamlin, Wynn, & Bloom, 2007). Whereas propositional evaluations consist of articulated beliefs, these latter, more immediate evaluative responses are more akin to automatic affective reactions toward the attitude object. Drawing on the assumption that these reactions result from the activation of automatic associations, we refer to them as *associative evaluations*. Instead of relying on self-report questionnaires and surveys, the assessment of associative evaluations focuses on performance on a variety of behavioral tasks that are assumed to be influenced by automatic associations (see Gawronski & Payne, 2010). This distinction between associative and propositional evaluations is analogous to the distinction between "alief" and belief in recent philosophy of epistemology (e.g., Gendler, 2008).

The term "automatic" carries multiple implications, including rapidity, spontaneity, efficiency, and uncontrollability (see Moors & De Houwer, 2006). It is also often taken to imply that a process is implicit, or introspectively unavailable. The causes and consequences of associative evaluations may indeed often remain introspectively unidentified or misidentified, but assertions that associative evaluations, *per se*, are commonly unconscious remain controversial (e.g., Gawronski, Hofmann, & Wilbur, 2006). Although associative and propositional evaluations differ in several respects, Gawronski and Bodenhausen (2006; in press) argue that the key qualitative difference between them lies in the fact that propositional evaluations are subject to assessments of their truth value; propositional claims are regarded as true or false to some degree, depending on their consistency with other salient propositions (see Festinger, 1957). In contrast, truth and falsity have no relevance when it comes to one's automatic affective reactions; such associative evaluations simply are what they are. The Associative-Propositional Evaluation (APE) Model proposed by Gawronski and Bodenhausen (2006; in press) provides an extensive consideration of how the processes underlying the two kinds of evaluation can interact in different circumstances, but by default, it is assumed that people will commonly propositionalize their automatic affect, turning an immediate feeling state (e.g., the unpleasant taste of Brussels sprouts) into an assertion about the world that is held to be true ("Brussels sprouts are horrible."). However, if contradictory propositions happen to be salient (e.g., "Brussels sprouts are extremely nutritious."), then it

becomes possible for propositional evaluations to dissociate from associative ones. Research has found such dissociations to be more pronounced in certain domains, such as racial and other intergroup attitudes (e.g., Greenwald, Poehlman, Uhlmann, & Banaji, 2009). Thus, in examining the nature of attitude change it is necessary to consider processes that influence both associative and propositional forms of evaluation.

Malleability versus Stability of Attitudes

In addition to serving the fundamental object appraisal function described above, attitudes can serve a multitude of other psychological functions (e.g., Shavitt, 1989). For example, they can provide a means for connecting with others, for self-expression, and for the maintenance of self-esteem, among others. Thus, the stability versus malleability of attitudes has important implications for their functionality. The stability of propositional evaluations has been investigated extensively. In the domain of political attitudes (e.g., Converse, 1964), early research suggested a great deal of stability in many of these attitudes (e.g., attitudes toward political parties), and such attitudes were characterized as being “crystallized.” A crystallized attitude is conceptualized as being stored in memory in an encapsulated manner and subsequently retrieved, whenever the attitude object is considered, presumably producing very similar evaluations across time. A more contemporary version of this approach can be found in the work of Fazio (1995), who defines attitudes as stored object-evaluation associations. From this perspective, a given evaluative association exists as a stable structure in memory, and given that it is activated, it can produce a consistent pattern of evaluative responses over time. In essence, attitudes are viewed as evaluative dispositions in this approach.

The view of attitudes as stable memory structures that are retrieved and applied across various episodes was challenged by an alternative viewpoint asserting that attitudes are constructed on the fly, based on a variety of informational inputs—implying that attitudes should in fact commonly be malleable (e.g., Schwarz, 2007; Smith & Conrey, 2007). This perspective views attitudes as being transitory states triggered by the interaction of stored memories and environmental inputs, rather than as enduring traits; it makes no assumption of an enduring, encapsulated attitude representation that operates independently of context. To the extent that stability of attitude expression is observed, it is assumed to result largely from the stability of relevant environmental cues.

These two perspectives represent fundamentally distinct approaches to understanding what attitudes are and how stable they are likely to be. Empirically speaking, there is certainly ample evidence for both the stability and the malleability of attitudes. Thus, the identification of relevant moderator variables becomes important. General characteristics of the attitude holder and specific characteristics of the attitude have been shown to be influential moderators of stability.

