A Historical View on Attitudes and Persuasion 🔓

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Summary and Keywords

The history of attitudes research can be organized into three main sections covering attitude definition and measurement, attitude-behavior relationships, and attitude change. First, an evaluation of the history of attitude measurement reveals three relatively distinct phases: an early phase in which the classic direct self-report procedures were developed, a middle phase focused on "indirect" assessment devices, and a modern phase in which various measures designed to capture people's automatic or "implicit" attitudes have flourished. Second, the history of attitude-behavior correspondence can be organized also around three broad themes: an early period in which the presumed close association between attitudes and behaviors was largely an article of faith; a middle period in which some researchers concluded that little, if any, relationship existed between measures of attitudes and overt behaviors; and a more recent period in which the resolution of prior issues stimulated an explosion of research focused on identifying the moderators and psychological mechanisms responsible for attitude-behavior correspondence. Finally, the history of research and ideas regarding attitude change and persuasion can be organized around several prominent theories focused on distinct single processes, dual processes, or multiple processes, each of which are still used by contemporary attitudes researchers.

Keywords: attitudes, persuasion, history, attitude measurement, attitude-behavior correspondence, dual process models, single process models

This article presents the history of attitudes and persuasion research as the history of the key topics and research ideas that have permeated the field of social psychology (see also Briñol & Petty, 2012). At first, the ideas were somewhat isolated from one another and focused on particular phenomena; but over time there has been a convergence into grander and more comprehensive theories. After providing a brief overview of the attitude construct itself, the focus shifts to a discussion of the field in three sections covering attitude definition and measurement, attitude-behavior relationships, and attitude change. The core focus of the article is on a discussion of the history of attitude-change research given the breadth and scope of ideas generated in the domain of persuasion. The key insights regarding each of these major sections are presented mostly in chronological order so that it is easier to see how researchers have built upon earlier contributions.

Attitudes and Their Assessment

Definition of Attitudes

Over the last 125 years, attitudes have generated great interest in the social sciences because of the enduring belief that they exert a strong influence on behaviors, decisions, and judgments. Indeed, in the early stages of the 20th century, some researchers viewed attitudes as essential to understanding social change (Thomas & Znaniecki, 1918). Others declared attitudes to be the single most indispensable concept in social psychology (Allport, 1935). Attitudes were originally defined as a readiness to respond to the world or a person's physical orientation or posture (e.g., Galton, 1884). Although definitions of attitude have varied over time (Fleming, 1967), it is still common to ask for a person's *position* or *stance* on an issue, though the meaning refers to an evaluative rather than a physical orientation. In some cases attitudes have been described as hypothetical constructs, but in other cases as real (e.g., Krosnick, Judd, & Wittenbrink, 2005). Likewise, attitudes have been conceptualized as stored in memory (e.g., Fazio, 1995), as well as contextualized responses constructed on the spot when needed (e.g., Schwarz & Bohner, 2001; Wilson & Hodges, 1992), though most theorists favor the former position, at least for strong attitudes (Petty, Briñol, Fabrigar, & Wegener, 2019). Attitudes have been assumed to be conscious and unconscious (e.g., Greenwald & Banaji, 1995), genetically based, as well as a product of the environment (e.g., Albarracín & Vargas, 2010). Despite these differences, one common feature across each of these variations is that attitudes were assumed to have an *evaluative* component. Indeed, most contemporary researchers have come to view an attitude as a relatively general and enduring evaluation people have regarding people (including oneself), places, objects, and issues (e.g., chocolate is good; I dislike high taxes) along a positive to negative continuum (e.g., Eagly & Chaiken, 1993; Fabrigar & Wegener, 2010; Petty, Briñol, & DeMarree, 2007).

A wealth of empirical research has shown that attitudes can vary in a number of important ways. As just noted, the defining way in which attitudes can vary is in their valence. That is, attitudes can be relatively positive, negative, or neutral. Moreover, attitudes can vary in their extremity; or the extent to which they deviate from neutrality (i.e., their degree of positivity/negativity). Attitudes can also differ in their strength—the extent to which they are durable and impactful (Petty & Krosnick, 1995). Attitudes are considered durable to the extent that they persist over time and resist attacks and impactful to the extent that they influence thoughts, feelings, and behavior. Common indicators of strong attitudes include accessibility, certainty, and importance. Recently, attitude strength indicators (in addition to or instead of attitude extremity) have become a target of change per se (e.g., changing a person's attitude certainty rather than the attitude itself; Rucker, Tormala, Petty, & Briñol, 2014).

