

CHAPTER 10

Knowing Our Attitudes and How to Change Them

PABLO BRIÑOL
RICHARD E. PETTY

People know many objective facts about themselves, such as their age and how tall they are. It might seem obvious that people also would know their more subjective likes and dislikes—what they value and what they disdain—and know why they feel this way. However, research suggests that this is more complicated than it may first appear. In this chapter we review social-psychological studies on what people know about their attitudes, where they come from, and how they can be changed. We will see that although people have various notions (naive theories) about different aspects of their attitudes, these theories may or may not be accurate. We address whether or not this matters. We argue that both what people actually know about their attitudes and what they *think* they know can have important implications for how they process information about the world and how likely they are to modify and act on their attitudes.

Attitudes refer to general evaluations individuals have regarding people (including themselves), places, objects, and issues (e.g., ice cream is good; chocolate-covered cockroaches are nasty). Although some people enjoy evaluation more than others and are thus more likely to form attitudes (Jarvis & Petty, 1996), virtually everyone has attitudes about a diversity of objects and issues (Bargh, Chaiken, Gollwitzer, & Pratto, 1992). Attitudes are important because of their influence on people's choices and actions; that is, all else being equal, people decide to buy the products they like the most, attend the university they evaluate most favorably, and vote for the Presidential candidate they approve of most strongly. People who do not know what their attitudes are, they might not know how to act ("Should I buy chocolate or vanilla ice cream?"). Yet, as we see shortly, people do not always know what their attitudes are. And, even if people know their attitudes, they may not know where these attitudes come from, on what they are based, and what they do. After tackling these issues, we

turn to the question of whether people know how and when they can change their own attitudes and the attitudes of others.

Knowing about Attitudes, Their Bases and Consequences

Explicit versus Implicit Attitude Measures

Because researchers initially made the seemingly reasonable assumption that people have knowledge of their own attitudes, most attitude measurement procedures simply ask people to report their evaluations (e.g., “On a scale where *–5* means *extremely bad* and *+5* means *extremely good*, how would you rate your evaluation of ice cream?”). Indeed, much research suggests that attitudes often come to mind automatically upon merely encountering an attitude object and can be reported rather quickly (e.g., see Bargh, Chaiken, Raymond, & Hymes, 1996; Fazio, Sanbonmatsu, Powell, & Kardes, 1986). An interesting puzzle, however, is that sometimes when researchers use implicit measures of attitudes such as the evaluative priming procedure (Fazio, Jackson, Dunton, & Williams, 1995) or the Implicit Association Test (Greenwald, McGhee, & Schwartz, 1998) that assess evaluations that come to mind automatically, they find that the attitudes observed are different from the ones that people report on more deliberative self-assessments (e.g., Greenwald, Poehlman, Uhlmann, & Banaji, 2009). For example, when responding to an object such as the self or a member of a racial minority group, people might explicitly say that they like (or dislike) the object, but an implicit measure tapping into an automatic evaluation might show that the opposite evaluation comes to mind spontaneously.

Although much of the time implicit and explicit measures tell the same story about one's attitudes, what does it mean when these measures produce different outcomes? There are a number of possibilities (see Petty, Fazio, & Briñol, 2009). In what might be called a *single attitude* approach, some have argued that the automatic attitude that comes to mind spontaneously is the “real” attitude (e.g., Dijksterhuis, Albers, & Bongers, 2009), whereas the explicit measure represents an evaluation colored by “downstream” influences (e.g., see Gawronski & Bodenhausen, 2006; Olson & Fazio, 2009). Importantly, the fact that downstream influences modify what people explicitly report as their attitude does not mean that people are unaware of their automatic evaluative tendencies. For example, people might not report a gut feeling because of fear that it might not be approved of by society (Olson & Fazio, 2003). Or a person might know what evaluative reaction automatically comes to mind but choose not to report it because he or she is uncertain of its origin or has concerns that it is inappropriate to rely on gut feelings. In support of the latter possibility, in one study (Loersch, McCaslin, & Petty, 2011), college students received neutral verbal information about a target person, as well as positive or negative associative information (i.e., pleasant or unpleasant pictures) presented subliminally (i.e., outside of conscious awareness). Prior research had suggested that the former information affected explicit measures, whereas the latter did not. When the standard attitude instructions were given, the subliminal associative information did not affect explicit attitude reports as in past research (see Rydell & McConnell, 2006). However, when instructed that going with gut feelings was legitimate, explicit measures of attitudes were influenced by the subliminal affective stimuli.

Other research further indicates that when people are led to believe (or already believe) that relying on their intuitions is legitimate, explicit and implicit measures become more highly correlated (see Jordan, Whitfield, & Ziegler-Hill, 2007; Ranganath, Smith, & Nosek, 2008). In general, the available research suggests that people sometimes have insight into their automatic evaluative reactions but choose not to rely upon these feelings when making explicit attitude reports because of social desirability fears or concerns that this information is not diagnostic or valid. It is also possible that people might not even notice these quick reactions unless they are motivated (or prompted) to search for them. In such cases, the explicit attitudes reported would presumably be based on a search for information people have about the object in memory or by factors in the immediate context. For example, a negative reaction might come to mind immediately upon presentation of an attitude object (and represent the person's attitude), but if the person does not notice this reaction or understand its source, or questions its validity, this negative reaction might be overridden by positive feelings from the environment, and the person would report a favorable evaluation.

Rather than assuming that implicit measures are needed to assess the real attitude, another point of view on implicit–explicit discrepancies is that (putting lying aside) the person has two attitudes and both are meaningful. On the one hand, there is the attitude that the person acknowledges and can report; on the other hand, there is an automatic and more hidden attitude. In essence, this view argues that people can hold separate explicit and implicit attitudes, the first of which is open to conscious awareness, whereas the second is not (e.g., Greenwald & Banaji, 1995; Wilson, Lindsey, & Schooler, 2000). Although there are several versions of this *dual-attitudes* approach, one or more of the following assumptions are commonly made (see Petty & Briñol, 2009; Petty, Briñol, & DeMarree, 2007). First, the dual attitudes are thought to have separate mental representations that could be stored in separate brain regions (e.g., see DeCoster, Banner, Smith, & Semin, 2006). A second common assumption is that the two attitudes stem from distinct mental processes. Implicit attitudes are said to result from relatively automatic associative processes, whereas explicit attitudes stem from more deliberative propositional processes (e.g., Rydell, McConnell, Mackie, & Strain, 2006). Third, implicit and explicit attitudes are postulated to be relatively independent and to operate in different situations, such that explicit attitudes operate primarily when people are being thoughtful, but implicit attitudes operate when people are being spontaneous (see Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997). When considering all of these assumptions together, the dual-attitudes framework suggests that the attitudes people explicitly report holding versus those that come to mind automatically can be quite different.

Explicit versus Implicit Attitudes and Ambivalence

A third point of view on explicit–implicit discrepancies comes from the metacognitive model of attitude structure (MCM; Petty & Briñol, 2006; Petty, Briñol, & DeMarree, 2007). The MCM shares some features with each of the two approaches just described, but it also has some differences. In brief, the MCM holds that attitude objects can be linked in memory to both positive and negative evaluations that spring to mind automatically, but that these evaluations can differ in the extent to which

they are explicitly endorsed. When both positive and negative evaluations come to mind automatically and are endorsed (i.e., a person believes these represent his or her true assessments), the person's attitude is best described as being *explicitly ambivalent*. On a bipolar measure, an ambivalent person might appear to endorse a moderate or neutral attitude that represents his or her attempt to integrate both positivity and negativity. Because of this, it is sometimes useful to assess the positivity and negativity of underlying attitudes separately and calculate an objective ambivalence score (e.g., Kaplan, 1972). When people are aware of holding opposing positive and negative reactions to an attitude object, they report feeling conflicted, confused, torn, and mixed about the object (e.g., Priester & Petty, 1996; Thompson, Zanna, & Griffin, 1995). This conflict is especially apparent when people are about to make an attitude-relevant decision (van Harreveld, van der Pligt, & de Liver, 2009).

In addition to this intrapersonal discrepancy, interpersonal factors also contribute to feelings of ambivalence. In particular, when people believe that their attitudes are discrepant from those of liked others, there are feelings of conflict (Priester & Petty, 2001). One reason for this is that people want to agree with people they like, as specified by balance theory (Heider, 1958), and when they do not, they feel some tension. In addition, disagreement with liked others can indicate that one's attitude is incorrect (Festinger, 1954), which is also troublesome. Research has extended the causes of subjective ambivalence to include concerns about conflicting information that might exist but to which individuals have not yet been exposed (Priester, Petty, & Park, 2007) and to discrepancies between individuals' actual attitudes and the attitudes they would ideally like to possess (DeMarree, Wheeler, Briñol, & Petty, 2011). We discuss the latter in more detail later in this chapter.