Characteristics of the Attitude

Many approaches to understanding variations in attitude malleability have focused on the possibility that there are different types of attitude that vary in their potency and stability. For example, political attitudes were held to vary on a continuum from being highly symbolic to nonsymbolic (e.g., Sears, 1975). Symbolic attitudes are assumed to be acquired quite early in life and to be based mostly on affect rather than well articulated knowledge. Nonsymbolic attitudes, in contrast, involve thoughtful integration of information (and can only form at later developmental stages, after a capacity for reasoning develops). The latter type of attitude was assumed to be more susceptible to modification, via persuasive arguments or changing political realities, whereas the former was thought to be more deeply ingrained and impervious to change. Although research initially supported this contention, it was ultimately shown to rest on a methodological artifact, and the claim that symbolic attitudes are inherently less susceptible to change was thrown into doubt (Krosnick, 1991). This symbolic-nonsymbolic distinction bears a good deal of similarity to our distinction between associative and propositional evaluations, and analogous arguments have been put forth suggesting that implicit or associative evaluations should have developmental priority and be more difficult to change, compared to explicit or propositional evaluations (e.g., Rudman, 2004; Wilson, Lindsay, & Schooler, 2000); however, a considerable body of research has shown that automatic evaluations are in fact readily malleable (e.g., Blair, 2002).

Taking a different approach, some researchers have conceptualized attitudes as varying on a strength continuum, with stability being one of the properties of strong attitudes. Within this tradition, it

has been demonstrated that the presence of other indicators of attitude strength, such as high importance, certainty, extremity, or accessibility of the attitude, imply an attitude's stability (e.g., Krosnick, 1988). Several variables have been documented as precursors of attitude strength. For example, attitudes vary in the degree to which they are genetically heritable (presumably because of the effects of genes on relevant psychological factors such as temperament, sensory processes, intelligence, etc.) and those with a higher heritability are generally stronger and more stable (e.g., Olson, Vernon, Harris, & Jang, 2001). In terms of the social environment, Visser and Mirabile (2004) showed that individuals who are situated within relatively more attitudinally homogeneous social networks tend to have stronger, more stable attitudes.

Another characteristic of an attitude that relates to its stability is valence. Negative attitudes are often harder to change than positive ones. One reason this may be the case is the fact that negative information is perceived as less ambiguous and more diagnostic than positive information (for a review, see Skowronski & Carlston, 1989), implying that attitudes formed on the basis of positive information are more amenable to subsequent reevaluation. Another important valence-related moderator has been documented by Fazio, Eiser, and Shook (2004); because people with negative attitudes often avoid the disliked entity, they are less likely to have new experiences with it that might cause them to update their views. In contrast, people holding a positive attitude are likely to interact with the attitude object and thus are much more likely to have new, potentially counterattitudinal experiences. In sum, negative attitudes in general, and any attitudes that are regularly socially reinforced or undergirded by genetically influenced processes, tend to be stronger and therefore are less easily modified.

Characteristics of the Attitude Holder

Certain dispositional characteristics are known to be associated with greater or lesser degrees of attitude stability. Of the "Big Five" fundamental personality dimensions, it is openness to experience that has the most consistent bearing on social attitudes (McCrae, 1996). Dogmatism, for example, represents a form of closedness that is fundamentally characterized by a rigidity of attitudes (Miller, 1965). Individuals who are high in the dispositional need for closure are more resistant to persuasion (Webster & Kruglanski, 1994). A certainty orientation is also associated with a tendency to forget information that is incongruent with one's expectations (Driscoll, Hamilton, & Sorrentino, 1991), creating a substantial disadvantage for counterattitudinal information.

Another personality variable that has often been shown to have great significance for attitudinal phenomena is self-monitoring, which refers to the degree to which people are habitually concerned with the impression they are making on others (Snyder & Tanke, 1976). Because high self-monitors are oriented toward social acceptance, they are often readily willing to modify their evaluations to fit in with their current social milieu. Low self-monitors, in contrast, are more likely to express cross-situationally stable evaluations. The bulk of the research on dispositional variations in attitude stability has focused on explicit, propositional evaluations. A useful direction for future research would be to determine whether these same dispositional factors, or different ones, predict the relative stability of automatic evaluations.

Mechanisms of Attitude Change

Learning-Based Attitude Change

What psychological processes bring about attitude change? The most common and longstanding assumption is that learning drives attitude change (e.g., Hovland, Janis, & Kelley, 1953). We first consider the case of *propositional learning*, which can be conceptualized as the acquisition of new propositional information about an attitude object. We then we turn to *associative learning*, which can be described as the formation of new associative links in memory on the basis of mere co-occurrences between objects and events. In each case, the underlying assumption is that learning new information (whether acquired vicariously or via new experiences with an attitude object) is the critical determinant of any observed change in evaluation.