Another way in which attitudes can vary is in their underlying components. In one of the earliest and most well-known conceptualizations of this notion, the tripartite model, attitudes were said to be based on: (a) affect/feelings, (b) cognitions/beliefs and knowledge,

and (c) behaviors/actions (Breckler, 1984). Knowing the extent to which an attitude is based on each of these components is important because the basis of an attitude can have important implications for attitude change (Aquino, Haddock, Maio, Wolf, & Alparone, 2016; see Maio, Haddock, & Verplanken, 2019, for a review). For example, it is generally more effective to change attitudes that are based on (or perceived to be based on) emotion with emotional strategies rather than with more cognitive or rational ones (Fabrigar & Petty, 1999; See, Fabrigar, & Petty, 2013; see also, Briñol et al., 2018).

Attitude Measurement

Attitudes are important, and they can be measured. An evaluation of the history of attitude measurement suggests three relatively distinct phases: an early phase in which the classic direct self-report procedures were developed, a middle phase in which various "indirect" assessment devices were introduced, and a modern phase in which various measures attempting to capture people's automatic or "implicit" attitudes have flourished. During the early phase, people were asked to endorse which evaluative statements applied to them (e.g., the church is a friendly place, Thurstone, 1928). These measures were considered *explicit* because their relatively transparent nature made it clear that a person's attitude was being evaluated. In addition to the pioneering "Thurstone" scale, other early direct measures included the "Likert" scale (Likert, 1932), semantic differential scale (Osgood, Suci, & Tannenbaum, 1957), and the ubiquitous one-item rating scale (e.g., feeling thermometer).

Shortly after direct attitude measures were introduced, concerns arose regarding whether these scales would necessarily capture a person's true attitude. For example, Hovland, Janis, and Kelley (1953) argued that true attitudes were "implicit" and unobservable. That is, all that could be detected with direct self-reports were expressed "opinions." In an attempt to deal with this concern, a second phase of attitude measurement research developed various *indirect* attitude measures. On these measures, people were not directly asked to self-report their evaluations. Rather, a person's attitude was inferred from his or her other judgments, bodily responses, or overt behaviors. The idea was that these measures could be used when it was either impractical to ask people their opinions because surveys would be intrusive (e.g., using seating distance to gauge interpersonal attraction), or because people may be reluctant to reveal their attitudes (e.g., due to social desirability concerns or fear of retribution), or because they may be unaware of their true feelings (unconscious attitudes). Some examples of indirect measures include the Thematic Apperception Test (Proshansky, 1943), the information error test (Hammond, 1948), physiological measures such as skin conductance (Rankin & Campbell, 1955), pupillary dilation versus constriction (Hess & Polt, 1960), picking up "lost letters" (Milgram, Mann, & Harter, 1965), facial muscle activity assessed with electromyography (Cacioppo & Petty, 1979), and physical behaviors such as non-verbal gestures, eye contact, or seating distance (e.g., Dovidio et al., 1997).

The third phase of research on attitude measurement began in the late 1980s with a new category of indirect measures whose goal was to assess a person's automatic (and some argued possibly unconscious) evaluative reactions. That is, reactions that spontaneously come to mind when merely presented with the attitude object rather than a more deliberative assessment that followed careful reflection (Fazio, Sanbonmatsu, Powell, & Kardes, 1986). A key idea behind automatic evaluations is the notion that attitudes vary in their accessibility, with some coming to mind instantaneously (see Fazio, 1995). One of the earliest examples of this approach was provided by Gaertner and McLaughlin (1983), which attempted to assess automatic racial stereotypes by examining whether presenting participants with either the words *white* or *black* would facilitate lexical decisions about positive and negative stereotype words. One finding was that people were faster to identify positive words (e.g., smart) as words when primed with *white* rather than *black*, suggesting a differential association between automatic racial stereotypes and positive traits.

Two measurement approaches designed to assess automatic attitudes have attained widespread use in contemporary social psychology. The first, called the *evaluative priming measure* (Fazio, Jackson, Dunton, & Williams, 1995), examines the extent to which attitude objects selectively facilitate categorization of common words as positive or negative. A second popular measure, the *implicit association test* or IAT (Greenwald, McGhee, & Schwarz, 1998), compares how quickly people can categorize attitude objects (e.g., male versus female names) when the target categories are paired with a "good" versus a "bad" response key on a computer keyboard. Both measures assume that attitude objects can be linked to evaluative associations in memory that vary in strength.