When the cause of the conflict is explicit, people report being ambivalent, and the uncomfortable feeling that results from this state produces a number of important outcomes. For example, the more ambivalence people experience regarding an object, the slower they are to report their attitudes (Bargh, Chaiken, Govender, & Pratto, 1992) and the less functional the attitudes become in guiding behavior (Armitage & Conner, 2000; Sparks, Harris, & Lockwood, 2004). Given that subjective ambivalence tends to be a negative state, people are motivated to reduce it. The motivation to reduce ambivalence can lead people to pay careful attention to and think about information that might help them to resolve their conflict (e.g., Clark, Wegener, & Fabrigar, 2008; Maio, Bell, & Esses, 1996).

According to the MCM, in addition to the explicit ambivalence people report and feel when they acknowledge the source of the conflict (e.g., there are both positive and negative aspects to some object; "I disagree with my parents about this"), a more subtle kind of conflict, called *implicit ambivalence* can occur when people are not fully aware of an explicit conflict. For example, implicit ambivalence occurs if both positive and negative reactions to an object automatically come to mind, but one of these is endorsed as one's attitude and the other is rejected (Petty, Tormala, Briñol, & Jarvis, 2006). A rejected evaluation might be a past attitude that still comes to mind when the object is present (e.g., "I used to like smoking, but now I want to quit"), an association that was never endorsed but nonetheless comes to mind due to one's culture (e.g., from continuous depictions of a minority group and criminal activity in the media), or simply a vague feeling of unknown origin. In cases of implicit ambivalence, even though the person does not endorse opposite evaluations of the attitude object,

he or she can nevertheless feel uncomfortable when considering the object because unendorsed gut feelings conflict with endorsed evaluations (see Epstein, 2003; Petty & Briñol, 2009; Rydell et al., 2008).

In a series of studies, Briñol, Petty, and Wheeler (2006) have shown that discrepancies between automatic and deliberative measures can tap into this implicit ambivalence and are consequential. As noted earlier, one documented consequence of the doubt that emerges from explicit ambivalence is that it leads to enhanced information processing in a presumed attempt to resolve the ambivalence. In one study testing the notion that explicit-implicit attitude discrepancies can lead to enhanced information processing (Briñol et al., 2006, Experiment 4), undergraduates' self-evaluations (self-esteem) were assessed with both automatic and deliberative measures, then the absolute value of the difference between the two standardized measures was calculated as the index of discrepancy. Next, participants were exposed to either a strong or weak message about eating vegetables that was framed as self-relevant or not. The degree to which participants processed the message information was assessed by examining the extent to which the quality of the arguments affected postmessage attitudes toward vegetables (see Petty & Cacioppo, 1986). The more people process a message carefully, the more argument strength affects their evaluations.

The results of this study revealed that when the message was framed as self-relevant (i.e., relevant to one's personal life and thus relevant to the discrepancy), the extent of explicit-implicit discrepancy interacted with argument quality to affect attitudes. Specifically, the greater this discrepancy, the more participants differentiated strong from weak arguments. However, when the same strong and weak messages were framed as irrelevant to the self (i.e., the message was said to be about the properties of vegetables), explicit-implicit discrepancy did not interact with argument quality to predict attitudes. This suggests that explicit-implicit discrepancies do not lead to motivation to process all information—only information relevant to the object for which the discrepancy occurs.

In addition to examining implicit-explicit discrepancies that already existed, Petty and his colleagues (2006) also investigated discrepancies created in the laboratory. In one study, college students were first classically conditioned to like or dislike a target individual in order to create an initial attitude toward the target. Then, the participants received explicit information about the target individual that led them either to maintain their initially reported attitude or to change it. Next, participants were told that the target person was a candidate for a job at their university. To evaluate the candidate, they were provided with either a strong or a weak resumé to examine.

The key result was that participants' explicit attitudes toward the target person were more influenced by resumé quality in the condition when attitudes were changed than when attitudes toward the candidate had not been changed; that is, even though people whose attitudes were changed now held the same explicit attitude toward the target as people whose attitudes had not changed, they engaged in greater scrutiny of the resumé as if they were attempting to resolve some underlying ambivalence about the candidate. In this case, the implicit ambivalence stemmed from a conflict between the old attitude (which was still automatically activated) and the new one. These individuals did not report being ambivalent about the target person because they only endorsed their new attitude. Nonetheless, the fact that the old attitude did not

disappear led them to feel conflicted, and they therefore engaged in greater processing of information about the person (see also Rydell, McConnell, & Mackie, 2008).

Knowing What Our Attitudes Are: Summary

In conclusion, what does the work on implicit versus explicit attitude measures tell us about whether people have knowledge of their attitudes? First, it is clear that when both deliberative and automatic assessments of attitudes agree, it suggests that people are aware of their attitudes and can report them rather easily. The fact that implicit and explicit measures of attitudes often *do* agree across a wide variety of attitude objects suggests that people typically are aware of their attitudes (Greenwald et al., 2009). This makes sense, of course, because if people were not aware of their attitudes, they would not know how to behave, or their behavior would be wildly inconsistent across time, but this is not the case.

However, we have seen that automatic and deliberative measures of attitudes do not always agree, and we have provided three different conceptualizations of this. Our own view, captured by the MCM, is that when there is *genuine divergence* in the valence of what implicit and explicit attitude measures indicate (i.e., the person is not attempting to be deceptive on either measure), then the attitude object is linked to both positivity and negativity in memory and for some reason one of these associations is not accepted; that is, the person's theory about the unendorsed valence, if it is perceived at all, is that it either does not stem from the attitude object or it stems from the attitude object but is invalid to consider for some reason (e.g., it represents an old attitude or is an association from the culture). Because one valence is rejected, the person will not report being ambivalent, but may nonetheless experience discomfort when the attitude object is brought to mind. When deliberating about how to act, people generally behave in accord with what they believe their attitudes to be, as assessed by explicit measures. However, when people are acting more spontaneously without reflection, then automatic evaluative associations, as assessed with implicit measures, are more likely to have an impact (Dovidio et al., 1997; see Olson & Fazio, 2003). Finally, we have seen that both implicit and explicit attitudes can jointly influence information processing when these evaluations are in conflict.

Knowing How Much Knowledge We Have

Even though people are often aware of what their attitudes are, they are not necessarily aware of *why* they hold the attitudes they do (Fox, Ericsson, & Best, 2011; Nisbett & Wilson, 1977; Wilson & Hodges, 1992); that is, people might or might not know what underlies their attitudes. This, however, does not prevent people from having naive theories about the bases of their attitudes, which are consequential even though these naive theories do not necessarily correspond with reality.

First, consider what people know about how much knowledge they have on an attitude issue. People make decisions based on not only what they actually know (objective amount of knowledge; see Wood et al., 1995) but also on what they think they know (subjective amount of knowledge); that is, regardless of its accuracy, subjective knowledge has been documented to have important consequences. For example, Radecki and Jaccard (1995) measured participants' knowledge of nutrition

with a self-report questionnaire (subjective knowledge), as well as their performance on a multiple-choice test (objective knowledge). After the researcher controlled for objective knowledge, subjective knowledge predicted information search, such that participants with less subjective knowledge requested more information on the issue than did participants with more subjective knowledge (see also Brucks, 1985). This research suggests that the more people think they know about something, the less likely they are to expend resources on processing or seeking additional information on that topic. Research suggests that the more knowledge on which people think their attitudes are based, the more certain they are about the validity of those attitudes (see Rucker, Petty, & Briñol, 2008), and the more certain they are about their current attitudes, the less people believe it is necessary to consider additional information (e.g., Briñol, Petty, Gallardo, & DeMarree, 2007; Horcajo, Petty, & Briñol, 2010).

Despite the importance of subjective knowledge, relatively little research has examined the relationship between objective and subjective knowledge. Although some research suggests that increases in perceived knowledge accompany increases in actual knowledge (e.g., Smith, Fabrigar, MacDougall, & Wiesensthal, 2008), other research shows that people often have a poorly calibrated perception of how knowledgeable they are (Alba & Hutchinson, 2000; Dunning, Heath, & Suls, 2004). Indeed, it is possible to vary perceptions of knowledge about attitude objects in the absence of any real differences in knowledge. For example, in one study (Tormala & Petty, 2007), students were presented with a large or small amount of positive information about one attitude object (e.g., a person) followed by a moderate amount of positive information about a different attitude object (e.g., a store). When the information about the second object was preceded by a small amount of information about the first object, people felt more knowledgeable about the second object than when it was preceded by a large amount of information about the first object (a contrast effect). Importantly, these perceptions of knowledge in the absence of real knowledge differences led to more favorable attitudes in the condition with greater perceived knowledge, in line with a “more is better” heuristic (Petty & Cacioppo, 1984).