In one of the first comprehensive theoretical models of attitude change, Hovland et al. (1953) proposed that the essence of persuasion lies in the (propositional) learning of persuasive messages. Message learning was viewed as depending on (a) attention to the message, (b) comprehension of the message, (c) yielding to the arguments contained in the message, and (d) retention of these arguments. Other variables (e.g., communicator characteristics, message format, type of audience, etc.) were thought

to be important only to the extent that they influenced one (or more) of these four key processes mediating persuasion. Although the program of research stimulated by this theoretical model was hugely influential in shaping attitude change research for decades, its core assumption came into question in a seminal analysis conducted by Greenwald (1968). Greenwald noted that the central implication of this message-learning model of persuasion was that the degree of attitude change should be robustly correlated with recall of the message contents. In fact, this was typically not the case (but see Chattopadhyay & Alba, 1988, for evidence that more sensitive measures of message learning can indeed evince stronger correlations with attitude change). Instead, what Greenwald showed was that the nature of message recipients' own self-generated thoughts (termed "cognitive responses" to the persuasive appeal) predicted whether or not attitude change ultimately occurred. When counterattitudinal information resulted in positive thoughts, persuasion was likely, but when it produced counterarguing, persuasion was typically not evident. It quickly became evident that message recipients are not merely passive receptacles who can be spoon-fed new information; rather, they actively generate their own propositional assertions in response to a persuasive appeal. In this sense, the relevant mediating process is focused less on the learning of new, externally provided propositions per se and more on working out the propositional implications of provided information when considered in relation to the recipients' other knowledge and beliefs (see also Festinger, 1957). In cases where persuasion does occur, this kind of cognitive elaboration can still be construed as a case of propositional learning, but the process is much more active and dynamic than Hovland and colleagues realized.

As the message-learning approach yielded to the cognitive-responses approach (Petty, Ostrom, & Brock, 1981), the underlying process model shifted to a focus on message reception (attention and comprehension), elaboration (active cognitive responses), and retention (not necessarily of the message per se, but of the evaluative implications of the elaborative thinking that has occurred). Persuasion-related variables were viewed as having their impact in large part via their influence on the content and extent of elaborative processes rather than on message learning. Prominent models that emerged from this perspective (e.g., Petty & Cacioppo, 1981) emphasized the importance of two critical factors in shaping the outcome of propositional reasoning in response to persuasive messages. First, the quality of the message content (e.g., the strength of the propositional logic and the supporting evidence provided in favor of the advocated position) was viewed as determining whether message recipients' cognitive responses were likely to be positive or negative. Second, a variety of elaboration moderators were assumed to determine the extent to which recipients will engage in propositional analysis. Two principal classes of elaboration moderators were identified (see Petty & Briñol, in press): variables that bear on the ability to reason about a message (e.g., distraction, time pressure, or topical knowledge) and variables that bear on the motivation to do so (e.g., personal relevance of the issue, accuracy concerns, or dispositional enjoyment of cognitive analysis). Attitude change based on propositional reasoning was thus predicted to emerge only to the extent that (a) message recipients are both motivated and able to engage in cognitive elaboration, and (b) informational cues provided in the persuasive message are strong and compelling. This prediction has been frequently confirmed in empirical research (see Petty & Briñol, in press).

At the same time that Hovland and colleagues were laying out their message-learning model of persuasion, other attitude researchers were emphasizing a quite different approach, linked to prevailing behaviorist models of conditioning. Here, the focus was much more on the formation of evaluative associations rather than propositional reasoning. For example, Staats and Staats (1957; 1958) conducted research using a classical conditioning procedure and argued that when an attitude object is consistently paired with other stimuli that have clear positive or negative connotations, those same connotations come to be associated with the attitude object, without any conscious awareness of the conditioning process. Although research on such forms of evaluative conditioning (EC) languished for years, increasing attention to unconscious processes and automatic evaluation in recent years has prompted a resurgence of interest in this topic (see De Houwer, Thomas, & Baeyens, 2001; Hofmann, De Houwer, Perugini, Baeyens, & Crombez, 2010).