Automatic measures can be useful because they might bypass social desirability concerns and have been shown to predict spontaneous information processing, judgment, and behavior (see Gawronski & Payne, 2010; Petty, Fazio, & Briñol, 2009; Wittenbrink & Schwarz, 2007, for reviews). In contrast, deliberative measures are particularly important when attempting to predict behaviors that require some degree of thought (e.g., Dovidio et al., 1997). Although research indicates that implicit and explicit measures are useful in predicting behavior separately and in combination, the fact that these measures sometimes captured different evaluations of the same attitude object (e.g., one measure might indicate a positive evaluation whereas the other indicates a negative evaluation), stimulated the development of new theories regarding the underlying structure of attitudes. There have been three main approaches in this domain (see Petty, Fazio, & Briñol, 2009).

First, according to the Motivation and Opportunity as Determinants (MODE) model (Fazio & Towles-Schwen, 1999), people have stored evaluative associations of attitude objects in memory (e.g., candy = good; spider = bad). Implicit/automatic measures of attitudes tend to capture the stored evaluative association (i.e., the "true" attitude; Dijksterhuis, Albers, & Bongers, 2009), whereas explicit/deliberative measures capture the retrieved evaluative association along with the outcome of any downstream cognitive processes. Thus, if a different attitude is expressed on a deliberative versus automatic measure, this suggests that a person has engaged in some thought that modified their initial automatic evalua-

tion due to impression management or correction motives (see Gawronski & Boden-hausen, 2006, for similar assumptions).

A second, and more controversial approach argues that attitudes assessed with automatic and deliberative measures are quite different and independent (e.g., Greenwald & Banaji, 1995; Wilson, Lindsey & Schooler, 2000). According to this *dual attitudes* view, attitudes assessed with these measures have separate representations, are the result of different processes from separate mental systems, and operate in different situations (e.g., De-Coster, Banner, Smith, & Semin, 2006). There is not much, if any, interaction between them (Dovidio, et al., 1997).

A third framework for understanding attitude structure is known as the Meta-Cognitive Model (MCM, Petty & Briñol, 2006A; Petty et al., 2007). This framework holds that evaluative associations in memory (positive or negative) only determine *explicit* attitude measures to the extent that people endorse or perceive these evaluations as valid. However, evaluative associations, whether endorsed or not (i.e., validity tags), *can* affect implicit attitude measures (see also Gawronski & Bodenhausen, 2006). This third view is unique in pointing to a difference between explicit and implicit attitudinal ambivalence. Explicit ambivalence occurs when people have an attitude object linked in memory to both positivity and negativity and they further believe that both of these reactions are valid. In *implicit ambivalence*, however, a person also has an attitude object linked to both positivity and negativity in memory, but one of these reactions is tagged as invalid. This person does not report being ambivalent because the person does not consider both reactions to be valid (see Briñol, Petty, & Wheeler, 2006; Petty, Tormala, Briñol, & Jarvis, 2006), yet the person still feels conflicted (Rydell & Durso, 2012).

Attitude-Behavior Correspondence

Although attitudes are accorded special status in social psychology because of their influence on people's choices and actions, in the early phases of attitude research the close association between attitude and behavior was largely an article of faith. Indeed, this belief was sharply challenged following the publication of numerous empirical studies suggesting a slight to non-existent relationship between self-reports of attitudes and behavior (e.g., see Wicker, 1969, for a pessimistic review). Understanding the implications of the apparent weak association between attitude and behavior became one of the central themes of attitude research throughout the 1970s and 1980s. The responses to what became known as the "attitude-behavior problem" can be classified as falling into one of three broad themes and are summarized in the following sections (see also Guyer & Fabrigar, 2015, for a review).

Methodological Issues

The first compelling solution to the attitude-behavior problem was provided by Fishbein and Ajzen in the 1970s, based on the idea that attitude and behavior measures should be assessed at the same level of specificity. That is, specific attitudes (i.e., toward recycling

cans) are better predictors of specific behaviors (i.e., using recycling cans) than more general attitudes (e.g., toward preserving the environment; see Ajzen & Fishbein, 1977). In contrast, general attitudes (e.g., toward environmental preservation) are better predictors of a broad range of related general behaviors (e.g., circulating environmental petitions, recycling household waste, cleaning up the highways, etc., that are summed into a behavioral index) than specific attitudes (see Weigel & Newman, 1976).