Recent research has even suggested that increasing actual knowledge about an attitude object can sometimes lead to *reductions* in perceived knowledge. In this research (Rucker, Lee, & Briñol, 2011), when people’s attention was directed toward the incremental value of new information over the starting point of no knowledge, their perceptions of knowledge increased. However, when attention was directed toward how the new knowledge signaled what else was not known, people showed reduced perceptions of knowledge. Importantly, the extent to which people thought they knew about the attitude object was consequential in terms of processing information relevant to that attitude object. Specifically, the less people thought they knew about the topic, the more processing they did of information relevant to the object.

In closing, we note that perceptions of knowledge can also change as a function of variables unrelated to the presence of new information. For example, in one study (Belding, Briñol, & Petty, 2011), participants were found to feel more knowledgeable and intelligent after they were induced to wear reading glasses versus an item associated with athleticism (i.e., a baseball cap; see also Kellerman & Laird, 1982). Furthermore, participants who were wearing the glasses processed persuasive messages more carefully than participants wearing the cap. Note that this is the opposite effect that perceived knowledge had in the research on processing just described

by Rucker and colleagues (2011). We speculate that when people infer that knowledge means that they are intelligent and *capable* of processing (e.g., when wearing glasses), they are more likely to process information, since it fits their momentary self-conception (see Wheeler, DeMarree, & Petty, 2007), but when people infer that knowledge means that they are already certain of their attitude, then they are less likely to process because acquiring new information seems less necessary in the face of an already correct opinion.

Knowing the Affective versus Cognitive Origins of Attitudes

Just as people can reflect upon how much knowledge underlies their attitudes, they can also think about the nature of that information. One important and classic distinction is whether attitudes are based on emotion or cognition (Breckler, 1984; Zanna & Rempel, 1988). A number of studies have shown that it is possible to determine whether a given attitude is actually based on emotion, cognition, or a combination of the two. This can be done, for example, by seeing whether a global measure of people's attitudes (e.g., how people rate an object as good vs. bad) correlates more highly with their ratings of emotion-relevant qualities (e.g., how happy vs. sad the object makes them feel) or cognitive-relevant qualities (e.g., how useful vs. useless the object seems; see Crites, Fabrigar, & Petty, 1994). The underlying cognitive versus affective structural basis of attitudes has been shown to have important consequences. For example, it is generally more effective to change attitudes based on emotion with emotional messages rather than with more cognitive or rational appeals (Edwards, 1990; Fabrigar & Petty, 1999).

Independent of whether attitudes actually are based on affect or cognition, people's perceptions of the basis of their attitudes can be assessed by asking them about the extent to which they believe that their attitudes are cognitively or affectively based (See, Petty, & Fabrigar, 2008). Importantly, individuals' theories about the affective versus cognitive bases of their attitudes predict persuasion independent of the actual (structural) basis of their attitudes; that is, just as it is generally more effective to use emotional appeals for individuals whose attitudes have an affective structural basis, it is also more effective to use an emotional appeal for individuals who perceive their attitudes to be based on affect, whether or not this is true. Additional research has shown that use of persuasion strategies in line with the actual structural bases of attitudes tends to be more effective when people's responses to the message are spontaneous, such as when they are under time pressure, but use of persuasion strategies in line with perceived bases is more effective when people are being deliberative (See et al., 2008).

Why might people not know the bases of their attitudes? With respect to affective-cognitive bases, past research suggests that when people think about their attitudinal bases, what comes to mind may not be representative of the actual structural content of their attitudes. For instance, in one study (Wilson, Dunn, Bybee, Hyman, & Rotondo, 1984), when participants were asked to examine why they liked or disliked an attitude object, they were able to do so, but attitudes assessed shortly after this did not predict behavior very well. Wilson and colleagues (1984) suggested that this was because the reasons people listed as supporting their attitudes were inaccurate or incomplete. In particular, people often underestimated the role of affect in

determining attitudes. Moreover, even if people are able to identify a representative sample of the bases of their attitudes (both affective and cognitive), they must also be able to gauge the unique contribution of each basis to their global evaluation in order to have an accurate assessment. This is likely to be a difficult task, particularly in cases in which affect and cognition are evaluatively consistent. Thus, true insight into the actual affective versus cognitive basis of many attitudes could be rare.

Knowing the Consequences of Attitudes

Just as people may not know the actual bases of their attitudes, they are often ignorant of the impact of their attitudes. Attitudes have many consequences, such as guiding perception, information processing, and action (Fazio, 1995), but people do not appear to appreciate this sufficiently. For example, people appear to underestimate how much their attitudes bias their thinking and influence their perception of other objects in an attitude-congruent fashion (Greenwald & Banaji, 1995). Nevertheless, people appear to have at least some recognition of which of their attitudes are more consequential than others.

There are a number of indicators of how consequential or *strong* attitudes are (see Petty & Krosnick, 1995). One that we have discussed already is how much knowledge people have, or perceive themselves to have, about an issue (e.g., Wood, Rhodes, & Biek, 1995). Others include how accessible the attitude is (Fazio, 1995) and how much people have thought about their attitudes (Petty, Haugtvedt, & Smith, 1995). As was the case for attitude knowledge and affective–cognitive bases, for virtually every seemingly objective indicator of an attitude's strength, such as the *actual* speed with which it comes to mind or the *actual* amount of thinking in which people have engaged regarding their attitudes, there is a parallel measure of the *perceived* ease of attitude access or the *perceived* extent of thought (Wegener, Downing, Krosnick, & Petty, 1995). People's perceptions of the qualities of their attitudes can show a reasonable correlation with their objective qualities, though the correlation is far from perfect. For example, in one study, when researchers manipulated the extent of thought by using distraction (Petty, Wells, & Brock, 1976) and personal relevance (Petty & Cacioppo, 1979b), these manipulations affected not only the actual extent of thinking as measured by the number of thoughts listed but also the perceived extent of thinking (see Barden & Petty, 2008). However, this knowledge is incomplete because as we see shortly, the perceived qualities of one's attitudes can be affected in the absence of differences in the real qualities.

Perhaps the most studied subjective indicator of how strong or consequential an attitude is involves the confidence or certainty people have in the validity of their attitudes. Attitude confidence is associated with a number of attitude strength consequences (for reviews, see Petty, Briñol, Tormala, & Wegener, 2007; Tormala & Rucker, 2007; Visser & Holbrook, 2012). For example, attitudes that people hold with high certainty are more resistant to change (e.g., Kiesler, 1971), persistent in the absence of a persuasive attack (Bassili, 1996), and more predictive of behavior (Fazio & Zanna, 1978) than attitudes about which there is doubt. Obviously people can report the certainty with which they hold an attitude, since this is a subjective assessment, but their reasons or theories for why they are certain can be inaccurate. Furthermore, certainty can affect how consequential attitudes are for at least two

reasons. First, certainty can make attitudes stronger because the certainty is linked to structural differences in attitudes. For example, attitudes that are thought about more (Barden & Petty, 2008) or that are more accessible (Fazio & Zanna, 1978) are held with greater certainty. If attitudes high in certainty come to mind more readily, they are more able to guide behavior, and thinking about them more helps them resist attack.

Second, attitude certainty can render attitudes more consequential even if the certainty is not tied to any structural differences (Tormala & Petty, 2002). For example, if people are merely led to believe that they have thought a lot about their attitudes (Barden & Petty, 2008) or that they have gained more knowledge supporting their attitudes (Rucker & Petty, 2004; Rucker et al., 2008), they feel more certain. This is important because research shows that attitudes held with greater certainty are more likely to guide behavior, even if these perceptions are not true. Thus, although people can have a sense of which of their many attitudes are consequential (as indexed by certainty), this sense is derived from a combination of verifiable facts (e.g., how much thinking they have actually done) as well as misperceptions (e.g., perceptions of having thought in the absence of real differences). Regardless of the origin, attitude certainty makes attitudes more consequential.

Knowing How to Correct Attitudes for Presumed Biases

In concluding our discussion of people's knowledge about their attitudes, we note that, beginning with Festinger's (1954) classic discussion of social comparison processes, people have been presumed to want to hold subjectively correct attitudes. We have already noted that people typically have good access to their attitudes, but they do not always have good access to the basis of their attitudes. If people do not know what their attitudes are based on, how can they know whether their attitudes are accurate? Festinger proposed that people mostly rely on comparisons with the attitudes of others. To the extent that people agree with others, they can infer that their attitudes are correct. Subsequent research (Goethals & Nelson, 1973) has suggested that people are especially likely to assume validity when the others who agree with their attitudes are similar to them. In matters of fact rather than opinion, however, greater validity comes when dissimilar others agree.