An interesting question in the context of attitude change is what kinds of associations are formed during EC. One possibility that has been explored is that the formerly neutral conditioned stimulus (CS)

acquires its valence *indirectly* through a mental link to the positive or negative unconditioned stimulus (US) it has been paired with (i.e., stimulus-stimulus learning). An alternative is that the CS becomes *directly* associated with a positive or negative response independent of the particular US (i.e., stimulus-response learning). An important difference between the two accounts is that subsequent changes in the valence of the US should lead to corresponding changes in the evaluation of the CS in cases of stimulus-stimulus learning, but not in cases of stimulus-response learning (Walther, Gawronski, Blank, & Langer, 2009). Importantly, the effects of US-revaluation predicted by the stimulus-stimulus learning account may occur in the absence of any new experiences with the CS. For instance, when an initially likeable celebrity falls out of favor due to socially undesirable behavior (as in the cases of Tiger Woods or Kobe Bryant), the new evaluation of the celebrity may associatively spread to products that have been associated with the celebrity in previous advertisements. Providing deeper insights into the boundary conditions of such US revaluation effects, a recent study by Sweldens, Van Osselaer, and Janiszewski (2010) showed that pairings of a CS with the same US produced EC effects via stimulus-stimulus learning regardless of whether the CS and the US were presented simultaneously or sequentially. In contrast, pairings of a CS with multiple different US of the same valence produced EC effects via stimulus-response learning for simultaneous presentations. Sequential pairings a CS with multiple US of the same valence failed to produce any significant EC effects.

Given the research showing that attitudes can be shaped by processes that are relatively devoid of propositional thinking, attitude theorists developed dual-process models of persuasion that viewed attitude change as taking relative thoughtless as well as more thoughtful forms (Chaiken, Liberman, & Eagly, 1989; Petty & Cacioppo, 1981). These models held that even when there were constraints on propositional analysis (i.e., factors that limit the recipients' ability or motivation to think about a persuasive appeal), attitude change could still occur by less thoughtful means. In such circumstances, individuals can still rely on "peripheral cues" or simple persuasive heuristics to quickly determine the valence of the attitude object. Such cues could include affective associations (e.g., a highly attractive spokesperson leads to positive feelings about the associated attitude object) or simple cognitive rules of thumb (e.g., a spokesperson who appears to be an expert invokes the belief that "experts are usually right"). From the standpoint of these theories, the aforementioned elaboration moderators play the critical role in determining which of two qualitatively different persuasion routes will be engaged: systematic thinking or heuristic processing. This assumption came under close scrutiny by Kruglanski and Thompson (1999), who argued that the case for qualitatively distinct processes was actually quite weak. In the view of their "unimodel," so-called heuristic processes can simply be viewed as less effortful and less extensive forms of propositional thinking. Determining whether persuasion heuristics constitute a distinct form of persuasion is complicated by the diversity of meanings that have been attached to the term "heuristic" (see Shah & Oppenheimer, 2008). In reviewing the heuristics literature, Shah and Oppenheimer emphasized effort reduction as the *sine qua non* of heuristic processing, and this perspective accords nicely with Kruglanski and Thompson's claim that heuristics should be regarded as representing a simplified or scaled-down form of propositional thinking, rather than a qualitatively different phenomenon.

Though the heuristic-systematic distinction per se seems insufficient to characterize qualitatively different evaluative processes, alternative dual-process models may provide a more promising basis for doing so. As previously noted, Gawronski and Bodenhausen's (2006; in press) APE model draws upon the distinction between associative and propositional processes and views the critical qualitative difference between the two processes as being the extent to which an evaluative reaction is subjected to validation or truth-testing. Associative evaluations are hypothesized to involve the mere activation of an affective reaction that cannot meaningfully be said to be "true" or "false" – it simply *is*. Propositional evaluations, in contrast, must necessarily be regarded as either true or false, to some degree, and this implies their eligibility for syllogistic reasoning processes and concerns about their consistency with other relevant propositions. From this perspective, some of the persuasion heuristics identified in previous research are considered associative in nature (those that involve the formation of associative links on the

basis of mere co-occurrences, such as in the case of the attractive spokesperson), while others are propositional (e.g., “experts are usually right”).

The APE model’s analysis points to two qualitatively different learning mechanisms in attitude change: the automatic formation of new associations on the basis of mere co-occurrences between objects and events (*associative learning*) versus mechanisms involving logical reasoning and a systematic assessment of the validity of available information (*propositional learning*). At the same time, it heavily emphasizes the intricate interactions between associative and propositional processes. In many circumstances, these processes are likely to work in concert to produce well aligned automatic and deliberated evaluations regardless of whether new information has been acquired through associative or propositional learning (e.g., Whitfield & Jordan, 2009). Yet, associative and propositional evaluations have also been shown to be dissociated under a variety of circumstances, and the APE model attempts to provide a comprehensive account of the conditions under which the two learning mechanisms produce either congruent or incongruent evaluations. For instance, in line with the predictions of the APE model, EC-related pairings of an attitude object with positive or negative stimuli have been shown to produce corresponding changes in associative and propositional evaluations when participants used their affective responses as a basis for evaluative judgments, but not when they introspected on reasons for their preferences (e.g., Gawronski & LeBel, 2008). Conversely, associative and propositional evaluations have been shown to be equally affected by newly acquired propositional information when this information was regarded as valid (e.g., Whitfield & Jordan, 2009). Yet, a rejection of newly acquired information as false influenced only propositional, but not associative, evaluations (e.g., Gregg, Seibt, & Banaji, 2006).