A second solution provided by Fishbein and Ajzen (1975) was proposed in their *theory of reasoned action*, which emphasized the importance of behavioral intentions and social norms (what others think you should do) as critical determinants of behavior in addition to attitudes. A person's sense of self-efficacy or competence (i.e., perceived behavioral control), was added to this framework in the more recent *theory of planned behavior* (Ajzen & Fishbein, 2005). These theories make it clear that although changing attitudes can be an important first step to behavior change, unless norms favor the new behavior and people have the ability to perform the behavior, changing one's attitude may be insufficient (see Wood, 2017, for the influence of habit on behavior change).

Attitude Strength

A second important theme in the quest to resolve the attitude-behavior problem focused on understanding the underlying cognitive and motivational foundations of attitudes. Influential contemporary theories of attitude formation and change such as the elaboration likelihood model (ELM; Petty & Cacioppo, 1986) and the Heuristic-Systematic model (HSM; Chaiken, Liberman, & Eagly, 1989) hold that attitudes based on careful thought are more accessible, more enduring, held with more certainty, are more resistant to counter-attitudinal messages, and are therefore more powerful determinants of behavior than attitudes arrived at via relatively non-thoughtful processes (see Petty & Krosnick, 1995). Thinking about an issue before forming an attitude is said to give an attitude "strength." Research has identified a large number of factors that can indicate attitude strength, including how much knowledge a person has about an issue (Smith, Fabrigar, MacDougall, & Wiesenthal, 2008), the importance of the issue or attitude (Eaton & Visser, 2008), the accessibility of the attitude (Fazio, 1995), how certain people are about their attitudes (Rucker, Tormala, Petty, & Briñol, 2014), their degree of ambivalence (Luttrell, Petty, & Briñol, 2016), moral conviction (Skitka, Bauman, & Sargis, 2005), values (Blankenship, Wegener, & Murray, 2015) and so forth (see Fabrigar & Wegener, 2010; Petty & Krosnick, 1995, for reviews). Each of these strength indicators can be affected by how much thinking a person does about an attitude object and each serves to moderate the attitude-behavior relationship.

Additional Moderators

Beyond attitude strength, a large number of situational and dispositional factors have been shown to enhance attitude-behavior correspondence. For example, attitudes are more predictive of behavior when: (a) an individual's personality-type characterizes them as low in "self-monitoring," Snyder, 1974; or high in "need for cognition," Cacioppo, et al.

1986; or high "in need to evaluate," Jarvis & Petty, 1996), (b) a person's attitude is consistent with their underlying beliefs (e.g., Norman, 1975); (c) cues in the situation indicate that the person's attitude is relevant to the behavior (e.g., Borgida & Campbell, 1982); and (d) when the same attributes of the attitude object are salient at the time of attitude measurement and at the time of behavioral expression (Shavitt & Fazio, 1991; see Ajzen, 1991, for additional moderators).

Attitude Change

After defining attitudes and discussing key issues related to their measurement as well as their relationship with behavior, coverage turns to the core focus of this article: the history of research and ideas regarding attitude change and persuasion. The goal is to provide a historical overview of research on attitude change by describing the main theories and research findings from the field of social psychology. Thus, the following sections are organized according to the different decades in which key ideas were developed.

When the science of persuasion began a century ago, the first empirical investigations were guided by the same type of questions that inspired the early thinkers and philosophers (see Petty, 1997; Petty & Briñol, 2008). Beginning with Aristotle's *Rhetoric*, scholars focused largely on the effects that single variables (e.g., emotion, source credibility) may have on persuasion (e.g., is appealing to emotions more effective than appealing to reason?), assuming that each variable would have just one effect on the ultimate persuasion outcome (e.g., inducing positive emotions would increase influence). Furthermore, researchers tended to focus on just one process by which variables would have their impact (e.g., emotion affected attitudes by classical conditioning). However, these approaches changed as researchers began to understand that the same variable could not only have different effects on persuasion (e.g., positive emotions sometimes decreased persuasion), but that each variable could also affect attitudes by more than one process (e.g., emotions could bias information processing). Moreover, researchers noted that whereas sometimes attitude changes were relatively durable and impactful (e.g., guiding behavior), at other times they were rather transitory and inconsequential. Next, this review discusses how some of the classic and contemporary approaches in persuasion have dealt with these issues and apparent controversies.