Knowledge about one's attitudes and social consensus do not provide the only cues to validity, however. People also infer validity from numerous other factors, such as how easily their attitudes are retrieved from memory (Haddock, Rothman, Reber, & Schwarz, 1999) or whether their attitudes are perceived to have a moral basis (Wagner, Petty, & Briñol, 2011). Furthermore, if people perceive that there are factors operating that might have biased their attitudes, they take corrective action. These corrections are based on beliefs people have about the magnitude and nature of the bias that has occurred (Petty & Wegener, 1993; Wegener & Petty, 1997; Wilson & Brekke, 1994). If people could accurately diagnose the causes of their attitudes, they could likely correct their attitudes accurately. But since people are often unaware of the real causes of their attitudes, their attempts at correction follow their theories of bias rather than the actual bias that has occurred. Because of this, people sometimes correct for a factor that they believe biased their attitude (since it is consistent with their naive theory of bias) even though it had no effect. In such situations, the factor

perceived as biasing can end up producing a reverse bias (e.g., see Petty, Wegener, & White, 1998). For example, if people overestimate the extent to which attending a funny movie with a date has made them like their date for the evening, and they correct their evaluation of the date based on this overestimate, this could lead them to like the date even less than if they had not attended the funny movie at all.

Knowing about Attitude Change

So far, we have focused on what people know about their attitudes, and the bases and consequences of those attitudes. We turn now to the question of attitude change and address issues such as whether, how, and when people know that their attitudes have been changed, and to what extent people know whether, how, and when they can change their own attitudes and those of others.

Do People Know When Their Attitudes Have Changed?

People like to think they are coherent and may believe that people who change their opinions too easily are wishy-washy. As a consequence, research suggests that when people's attitudes have changed as a result of some manipulation, such as writing a counterattitudinal essay (Bem & McConnell, 1970) or participating in a group discussion (Goethals & Reckman, 1973), they often misremember their prechange attitude as being the same as their current attitude. This distortion implies that people are not aware that their attitudes have changed, but are only aware of their current attitude. Then, people assume that they have always felt this way. Even when people acknowledge that their attitudes have changed to some degree, they may underestimate the extent of that change (Wilson, Houston, & Meyers, 1998).

The fact that people misremember their old attitudes as being consistent with their new ones might help to explain why people also can misremember their past behaviors as being consistent with their newly changed attitudes. In one study (Ross, McFarland, & Fletcher, 1981), for example, when students were given a message in favor of toothbrushing, their current attitudes toward the practice became more positive, and they also reported that they brushed their teeth more 2 weeks earlier than those who had received an anti-toothbrushing message. Thus, not only are prior attitudes misremembered to be consistent with current attitudes, but so also are prior behaviors.

The work on misremembering attitudes and attitude-relevant behavior is consistent with a more general phenomenon in which people misremember aspects of their past to make it seem more like the present. For example, in one study (McFarland & Ross, 1987), participants provided ratings of their dating partner over time, then attempted to recall their initial ratings. A key result was that when the relationship improved over time, people misremembered the relationship as initially being better than it was, and when the relationship became worse over time, people misremembered it as initially being worse than it was (see also Ross, 1989).

In many of the studies on recall of past attitudes, the new attitude that was misremembered was invoked externally by another person and may not have been desired. To our knowledge, there is little research examining perceptions of change

when the change is desired or self-initiated. Perhaps in such situations people would overestimate the extent of change. In a potentially relevant example, Conway and Ross (1984) asked students in a study skills course to evaluate their progress following completion of the course. Although the course was actually ineffective, it looked useful and participants assumed it was. Thus, in this case, they inferred change in the absence of any real change by exaggerating how bad their study skills were before they took the course. This provided the illusion of change in a desired direction; that is, in this case, people presumably wanted better study skills over time and they misremembered the past to bring about this perception. In a somewhat similar way, people have been shown to recall their past selves as inferior to their current selves so that an image of improvement to a currently desired state, rather than a deterioration from the past, is established (see Wilson & Ross, 2003).

Taken together, the various studies suggest that people can err in either direction—seeing no change in their attitudes or themselves when there actually has been change, and seeing some change when there actually has been none (see Schryer & Ross, 2012, for a review). People's inferences about change appear to be guided by not only a need to be consistent (Cialdini, Trost, & Newsome, 1995), but also a need to hold a positive self-view (Baumeister, 1998) and, ideally, one more positive than that in the past. By believing they did not change their attitudes to a counterposition but did become more effective in their study skills or personal habits, people can maintain a self-enhancing view of themselves as becoming better over time.

Knowing the Attitudes We Want to Have

Just as people's current perceptions of themselves (actual self) can differ from the perceptions they want to have (ideal self; see Higgins, 1987; Markus & Nurius, 1986), the attitudes people currently hold about a wide variety of objects, issues, or other people can be different from the attitudes they would like to possess. For example, a dieter might want to like fast food less and vegetables more, whereas an environmentalist might want to like gas-guzzling SUVs less and bicycling more. Stated simply, people know not only the attitudes they already possess but also that they would like to have different attitudes. In a recent review, Maio and Thomas (2007) suggested that discrepancies between actual and desired opinions often exist, and that people appear to engage in strategies that attempt to bring about change toward the desired opinions.

Recently, DeMarree and colleagues (2011) examined whether discrepancies between actual and desired attitudes could be a source of evaluative conflict, and might therefore account for some of the unexplained variance observed repeatedly in subjective ambivalence research (cf. Priester & Petty, 1996). The unpleasant conflict from not having the attitude one wants could serve as the motivation to change it. In a series of studies, participants indicated their current attitudes toward a diverse number of issues and were asked to report whether they wanted to possess an attitude that differed from the one they just reported, and if so, whether they wanted their attitude to be more positive or negative and how much so. A measure of actual-desired attitude discrepancy was created and then used to predict subjective ambivalence. As hypothesized, actual-desired attitude discrepancies predicted feelings of conflict over and above both intrapersonal and interpersonal ambivalence.

The research on actual-ideal attitude discrepancies raises the possibility that people might want to regulate their attitudes in much the same way they regulate other self-aspects. Furthermore, the prevalence of these discrepancies and the robustness of their association with subjective ambivalence might be surprising. After all, people are presumably free to change their evaluations at any moment. That such discrepancies persist suggests limitations on people's ability to control their own evaluations (see also Wheeler et al., 2007). Perhaps especially when attitudes have an affective basis, it is difficult to create desired attitudes. Imagine a person who for all sorts of rational reasons wants to work things out with a spouse. However, because of the difficulty people have in manufacturing needed emotions, some attitudes are not so easy to change. Indeed, if people could choose whom to fall in love with or choose not to be attracted to someone who isn't their spouse, the divorce rate would be a lot lower. Furthermore, social constraints, reality constraints, personality factors, consistency pressures, goal pursuit, and the like, all can make it difficult to adopt desired attitudes, leading to conflict between one's current evaluations and the ones that are most wanted. It might not be possible ever to eliminate such conflict entirely. Instead, as best they can individuals might hold evaluations that are a tradeoff between these various intrapersonal and interpersonal pressures, resulting in evaluative tension that is invoked whenever the attitude is considered.

Knowing How to Persuade

People have their own naive theories of persuasion—what they think works and what they think does not. Schank and Abelson (1977), in their classic treatise on scripts, plans, and goals, suggested that people have a schema detailing the methods that can be used to influence others (called the *persuade package*). In one of the first empirical investigations of people's persuasion schemas, Rule, Bisanz, and Kohn (1985) found that people reported using persuasion tactics for a wide variety of goals, such as changing other people's opinions and getting others to do things for them. People also reported using a wide variety of influence tactics, such as providing facts and evidence; invoking social norms; and using emotion (e.g., crying), flattery, force, and deception.

Subsequent research has shown that the persuasion theories held by men and women are quite similar and that men and women report using the different persuasion tactics in the same order (i.e., simply ask first and use force last; Bisanz & Rule, 1989). However, the persuasion strategy people think they would use can vary with the specific goals of persuaders, as well as their topic-relevant knowledge (Roskos-Ewoldsen, 1997).

Related to the persuasion schema notion, Friestad and Wright (1994, 1995), in their more recent *persuasion knowledge model*, have suggested that through exposure to persuasion over the lifespan, people develop beliefs about how persuasion works (i.e., the mechanisms of persuasion). For example, people have beliefs about the effectiveness and necessity of factors in advertising, such as attending to, trusting, and remembering the advertisement. Research based on this model has suggested that such beliefs can play an important role in how people respond to persuasion attempts. For example, Campbell and Kirmani (2000) found that consumers viewed a salesperson as less sincere when persuasion knowledge was made accessible than when it was

not. Seeing the salesperson as less sincere would presumably make persuasion by that salesperson more difficult.

Not only do people have theories about how to persuade others and the mechanisms of persuasion, but they also have naive theories about how to resist influence. Jacks and Cameron (2003) identified seven resistance strategies that people reported using and found that people were more likely to report using message-related strategies to resist persuasion, such as counterargument, than less socially acceptable strategies, such as source derogation. Furthermore, people reported using different strategies depending on factors such as their issue-relevant knowledge and the importance of the issue.