Behavior-Induced Attitude Change

In the majority of research on attitude change, the focus has been on the influence of environmental cues and persuasive messages on the contents of evaluative representations, which are thought in turn to play an important role in guiding behavioral responses to attitude objects (e.g., Fishbein & Ajzen, 2010). For example, a TV advertisement might provide a consumer with good reasons to form a positive attitude toward a new fast food restaurant, so she decides to try it. However, some research has turned this sequence on its head, asking instead: how does one’s behavior toward an attitude object influence one’s evaluation of it (Olson & Stone, 2005)? There might be many reasons why a consumer would try a new restaurant that have nothing to do with her attitude—going along with friends, convenience of the location, etc. In such a case, does the act of going to the restaurant have any influence on the consumer’s attitude toward it? If positive attitudes engender approach behavior, does approach behavior engender positive attitudes?

Undoubtedly the most famous explanatory account for behavior-induced attitude change is the one provided by cognitive dissonance theory (Festinger, 1957). Of primary interest are cases in which thoughts of one’s behavior are inconsistent with one’s attitude. Festinger proposed that these inconsistencies between cognitive elements are aversive, and they motivate efforts to restore consonance. If they cannot be sufficiently justified by external factors, then attitudes will likely be modified to bring them in line with the behavior that has been performed. This phenomenon has been frequently documented in the “induced compliance” paradigm, in which individuals are led to engage in a counterattitudinal behavior through the application of social influence (although the individuals feel that they have freely chosen to engage in the behavior). In such cases, as long as there is strong external justification for the behavior, such as a sizable cash reward, attitudes remain unchanged; however, if external justifications are insufficient, then attitudes are observed to shift in the direction of the counterattitudinal behavior, in order to provide an internal justification for it (Festinger & Carlsmith, 1959). Another frequently studied dissonance paradigm involves choice-induced preference shifts (e.g., Brehm, 1956). When individuals must choose between similarly valued options, making a choice can evoke dissonance (e.g., “I chose A, but B has so many positive features”). In order to eradicate this inconsistency and justify the choice that has been made, choosers must convince themselves that the chosen option is actually clearly preferable. This dissonance reduction process results in a “spreading of alternatives,” in which the chosen option comes to be evaluated more favorably and the non-chosen option evaluated less favorably, compared to pre-choice attitudes.

An alternate account of these sorts of findings is provided by Bem's (1967) self-perception theory. Unlike Festinger's theory, Bem makes no assumptions about aversive motivational states that drive individuals to construct logically consistent accounts of their own behavior. Instead, he simply assumes that people make inferences about the reasons for their own behavior based on available evidence (much as an independent observer would do). If I engaged in a given behavior without external justification, then I must possess an internal, attitudinal reason for doing so. Bem's theory has proven fruitful in attitude research (e.g., Fazio, 1987). Although Bem cast his theory specifically as an alternative to dissonance theory, most scholars have come to the conclusion that the two theories each have merits and are ultimately compatible with one another (e.g., Fazio, Zanna, & Cooper, 1977). However, it is important to note that both dissonance theory and self-perception theory are rooted in propositional reasoning processes. Dissonance, by its very nature, is concerned with the logical consistency of cognitive elements, and self-perception involves inferential processes that are similarly concerned with determining what is true and what is not true. Thus, although these processes have been well documented in the domain of propositional evaluations, they might be expected to have little influence on associative evaluations. Indeed, Gawronski and Strack (2004) used a classic induced compliance manipulation to show that counterattitudinal behavior (when not externally justified) produced the expected shifts in self-reported attitudes, but the same manipulation had no effect on automatic evaluations (for related findings, see Wilson et al., 2000).