In addition to their notions of particular strategies of resistance and when they are used, people appear to believe that resistance requires some cognitive effort. This may explain why forewarning people of an impending persuasion attempt leads them to get their guard up (Allyn & Festinger, 1961). In some research, people have engaged in anticipatory counterargument prior to receiving a persuasive message (Petty & Cacioppo, 1979a). In other research (Janssen, Fennis, & Pruyn, 2010), forewarning of persuasion motivated people to conserve their cognitive resources for the upcoming message, and this was reflected in reduced performance on an intermediate self-control task.

Just as metabeliefs about other aspects of attitudes have important cognitive and behavior effects, so too are people's naive theories of resistance consequential. For example, in one study (Rydell, Hugenberg, & McConnell, 2006), people who believed that resistance is good (i.e., implies intelligence) became more certain of the validity of their attitudes following their successful resistance to strong arguments, replicating earlier research (Tormala & Petty, 2002), but people who believed that resistance was bad (i.e., implied closed-mindedness) did not show any increased certainty.

Of course, the possession of theories of persuasion and resistance does not mean that the theories are accurate. There is relatively little work on this topic and what evidence exists presents a mixed picture. For example, some research suggests that people appear to be aware of one tenet of the elaboration likelihood model of persuasion, the notion that people rely on simple cues more than extensive message processing when their motivation or ability to think about a message is reduced (Petty & Cacioppo, 1986). For example, in one study (Vogel, Kutzner, Fiedler, & Freytag, 2010), individuals' naive theories about the simple cue of source attractiveness were investigated. Participants were asked about the extent to which a seller's attractiveness would influence persuasion when the customers were relatively high or low in their motivation or ability to think. Motivation was varied by describing the customers as relatively high or low in their need for cognition (i.e., enjoyment of thinking; Cacioppo & Petty, 1982) and ability was varied by describing the customers as being under time pressure to make a decision or not (e.g., Kruglanski & Webster, 1996). The participants reported that a salesperson's attractiveness would impact persuasion primarily when both motivation and ability to think were low. In other research, people were found to believe generally that individuals who do not like to think are more susceptible to a variety of simple cues used in advertising than are those who like to think (Douglas, Sutton, & Stathi, 2010).

These naive theories about the use of attractiveness and other simple cues appear to be accurate, in that they fit the available data well about how and when people

actually respond to simple cues (e.g., Haugtvedt, Petty, & Cacioppo, 1992). Most importantly, perhaps, people use their naive theories of persuasion to guide their own actions. For example, in a series of studies, Vogel and colleagues (2010) found that not only did attractive individuals believe that they were more likely to be effective in influencing people who did not enjoy thinking compared to those who did, but they also were more likely to select customers described as low in motivation to think versus customers described as relatively high in motivation to think.

Although this research suggests that people have some persuasion-relevant knowledge that fits actual findings, other research suggests that people are not always well tuned to the type of appeal that would effectively influence them. For example, in one study (Wilson et al., 1998), students were asked to select one of two messages based on which would influence them the least. The two choices were an explicit speech against their attitudes or a subliminal message. Although the explicit speech was far more effective in producing actual attitude change than the subliminal communication, 69% of the participants chose the speech over the subliminal tape, mistakenly believing that the latter would have the more powerful effect. Additional analyses suggested that people believed that the speech would be easy to counterargue and they selected it for that reason. With respect to the method of resisting persuasion, Jacks and Cameron (2003) found that although people believed that both counterarguing and attitude bolstering would help them resist, and they used both, only the former strategy actually was effective.

In summary, people have naive theories regarding both persuasion and resistance, and those theories, though not completely accurate, can guide how people interact with others. Less research has addressed people's theories about the ways in which they might go about persuading themselves when change is desired. Though not investigating particular strategies of change, some research has examined people's theories about the effort required to produce change in the self versus others (Briñol, McCaslin, & Petty, *in press*). This research assumes that people hold the reasonable belief that persuading oneself is more difficult when the topic is counterattitudinal rather than proattitudinal, and that people further believe they know their own opinions better than they know the opinions of others (*cf.* Dunning et al., 2004). Because of this, when the topic of the persuasion task is counterattitudinal, people invest more effort in a message designed to persuade themselves than to persuade another person because they are sure they are opposed but less sure of the opposition of the other. The reverse is the case when the message is proattitudinal. Here, people invest less effort in the message designed to persuade themselves than to persuade another person because they are less sure that the other person agrees already. The extent of actual self-persuasion follows the effort expended in the persuasion task.

Prior research has clearly shown that when people were asked to generate a message with the goal of persuading another person, they themselves often were incidentally changed in the process (e.g., see Janis & King, 1954). The more recent research by Briñol and colleagues (*in press*) shows that because of people's naive theories about how much effort is necessary to persuade themselves versus another person, depending on the message topic, self-persuasion can be greater if the intended target of the self-generated message is the self rather than another person when the persuasion task is a counterattitudinal one. However, the opposite holds if the task is proattitudinal.

Knowing How Persuadable or Resistant We Are

We have just noted that people have naive theories about what causes persuasion and resistance, and they also have some notion of how much effort might be required to bring about persuasion. This suggests that people have ideas about their own persuadability—how easy or difficult they are to persuade. To provide an explicit exploration of people's theories about their own influenceability, Briñol, Rucker, Torrala, and Petty (2004) developed a Resistance to Persuasion Scale (RPS). The scale contains statements such as "It is hard for me to change my ideas," to which people report the extent of their agreement. Research using the scale has shown that beliefs about resistance to persuasion are consequential for attitude change.

In two studies Briñol and colleagues (2004) predicted and found that individuals exhibited attitude change consistent with their perceptions about their own persuadability when they were not very motivated to think (i.e., were low in need for cognition; Cacioppo & Petty, 1982). Interestingly, when the likelihood of thinking was high (i.e., high need for cognition), they appeared to correct for their persuadability beliefs. Specifically, among low-thinking participants, individuals who believed that they were generally resistant to persuasion showed less attitude change when exposed to various messages than did individuals who believed that they were generally susceptible to persuasion. However, participants high in thinking showed a tendency for a reverse effect, demonstrating more persuasion when they thought they were difficult to persuade. Under high-thinking conditions, people appeared to treat their presumed tendency to be persuaded or resistant as a bias for which they needed to correct by acting in an opposite way. The fact that people correct for bias under high-but not low-thinking conditions is consistent with much other research on correction processes, showing that correction typically requires high thinking and occurs when people become aware of an unwanted influence on their judgments (e.g., see DeSteno, Petty, Rucker, Wegener, & Braverman, 2004; Petty, DeMarree, Briñol, Horcajo, & Strathman, 2008).

Importantly, even two individuals who see themselves as equivalent in resistance to change may believe that they resist influence through very different means. The Bolster-Counterargue Scale (BCS; Briñol et al., 2004) was developed to assess individuals' beliefs about *how* they resist influence. An example item geared toward those who prefer to counterargue is "I take pleasure in arguing with those who have opinions that differ from my own." An item geared toward those who prefer to bolster is "When someone gives me a point of view that conflicts with my attitudes, I like to think about why my views are right for me."

In a study designed to examine the impact of people's perceptions of the strategies they use to resist persuasion, Briñol and colleagues (2004) found that scores on the Bolstering subscale were positively correlated with the number of bolstering thoughts, whereas the Counterarguing subscale was positively correlated with the number of counterarguments generated (but not vice versa). Thus, the spontaneous generation of each type of cognitive response when trying to resist a message can vary from one individual to another, and the BCS seems useful for assessing these individual differences. The predictive utility of the scale, of course, suggests that people have some insight into the strategies they use to resist persuasive messages.

Other lines of research on individual differences suggest that the beliefs people have about their own abilities to defend their attitudes are also consequential in terms

of influencing information exposure. For example, according to research on *defensive confidence* by Albarracín and Mitchell (2004), the beliefs people have about their ability to defend their attitudes moderate their approach to attitude-consistent information. Specifically, individuals who feel confident in their ability to defend their beliefs pay more attention to information that threatens their beliefs than individuals who do not feel confident in their ability to defend their abilities.

Summary and Conclusions

In this chapter we have described research regarding what people know about their attitudes, the qualities of their attitudes, what their attitudes do, and whether and how their attitudes can be changed. In the first part of the chapter, we discussed how people generally know what their attitudes are (i.e., whether they like or dislike some attitude object) but sometimes have automatic evaluative reactions that they do not endorse. Furthermore, consistent with literature in other domains, people are generally less aware of *why* they hold the attitudes they do. In particular, the available research has shown that what people actually know about the bases of their attitudes and what they think they know can be two very different things. For example, although people sometimes have good insight into some qualities of their attitudes (e.g., how much thinking they have done), at other times the correlations between objective assessments and subjective assessments hover around zero (e.g., regarding the affective or cognitive bases of attitudes). We also noted that people can acknowledge having evaluative conflict around some issues (explicit ambivalence) but do not acknowledge being conflicted about other issues, though discomfort nevertheless exists (implicit ambivalence). Regardless of whether ambivalence is explicit or implicit, both forms of conflict have important implications for information processing and attitude change.

In the second part of the chapter we described how people sometimes change their attitudes without realizing it, whereas at other times they think they have changed when in fact they have not. Furthermore, sometimes people change without wanting to, whereas other times they try to change intentionally. Of course, just wanting to change does not guarantee that people can change to attain more desired attitudes. We also noted that people have beliefs about how persuasion works, their own persuadability and resistance to change, and they have ideas about how persuasion and resistance are accomplished.

Although people's theories and feelings about their attitudes and susceptibility to change are not always grounded in reality, they can nonetheless be consequential. For example, with respect to the bases of their attitudes, we have seen that (1) feeling conflicted about an attitude or thinking that it is based on little knowledge leads people to be more attentive to attitude-relevant information even if they don't fully understand the basis of the conflict or have an accurate assessment of their amount of knowledge; (2) targeting a message to what people believe their attitude is based on (affect or cognition) can be effective in modifying the attitude, even if the attitude is not really based on that factor; (3) if people come to believe that their attitudes are based on much thought, they are more likely to act on those attitudes, even if that perception has no real basis; and (4) people correct their attitudes for biases they believe have occurred rather than the biases that have actually occurred.

With respect to attitude change, we have seen that people don't always know when their attitudes have changed, and they have theories on how to bring change about in themselves and others. They also have theories about how to resist persuasion. Understanding these theories is important because people act on their theories even if their theories are incorrect. One might imagine that if people became persuasion experts and were aware of the relevant literature on how persuasion works, they could bring about optimal outcomes. However, because social-psychological knowledge on persuasion is aimed at understanding people in general, even the most astute persuasion scholar would not have completely accurate information about him- or herself. Nevertheless, such knowledge is likely to provide a useful guide for suggesting self-relevant hypotheses in everyday life.

REFERENCES

- Alba, J. W., & Hutchinson W. (2000). Knowledge calibration: What consumers know and what they think they know. *Journal of Consumer Research*, 22, 62–74.
- Albarracín, D., & Mitchell, A. L. (2004). The role of defensive confidence in preference for proattitudinal information: How believing that one is strong can be a weakness. *Personality and Social Psychology Bulletin*, 30, 1565–1584.
- Allyn, J., & Festinger, L. (1961). The effectiveness of unanticipated persuasive communication. *Journal of Abnormal and Social Psychology*, 62, 35–40.
- Armitage, C. J., & Conner, M. (2000). Attitudinal ambivalence: A test of three key hypotheses. *Personality and Social Psychology Bulletin*, 26, 1421–1432.
- Barden, J., & Petty, R. E. (2008). The mere perception of elaboration creates attitude certainty: Exploring the thoughtfulness heuristic. *Journal of Personality and Social Psychology*, 95, 489–509.
- Bargh, J. A., Chaiken, S., Govender, R., & Pratto, F. (1992). The generality of the automatic attitude activation effect. *Journal of Personality and Social Psychology*, 62, 893–913.
- Bargh, J. A., Chaiken, S., Raymond, P., & Hymes, C. (1996). The automatic evaluation effect: Unconditional automatic attitude activation with a pronunciation task. *Journal of Experimental Social Psychology*, 32, 104–128.
- Bassili, J. N. (1996). Meta-judgmental versus operative indices of psychological properties: The case of measures of attitude strength. *Journal of Personality and Social Psychology*, 71, 637–653.
- Baumeister, R. F. (1998). The self. In D. Gilbert, S. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., Vol. 2, pp. 680–740). New York: McGraw-Hill.
- Belding, J., Briñol, P., & Petty, R. E. (2011). *Priming through embodiment: External objects influence information processing and attitudes*. Unpublished manuscript, Ohio State University.
- Bem, D. J., & McConnell, H. K. (1970). Testing the self-perception explanation of dissonance phenomena: On the salience of premanipulation attitudes. *Journal of Personality and Social Psychology*, 14, 23–31.
- Bisanz, G. L., & Rule, B. G. (1989). Gender and the persuasion schema: A search for cognitive invariants. *Personality and Social Psychology Bulletin*, 15, 4–18.
- Breckler, S. J. (1984). Empirical validation of affect, behavior, and cognition as distinct components of attitudes. *Journal of Personality and Social Psychology*, 47, 1191–1205.
- Briñol, P., McCaslin, M. J., & Petty, R. E. (in press). Self-generated persuasion: Effects of the target and direction of arguments. *Journal of Personality and Social Psychology*.
- Briñol, P., Petty, R. E., Gallardo, I., & DeMarree, K. G. (2007). The effects of self-affirmation

- in non-threatening persuasion domains: Timing affects the process. *Personality and Social Psychology Bulletin*, 33, 1533–1546.
- Briñol, P., Petty, R. E., & Wheeler, S. C. (2006). Discrepancies between explicit and implicit self-concepts: Consequences for information processing. *Journal of Personality and Social Psychology*, 91, 154–170.
- Briñol, P., Rucker, D. D., Tormala, Z. L., & Petty, R. E. (2004). Individual differences in resistance to persuasion: The role of beliefs and meta-beliefs. In E. S. Knowles & J. A. Linn (Eds.), *Resistance and persuasion* (pp. 83–104). Mahwah, NJ: Erlbaum.
- Brucks, M. (1985). The effects of product class knowledge on information search behavior. *Journal of Consumer Research*, 12, 1–16.
- Cacioppo, J. T., & Petty, R. E. (1982). The need for cognition. *Journal of Personality and Social Psychology*, 42, 116–131.
- Campbell, M. C., & Kirmani, A. (2000). Consumers' use of persuasion knowledge: The effects of accessibility and cognitive capacity on perceptions of an influence agent. *Journal of Consumer Research*, 27, 69–83.
- Cialdini, R. B., Trost, M. R., & Newsome, J. T. (1995). Preference for consistency: The development of a valid measure and the discovery of surprising behavioral implications. *Journal of Personality and Social Psychology*, 69, 318–328.
- Clark, J. K., Wegener, D. T., & Fabrigar, L. R. (2008). Attitudinal ambivalence and message-based persuasion: Motivated processing of proattitudinal information and avoidance of counterattitudinal information. *Personality and Social Psychology Bulletin*, 34, 565–577.
- Conway, M., & Ross, M. (1984). Getting what you want by revising what you had. *Journal of Personality and Social Psychology*, 47, 738–748.
- Crites, S., Fabrigar, L., & Petty, R. E. (1994). Measuring the affective and cognitive properties of attitudes: Conceptual and methodological issues. *Personality and Social Psychology Bulletin*, 20, 619–634.
- DeCoster, J., Banner, M. J., Smith, E. R., & Semin, G. R. (2006). On the inexplicability of the implicit: Differences in the information provided by implicit and explicit tests. *Social Cognition*, 24, 5–21.
- DeMarree, K. G., Wheeler, C., Briñol, P., & Petty, R. E. (2011). *Wanting other attitudes: Actual-desired attitude discrepancies predict feelings of ambivalence*. Unpublished manuscript, Ohio State University.
- DeSteno, D., Petty, R. E., Rucker, D. D., Wegener, D. T., & Braverman, J. (2004). Discrete emotions and persuasion: The role of emotion-induced expectancies. *Journal of Personality and Social Psychology*, 86, 43–56.
- Dijksterhuis, A., Albers, L. W., & Bongers, K. C. A. (2009). Digging for the real attitude: Lessons from research on implicit and explicit self-esteem. In R. E. Petty, R. H. Fazio, & P. Briñol (Eds.), *Attitudes: Insights from the new implicit measures* (pp. 229–250). New York: Psychology Press.
- Douglas, K. M., Sutton, R. M., & Stathi, S. (2010). Why I am persuaded less than you: People's intuitive understanding of the psychology of persuasion. *Social Influence*, 5, 133–148.
- Dovidio, J. F., Kawakami, K., Johnson, C., Johnson, B., & Howard, A. (1997). The nature of prejudice: Automatic and controlled processes. *Journal of Experimental Social Psychology*, 33, 510–540.
- Dunning, D., Heath, C., & Suls, J. M. (2004). Flawed self-assessment: Implications for health, education, and the workplace. *Psychological Science in the Public Interest*, 5, 69–106.
- Edwards, K. (1990). The interplay of affect and cognition in attitude formation and change. *Journal of Personality and Social Psychology*, 59, 202–216.
- Epstein, S. (2003). Cognitive-experiential self-theory of personality. In T. Millon & M. Lerner