One might expect the same dissociation to be evident in the case of choice-induced preference shifts, but the situation in that paradigm is more complicated. For one thing, there have been several demonstrations showing that similar preference shifts can occur in situations where an individual receives an object through no choice of her own (e.g., Egan, Bloom, & Santos, 2010). Research on the mere ownership effect (Beggan, 1992) and the endowment effect (Kahneman, Knetsch, & Thaler, 1990) similarly show that even when an object is received as a gift, its evaluation shifts (compared to how the same object is evaluated when it is not owned). Clearly, choice behavior is not an essential ingredient in these effects, and indeed, there is no behavior that needs to be justified or explained (whether by dissonance-reduction or self-perception mechanisms). Instead, a quite different mechanism may be a common denominator across these scenarios. Gawronski, Bodenhausen, and Becker (2007) argued that a simple associative process is involved whenever an object comes to be possessed, whether by choice, as a gift, or by random happenstance. Specifically, the things we own become associated with the self. Consequently, self-evaluations become associated with the objects we possess (Zhang & Chan, 2009). For the majority of individuals, automatic self-evaluations are decidedly positive (e.g., Yamaguchi et al., 2007). In their experiments, Gawronski et al. documented the formation of self-object associations following the choice of a given object, and they further showed that automatic evaluations of the chosen object were more positive to the extent that the individual had a positive automatic self-evaluation. Among those individuals who did not have a positive automatic self-evaluation, choosing an object did not result in subsequently enhanced automatic evaluations of it (see also Prestwich, Perugini, Hurling, & Richetin, 2010). Although these findings do not imply that propositional reasoning processes are irrelevant in producing choice-induced preference shifts, they do document a role for associative mechanisms in these phenomena. Given the existence of both propositional and associative mechanisms that can lead post-choice evaluative shifts, it is perhaps not surprising that these effects are evident both in self-reported and automatic evaluations.

Context-Induced Variations in Attitudes

The term "attitude change" usually connotes some sort of relatively enduring change. Whether speaking of automatic or more deliberate evaluative processes, one would typically expect such a change to be more than fleeting. However, it is clearly also the case that attitudes can vary over much shorter timescales. Such variations are typically not random or capricious, but rather reflect changes in the context in which a given attitude object is encountered.

It has long been recognized that self-reported evaluations can vary, sometimes markedly, as a function of the context in which questions about the attitude object are posed (for a review, see Tourangeau & Rasinski, 1988). The context in which an entity is evaluated can trigger a variety of

psychological processes that are likely to sway deliberations and judgments about it. Knowledge about many attitude objects is both extensive and diverse. As such, it is unlikely that individuals will retrieve all of this knowledge and use it in deriving their evaluative judgments of a given object. When stored knowledge is characterized by evaluative heterogeneity, then sampling of different subsets of knowledge might result in notably distinct evaluations. For example, when thinking about ice cream, if one thinks mostly about the delicious flavor and creamy texture, the evaluation will likely be much more positive than if one thinks mostly about its artery-clogging fat and waistline-expanding calories. Contextual cues can play an important role in directly activating different subsets of stored knowledge. For example, attitudes reported in political surveys often are strongly influenced by the order in which particular topics are raised. Tourangeau, Rasinski, Bradburn, and D'Andrade (1989) showed that these effects can be attributed to the role prior questions play in activating beliefs that have relevance to subsequently evaluated issues. Thus, earlier topics can bias the subset of available knowledge that is considered in reaching an evaluative judgment of a focal attitude object.

A different sort of bias emerges from the role of context cues in the resolution of stimulus ambiguity. Whichever features of an attitude object happen to be salient, it is often the case that their evaluative meaning is at least somewhat open to interpretation, and contextual stimuli can provide a standard that is used to fine-tune such interpretations. Two effects have been noted in the literature. Assimilation effects occur when the evaluation of a stimulus shifts in the direction of the evaluative tone of a salient contextual cue, while contrast effects occur when the evaluation shifts in the opposite direction (e.g., evaluating a vacation in California less favorably after thinking about a vacation in Hawaii). These effects are usually considered to be perceptual in nature (Sherif & Hovland, 1961), although it is surely the case that contrast and assimilation effects can also emerge from the activation of different subsets of knowledge following exposure to a particular context stimulus. For example, evaluations of the group "African Americans" are more sympathetic after people have been thinking about specific, positively evaluated group members (Bodenhausen, Schwarz, Bless, & Wänke, 1995), and this effect is presumably driven by the activation of a different subset of knowledge about the group after exposure to the positive exemplars. Schwarz and Bless (1992) developed a comprehensive model of the determinants of assimilation versus contrast effects in evaluative judgment. In their approach, the key moderating process lies in the categorization of the relevant stimuli. When a target stimulus is seen as belonging to the same category as the context stimulus, assimilation effects are observed such that the target is evaluated more in line with attitudes toward the context stimulus. However, when the target and context stimuli seem to belong in different categories, contrast effects emerge. The great majority of research on attitudinal context effects has focused on propositional evaluations. When individuals become aware that their propositional inferences may have been inappropriately influenced by a contextual stimulus, they often take steps to "correct" or debias their judgments, subtracting out the contextual influence (Strack & Hannover, 1996). However, such efforts are often poorly calibrated and result in either under- or overcorrection—most often the latter (see Wegener & Petty, 1997).

The extensive evidence of context effects in evaluative judgments raises questions concerning the situational variability of automatic affective reactions. As we previously noted, some theorists have assumed that automatic evaluations are likely to be much more stable than their deliberate counterparts (e.g., Wilson et al., 2000). However, given that prior research has implicated spreading activation within memory networks as playing a role in the generation of context effects based on question order (Judd, Drake, Downing, & Krosnick, 1991), the possibility that associative evaluations shift across different contexts would seem to be highly likely. Indeed, they do (Gawronski & Sritharan, 2010). For example, automatic racial biases are stronger when individuals have just read a newspaper story about a Black criminal (Correll, Park, Judd, & Wittenbrink, 2007), and they are weaker when African Americans are depicted in relatively unthreatening environments, such as in a church (Wittenbrink, Judd, & Park, 2001). When memory representations of an attitude object are evaluatively heterogeneous, the different subsets of associations that are triggered in different contexts can produce substantially different automatic evaluative reactions. These different automatic evaluations will then be likely to result in corresponding differences in propositional evaluations, provided that there are no salient propositions that invalidate the

propositional implications of the affect (Gawronski & Bodenhausen, 2006). For example, if a given context activates a more negative set of associations about African Americans, this could result in more negative propositional judgments as well, unless the individual considers conflicting propositions (e.g., “I should not think negative thoughts about minority groups”) and modifies explicit evaluative judgments accordingly. Thus, this analysis indicates that context-driven biases in association activation can often mediate corresponding context effects in evaluative judgments. Although it is certainly not the case that all context effects rely on this mechanism, it does provide one common process through which context-induced variations occur at both associative and propositional levels.

It is thus apparent that, although attitudes have often been considered to have a stable, dispositional quality (e.g., see Eagly & Chaiken, 2007), they can also be highly sensitive to situational variations. This seeming paradox raises fundamental questions about what is stable and general versus what is context-specific in our evaluative representations of the external world. Some new leverage on this issue was provided in recent research by Gawronski, Rydell, Vervliet, and De Houwer (2010). Their research focused on the role of attention to context cues during the acquisition of evaluative knowledge. When initial attitudes are formed in settings where context cues are not particularly salient, their relevance would not be expected to be context-delimited; under these circumstances, the acquired knowledge may later be triggered in a variety of different circumstances involving the attitude object. However, if a subsequent encounter with the attitude object produces unexpected affective experiences, then attention will be drawn to the context (to explain the unexpected state of affairs) and the newly acquired knowledge will be linked to the salient context cues. Thus, whenever these context cues are present during subsequent encounters with the attitude object, the newly acquired knowledge should be activated (“occasion setting”), but in any other context, the initial, domain-general knowledge would be triggered (“renewal”). Working out the full range of factors underlying relative stability versus malleability of automatic associations remains an intriguing and important topic for further investigation.

Resistance to Attitude Change

With respect to long-term changes in attitudes, researchers have traditionally focused their attention on the identification of factors that facilitate change (e.g., the variables in a communication setting that maximize persuasive impact). However, attention has also been directed to the countervailing forces that mitigate change (Knowles & Linn, 2004), recognizing that they are not likely to simply be the mirror image of the facilitating factors. In this final section, we examine some of the most noteworthy resistance processes.

Selective Exposure

Because counterattitudinal information is likely to create cognitive dissonance, given its logical incompatibility with one’s current attitude, Festinger (1964) argued that people will routinely avoid such information when they can. A variety of evidence has confirmed that people do in fact attempt to selectively expose themselves to attitudinally congenial information (e.g., Frey, 1986). However, if people invariably engaged in such selective exposure, they would run the risk of having very poorly tuned evaluations of the world. Thus, there is a tension between the need to have an accurate understanding of the world and the desire for feelings of relative security and personal validity that can only exist when one’s views of the world are not challenged. In a recent meta-analysis, Hart, Albarracín, Eagly, Brechan, Lindberg, and Merrill (2009) provided evidence that selective exposure to attitudinally relevant information is indeed modulated by the relative priority of accuracy versus defensive motives. They provided evidence of a moderate overall tendency for individuals to prefer attitudinally congenial information, but this tendency was significantly moderated by numerous variables. The tendency grew stronger under circumstances where defensive concerns are stronger (e.g., when the attitude in question is strongly linked to personal values, is held with strong conviction, or when the individual is dispositionally closed-minded). The tendency reversed (i.e., an “uncongeniality bias”) when accuracy motives were activated (e.g., when the accuracy of an attitude has a direct bearing on the accomplishment of a salient goal). Thus, selective exposure is indeed a common but by no means universal mechanism that can produce attitudinal stability.