- (Eds.), *Handbook of psychology: Personality and social psychology* (Vol. 5, pp. 159–184). Hoboken, NJ: Wiley.
- Fabrigar, L. R., & Petty, R. E. (1999). The role of the affective and cognitive bases of attitudes in susceptibility to affectively and cognitively based persuasion. *Personality and Social Psychology Bulletin*, 25, 363–381.
- Fazio, R. H. (1995). Attitudes as object-evaluation associations: Determinants, consequences, and correlates of attitude accessibility. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 247–282). Mahwah, NJ: Erlbaum.
- Fazio, R. H., Jackson, J. R., Dunton, B. C., & Williams, C. J. (1995). Variability in automatic activation as an unobtrusive measure of racial attitudes: A bona fide pipeline? *Journal of Personality and Social Psychology*, 69, 1013–1027.
- Fazio, R. H., Sanbonmatsu, D. M., Powell, M. C., & Kardes, F. R. (1986). On the automatic activation of attitudes. *Journal of Personality and Social Psychology*, 50, 229–238.
- Fazio, R. H., & Zanna, M. P. (1978). Attitudinal qualities relating to the strength of the attitude-behavior relationship. *Journal of Experimental Social Psychology*, 14, 398–408.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7, 117–140.
- Fox, M. C., Ericsson, K. A., & Best, R. (2011). Do procedures for verbal reporting of thinking have to be reactive?: A meta-analysis and recommendations for best reporting methods. *Psychological Bulletin*, 137, 316–344.
- Friestad, M., & Wright, P. (1994). The Persuasion Knowledge Model: How people cope with persuasion attempts. *Journal of Consumer Research*, 21, 1–31.
- Friestad, M., & Wright, P. (1995). Persuasion knowledge: Lay peoples and researchers beliefs about the psychology of advertising. *Journal of Consumer Research*, 22, 62–74.
- Gawronski, B., & Bodenhausen, G. V. (2006). Associative and propositional processes in evaluation: An integrative review of implicit and explicit attitude change. *Psychological Bulletin*, 132, 692–731.
- Goethals, G. & Nelson, R. E. (1973). Similarity in the influence process: The belief-value distinction. *Journal of Personality and Social Psychology*, 25, 117–122.
- Goethals, G. R., & Reckman, R. F. (1973). The perception of consistency in attitudes. *Journal of Experimental Social Psychology*, 9, 491–501.
- Greenwald, A. G., & Banaji, M. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, 102, 4–27.
- Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology*, 74, 1464–1480.
- Greenwald, A. G., Poehlman, T. A., Uhlmann, E. L., & Banaji, M. R. (2009). Understanding and using the Implicit Association Test: III. Meta-analysis of predictive validity. *Journal of Personality and Social Psychology*, 97, 17–41.
- Haddock, G., Rothman, A. J., Reber, R., & Schwarz, N. (1999). Forming judgments of attitude certainty, intensity, and importance: The role of subjective experiences. *Personality and Social Psychology Bulletin*, 25, 771–782.
- Hagtvedt, C. P., Petty, R. E., & Cacioppo, J. T. (1992). Need for cognition and advertising: Understanding the role of personality variables in consumer behavior. *Journal of Consumer Psychology*, 1, 239–260.
- Heider, F. (1958). *The psychology of interpersonal relations*. New York: Wiley.
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review*, 94, 319–340.
- Horcajo, J., Petty, R. E., & Briñol, P. (2010). The effects of majority versus minority source status on persuasion: A self-validation analysis. *Journal of Personality and Social Psychology*, 99, 498–512.

- Jacks, J. Z., & Cameron, K. A. (2003). Strategies of resisting persuasion. *Basic and Applied Social Psychology*, 25, 145–161.
- Janis, I. L., & King, B. T. (1954). The influence of role-playing on opinion change. *Journal of Abnormal and Social Psychology*, 49, 211–218.
- Janssen, L., Fennis, B. M., & Pruyn, A. T. H. (2010). Forewarned is forearmed: Conserving self-control strength to resist social influence. *Journal of Experimental Social Psychology*, 46, 911–921.
- Jarvis, W. B. G., & Petty, R. E. (1996). The need to evaluate. *Journal of Personality and Social Psychology*, 70, 172–194.
- Jordan, C. H., Whitfield, M., & Zeigler-Hill, V. (2007). Intuition and the correspondence between implicit and explicit self-esteem. *Journal of Personality and Social Psychology*, 93, 1067–1079.
- Kaplan, K. J. (1972). On the ambivalence–indifference problem in attitude theory and measurement: A suggested modification of the semantic differential technique. *Psychological Bulletin*, 77, 361–372.
- Kellerman, J., & Laird, J. D. (1982). The effect of appearance on self-perceptions. *Journal of Personality*, 50, 296–315.
- Kiesler, C. A. (1971). *The psychology of commitment: Experiments linking behavior to beliefs*. New York: Academic Press.
- Kruglanski, A. W., & Webster, D. M., (1996). Motivated closing of the mind: Seizing and freezing. *Psychological Review*, 103, 263–283.
- Loersch, C., McCaslin, M., & Petty, R. E. (2011). Exploring the impact of social judgeability concerns on the interplay of associative and deliberative attitude processes. *Journal of Experimental Social Psychology*, 47, 1029–1032.
- Maio, G. R., Bell, D. E., & Esses, V. M. (1996). Ambivalence and persuasion: The processing of messages about immigrant groups. *Journal of Experimental Social Psychology*, 32, 513–536.
- Maio, G. R., & Thomas, G. (2007). The epistemic–teleological model of self persuasion. *Personality and Social Psychology Review*, 11, 1–22.
- Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, 41, 954–969.
- McFarland, C., & Ross, M. (1987). The relation between current impressions and memories of self and dating partners. *Personality and Social Psychology Bulletin*, 13, 228–238.
- Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review*, 84, 231–259.
- Olson, M. A., & Fazio, R. H. (2003). Relations between implicit measures of racial prejudice: What are we measuring? *Psychological Science*, 14, 636–639.
- Olson, M. A., & Fazio, R. H. (2009). Implicit and explicit measures of attitudes: The perspective of the MODE model. In R. E. Petty, R. H. Fazio, & P. Briñol (Eds.), *Attitudes: Insights from the new implicit measures* (pp. 19–64). New York: Psychology Press.
- Petty, R. E., & Briñol, P. (2006). A meta-cognitive approach to “implicit” and “explicit” evaluations: Comment on Gawronski and Bodenhausen (2006). *Psychological Bulletin*, 132, 740–744.
- Petty, R. E., & Briñol, P. (2009). Implicit ambivalence: A meta-cognitive approach. In R. E. Petty, R. H. Fazio, & P. Briñol (Eds.), *Attitudes: Insights from the new implicit measures* (pp. 119–161). New York: Psychology Press.
- Petty, R. E., Briñol, P., & DeMarree, K. G. (2007). The meta-cognitive model (MCM) of attitudes: Implications for attitude measurement, change, and strength. *Social Cognition*, 25, 657–686.
- Petty, R. E., Briñol, P., Tormala, Z. L., & Wegener, D. T. (2007). The role of metacognition in social judgment. In E. T. Higgins & A. W. Kruglanski, (Eds.), *Social psychology: A handbook of basic principles* (2nd ed., pp. 254–284). New York: Guilford Press.

- Petty, R. E., & Cacioppo, J. T. (1979a). Effects of forewarning of persuasive intent on cognitive responses and persuasion. *Personality and Social Psychology Bulletin*, 5, 173–176.
- Petty, R. E., & Cacioppo, J. T. (1979b). Issue-involvement can increase or decrease persuasion by enhancing message-relevant cognitive responses. *Journal of Personality and Social Psychology*, 37, 1915–1926.
- Petty, R. E., & Cacioppo, J. T. (1984). The effects of involvement on responses to argument quantity and quality: Central and peripheral routes to persuasion. *Journal of Personality and Social Psychology*, 46, 69–81.
- Petty, R. E., & Cacioppo, J. T. (1986). *Communication and persuasion: Central and peripheral routes to attitude change*. New York: Springer-Verlag.
- Petty, R. E., DeMarree, K. G., Briñol, P., Horcajo, J., & Strathman, A. J. (2008). Need for cognition can magnify or attenuate priming effects in social judgment. *Personality and Social Psychology Bulletin*, 34, 900–912.
- Petty, R. E., Fazio, R. H., & Briñol, P. (2009). The new implicit measures: An overview. In R. E. Petty, R. H. Fazio, & P. Briñol (Eds.), *Attitudes: Insights from the new implicit measures* (pp. 3–18). New York: Psychology Press.
- Petty, R. E., Haugtvedt, C., & Smith, S. M. (1995). Elaboration as a determinant of attitude strength: Creating attitudes that are persistent, resistant, and predictive of behavior. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 93–130). Mahwah, NJ: Erlbaum.
- Petty, R. E., & Krosnick, J. A. (Eds.). (1995). *Attitude strength: Antecedents and consequences*. Mahwah, NJ: Erlbaum.
- Petty, R. E., Tormala, Z. L., Briñol, P., & Jarvis, W. B. G. (2006). Implicit ambivalence from attitude change: An exploration of the PAST model. *Journal of Personality and Social Psychology*, 90, 21–41.
- Petty, R. E., & Wegener, D. T. (1993). Flexible correction processes in social judgment: Correcting for context-induced contrast. *Journal of Experimental Social Psychology*, 29, 137–165.
- Petty, R. E., Wegener, D. T., & White, P. (1998). Flexible correction processes in social judgment: Implications for persuasion. *Social Cognition*, 16, 93–113.
- Petty, R. E., Wells, G. L., & Brock, T. C. (1976). Distraction can enhance or reduce yielding to propaganda: Thought disruption versus effort justification. *Journal of Personality and Social Psychology*, 34, 874–884.
- Priester, J. M., & Petty, R. E. (1996). The gradual threshold model of ambivalence: Relating the positive and negative bases of attitudes to subjective ambivalence. *Journal of Personality and Social Psychology*, 71, 431–449.
- Priester, J. R., Petty, R. E., & Park, K. (2007). Whence univalent ambivalence: From the anticipation of conflicting reactions. *Journal of Consumer Research*, 34, 11–21.
- Priester, J. R., & Petty, R. E. (2001). Extending the bases of subjective attitudinal ambivalence: Interpersonal and intrapersonal antecedents of evaluative tension. *Journal of Personality and Social Psychology*, 80, 19–34.
- Radecki, C. M., & Jaccard, J. (1995). Perceptions of knowledge, actual knowledge and information search behavior. *Journal of Experimental Social Psychology*, 31, 107–138.
- Ranganath, K. A., Smith, C. T., & Nosek, B. A. (2008). Distinguishing automatic and controlled components of attitudes from direct and indirect measurement methods. *Journal of Experimental Social Psychology*, 44, 386–396.
- Roskos-Ewoldsen, D. R. (1997). Implicit theories of persuasion. *Human Communication Research*, 24, 31–63.
- Ross, M. (1989). The relation of implicit theories to the construction of personal histories. *Psychological Review*, 96, 341–357.

- Ross, M., McFarland, C., & Fletcher, G. J. (1981). The effect of attitude on the recall of personal histories. *Journal of Personality and Social Psychology*, 40, 627–634.
- Rucker, D. D., Lee, A., & Briñol, P. (2011). *The aftermath of information acquisition: Sometimes knowing more feels like knowing less*. Unpublished manuscript, Northwestern University.
- Rucker, D. D., & Petty, R. E. (2004). When resistance is futile: Consequences of failed counterarguing on attitude certainty. *Journal of Personality and Social Psychology*, 86, 219–235.
- Rucker, D. D., Petty, R. E., & Briñol, P. (2008). What's in a frame anyway?: A meta-cognitive analysis of the impact of one versus two sided message framing on attitude certainty. *Journal of Consumer Psychology*, 18, 137–149.
- Rule, B., Bisanz, G., & Kohn, M. (1985). Anatomy of persuasion schema: Targets, goals, and strategies. *Journal of Personality and Social Psychology*, 48, 1127–1140.
- Rydell, R. J., Hugenberg, K., & McConnell, A. R. (2006). Resistance can be good or bad: How theories of resistance and dissonance affect attitude certainty. *Personality and Social Psychology Bulletin*, 32, 740–750.
- Rydell, R. J., & McConnell, A. R. (2006). Understanding implicit and explicit attitude change: A systems of reasoning analysis. *Journal of Personality and Social Psychology*, 91, 995–1008.
- Rydell, R. J., McConnell, A. R., & Mackie, D. M. (2008). Consequences of discrepant explicit and implicit attitudes: Cognitive dissonance and increased information processing. *Journal of Experimental Social Psychology*, 44, 1526–1532.
- Rydell, R. J., McConnell, A. R., Mackie, D. M., & Strain, L. M. (2006). Of two minds: Forming and changing valence-inconsistent implicit and explicit attitudes. *Psychological Science*, 17, 954–958.
- Schank, R. C., & Abelson, R. P. (1977). *Scripts, plans, goals, and understanding: An inquiry into human knowledge structures*. Hillsdale, NJ: Erlbaum.
- Schryer, E., & Ross, M. (2012). People's thoughts about their personal past and futures. In P. Briñol & K. G. DeMarree (Eds.), *Social metacognition* (pp. 141–158). New York: Psychology Press.
- See, Y. H. M., Petty, R. E., & Fabrigar, L. R. (2008). Affective and cognitive meta-bases of attitudes: Unique effects on information interest and persuasion. *Journal of Personality and Social Psychology*, 94, 938–955.
- Smith, S. M., Fabrigar, L. R., MacDougall, B. L., & Wiesenahl, N. L. (2008). The role of amount, cognitive elaboration, and structural consistency of attitude-relevant knowledge in the formation of attitude certainty. *European Journal of Social Psychology*, 38, 280–295.
- Sparks, P., Harris, P. R., & Lockwood, N. (2004). Predictors and predictive effects of ambivalence. *British Journal of Social Psychology*, 43, 371–383.
- Thompson, M. M., Zanna, M. P., & Griffin, D. W. (1995). Let's not be indifferent about (attitudinal) ambivalence. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 361–386). Hillsdale, NJ: Erlbaum.
- Tormala, Z. L., & Petty, R. E. (2002). What doesn't kill me makes me stronger: The effects of resisting persuasion on attitude certainty. *Journal of Personality and Social Psychology*, 83, 1298–1313.
- Tormala, Z. L., & Petty, R. E. (2007). Contextual contrast and perceived knowledge: Exploring the implications for persuasion. *Journal of Experimental Social Psychology*, 43, 17–30.
- Tormala, Z. L., & Rucker, D. D. (2007). Attitude certainty: A review of past findings and emerging perspectives. *Social and Personality Psychology Compass*, 1, 469–492.

- van Harreveld, F., van der Pligt, J., & de Liver, Y. N. (2009). The agony of ambivalence and ways to resolve it: Introducing the MAID model. *Personality and Social Psychology Review*, 13, 45–61.
- Visser, P. S., & Holbrook, A. L. (2012). Metacognitive determinants of attitude strength. In P. Briñol & K. G. DeMarree (Eds.), *Social metacognition* (pp. 21–42). New York: Psychology Press.
- Vogel, T., Kutzner, F., Fiedler, K., & Freytag, P. (2010). Exploiting attractiveness in persuasion: Senders' implicit theories about receivers' processing motivation. *Personality and Social Psychology Bulletin*, 36, 830–842.
- Wagner, B. C., Petty, R. E., & Briñol, P. (2011). *Are morally-based attitudes particularly strong?: The impact of moral attitudinal basis on attitude strength indicators and consequences*. Unpublished manuscript, Ohio State University.
- Wegener, D. T., Downing, J., Krosnick, J. A., & Petty, R. E. (1995). Measures and manipulations of strength related properties of attitudes: Current practice and future directions. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 455–488). Mahwah, NJ: Erlbaum.
- 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). Mahwah, NJ: Erlbaum.
- Wheeler, S. C., DeMarree, K. G., & Petty, R. E. (2007). Understanding the role of the self in prime-to-behavior effects: The active self account. *Personality and Social Psychology Review*, 11, 234–261.
- Wilson, A. E., & Ross, M. (2003). Autobiographical memory and self-identity. *Memory*, 11, 137–149.
- Wilson, T. D., & Brekke, N. (1994). Mental contamination and mental correction: Unwanted influences on judgments and evaluations. *Psychological Bulletin*, 116, 117–142.
- 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., & Hodges, S. D. (1992). Attitudes as temporary constructions. In L. L. Martin & A. Tesser (Eds.), *The construction of social judgments* (pp. 37–65). Hillsdale, NJ: Erlbaum.
- Wilson, T. D., Houston, C. E., & Meyers, J. M. (1998). Choose your poison: Effects of lay beliefs about mental processes on attitude change. *Social Cognition*, 16, 114–132.
- Wilson, T. D., Lindsey, S., & Schooler, T. Y. (2000). A model of dual attitudes. *Psychological Review*, 107, 101–126.
- Wood, W., Rhodes, N., & Biek, M. (1995). Working knowledge and attitude strength: An information processing analysis. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 283–314). Hillsdale, NJ: Erlbaum.
- Zanna, M. P., & Rempel, J. K. (1988). Attitudes: A new look at an old concept. In D. Bar-Tal & A. W. Kruglanski (Eds.), *The social psychology of knowledge* (pp. 315–334). Cambridge, UK: Cambridge University Press.