Defensive Elaboration

When people choose, or are situationally forced, to pay attention to counterattitudinal information, a variety of defensive processes can be unleashed in the service of protecting their attitudes from modification (Jacks & Cameron, 2003). In various ways, these processes involve the recruitment of propositional knowledge that is intended to undermine the persuasive force of an appeal. *Attitude bolstering* refers to the retrieval and rehearsal of arguments supporting one's current attitude. *Social validation* involves calling to mind other individuals who share one's attitude, thereby providing a reassuring sense of its appropriateness. *Counterarguing* involves scrutinizing presented counterattitudinal information in an effort to detect weaknesses in the logic or evidence provided that would permit the information to be discredited and dismissed. *Source derogation* focuses on constructing *ad hominem* arguments for mistrusting or disregarding the claims of the communicator. The research of Jacks and Cameron showed that, of these strategies, people expect to commonly use—and actually do commonly use—bolstering and counterarguing strategies. However, whereas respondents generally indicated that they would be unlikely to rely on source derogation, in an actual persuasion situation, derogation was in fact a relatively commonly deployed defensive strategy. In their analysis of resistance to persuasion in the domain of death-penalty attitudes, they found that counterarguing was generally the most effective resistance strategy, as the cognitive-responses approach would anticipate (Greenwald, 1968). Counterarguing can be encouraged by forewarning individuals that they will be targeted for persuasion (Petty & Cacioppo, 1977) or by giving them specious, easily refuted counterattitudinal information prior to a strong persuasive attack (i.e., the “inoculation” strategy, McGuire & Papageorgis, 1961). Overall, defensive elaboration is most likely to be triggered whenever individuals feel that a persuasive appeal involves an unwarranted manipulative intent on the part of the source and they feel relatively vulnerable to such manipulation (Sagarin, Cialdini, Rice, & Serna, 2002).

Overcoming Resistance

Marketers, politicians, and others who are in the business of influencing people's attitudes have sought to identify strategies for overcoming the forces of resistance that tend to hold attitudes in place. One approach has been to camouflage the persuasion, so that targets are not made to feel vulnerable to manipulation. Narrative persuasion (Green, Strange, & Brock, 2002) involves using stories (rather than persuasive essays or speeches) to imply the validity of particular attitudes. This approach is founded on the notion that when people enter narrative worlds, they routinely suspend their disbelief and engage in a relatively uncritical way with the premises of the story. Research has indeed confirmed that, to the extent that audiences have been psychologically “transported” into a narrative world (Gerrig, 1993), they are unlikely to counterargue or resist the attitudinal implications of the story and their attitudes are thus more likely to change (Green & Brock, 2000).

Taking the camouflage idea one step further, some agents of social influence have pursued the possibility of subliminal persuasion, in which cues that might influence attitudes are presented below the threshold of conscious awareness. Obviously, if persuasive information is not detected, it cannot be strategically resisted. Although psychologists have often been highly skeptical of claims of subliminal influence (e.g., Pratkanis, 1992), there is no doubt that many replicable experiments have documented the potential for subliminal stimuli to influence evaluations. For example, Monahan, Murphy, and Zajonc (2000) produced a subliminal mere exposure effect, such that multiple subliminal presentations of a novel stimulus resulted in subsequently more favorable evaluative judgments of it. Krosnick, Betz, Jussim, and Lynn (1992) produced evaluative conditioning effects using affectively potent but subliminally presented photos as the unconditioned stimuli that were paired with supraliminal photographs of a target person; the valence of the subliminal photos influenced propositional evaluations of the target. Despite findings of this sort, evidence for effective behavioral social influence via subliminal stimulation has been scant. One exception is a study by Karremans, Stroebe, and Claus (2006), who found that subliminal presentation of the name of a particular brand of beverage (“Lipton Ice”) resulted in a greater likelihood of immediately subsequent choice of the brand, particularly among individuals who were thirsty at the time. Thus, motivational relevance may moderate susceptibility to subliminal influence (see also Strahan, Spencer, & Zanna, 2002). Much remains to be learned about the viability of subliminal methods for influencing attitudes, but if and when they occur, such influences are likely to be only very short-lived.

Conclusion

We began by arguing that the ability to produce meaningful evaluations of the external world is a critical cognitive capacity for adaptive functioning. Many decades of focused empirical attention have produced an extensive database documenting the processes governing the construction and modification of attitudes. We have provided a necessarily selective overview of this work, which has shed a great deal of light on the psychology of attitude change. Despite the extensive progress that has been made, many questions remain open, and new discoveries continue to emerge. Evaluating the state of research on attitude change will, no doubt, require its own updating in years to come.

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