1900-1920

At the turn of the 20th century, the first empirical investigations sought to better understand the same type of questions that inspired early thinkers and philosophers. One of these questions was whether groups can influence behavior. Although different methodologies were used to tackle this question on either side of the Atlantic, experimental research conducted by Triplett (1897) at Indiana University in the United States, and observational work conducted by Gustave Le Bon (1895) in Paris converged on the same response. That is, the presence of others (e.g., being in a crowd), increased a person's susceptibility to influence. Although early research focused predominantly on the influence

of others on our behavior, later work began to investigate how these variables changed evaluations. A key factor in investigating this phenomena scientifically was the development of scales used to measure people's attitudes (e.g., Thurstone, 1928).

1920–1940

Following the conclusion of WWI, a famous textbook was published by Floyd Allport (Allport, 1924), in which he declared attitudes to be the core concept around which psychology was built. Allport's research on social facilitation during World War I led him to predict that the presence of others could increase the extremity of a person's attitude. Although a great deal of research on attitude extremity has since been conducted, little was known about how the mere presence of others influences evaluations. Recent research has addressed this gap by showing that indeed evaluations can be influenced by others who are present in a situation, even when they are not the communicator (e.g., see Bayliss, Frischen, Fenske, & Tipper, 2007; Boothby, Clark, & Bargh, 2014).

In the coming years, an important volume largely focused on attitudes was published by Gardner Murphy and Lois Murphy of Columbia University, in 1931. This volume, entitled *Experimental Social Psychology*, played a key role in advancing the status of social psychology as a scientific discipline. Notably, several studies described in this volume demonstrated that the opinions of others (especially experts and those with majority status) were potent sources of influence, presumably changing attitudes by eliciting conformity (Moore, 1921; Lorge, 1936). Recall that these early researchers typically assumed that variables would have their impact by only one process and in only one direction. In this case, expert and majority sources were presumed to influence attitudes in a direction consistent with the message through a process of conformity.

Prior to the entrance of the United States into World War II, the 1930s saw the development of three important lines of research. First, Kurt Lewin's field theory emphasized how internal and environmental forces combined to influence behavior and attitudes. In essence, Lewin showed that attitudes can change as a result of explaining and trying to convince other people of a given point of view. As described later, this work was a precursor for the research on role playing and self-persuasion developed in subsequent decades.

Second, another classic set of studies was conducted by Sherif (1936) on group norms under ambiguous situations. Although not specifically focused on attitude change, these studies showed that under conditions of uncertainty, people often relied on the opinions of others in order to inform their own judgments. Sherif's work, as well as later research by Solomon Asch (1951), demonstrated that people could be influenced to provide inaccurate evaluations of distance and size when first presented with the incorrect views of others. This work paved the way for many subsequent studies on conformity to the attitudes of others (e.g., Levitan & Verhulst, 2016).

Third, the power of group norms to shape our likes and dislikes was also shown by Newcomb (1943), who demonstrated that students' attitudes became more liberal as they spent more time in the liberal local communities and campuses. Interest in how the pow-

er of group norms exerts influence has continued to stimulate research over the years (e.g., Visser & Mirabile, 2004).

1940–1960

During the 1940s and 1950s, numerous exciting developments in the study of attitudes and persuasion led to explosive growth in the field. One important theme explored how classic behavioral (classical conditioning) and cognitive (verbal learning) psychological learning theories could be applied to the study of attitudes. Similarly, theories of perception (assimilation and contrast) were also used to study attitudes. Additionally, entirely new theories developed exclusively by attitudes researchers were introduced (cognitive dissonance). The 1940s and 1950s were dominated by two widely regarded geniuses, Carl Hovland and Leon Festinger, whose contributions continue to influence contemporary researchers. Their contributions along with other notable developments during this period are reviewed next.

Verbal Learning and Reception Approaches

In an effort spear-headed by Carl Hovland and his colleagues at Yale University, an extensive series of studies were conducted based on the assumption that effective influence required a sequence of steps through which the content of a message was absorbed (e.g., exposure, attention, comprehension, learning, retention; see McGuire, 1985). Because learning the information was presumed to lead to yielding (persuasion), these researchers believed that a critical feature of persuasion was providing incentives (e.g., an attractive source) that would motivate people to learn the content of a message (Hovland, Janis, & Kelly, 1953; Kelman & Hovland, 1953). Although some of the core ideas guiding this research have survived, attitude theorists have largely turned to other frameworks to answer their questions regarding persuasion because message learning per se was not proven to be a critical antecedent of persuasion (Petty, Ostrom, & Brock, 1981).

Classical Conditioning

Influenced by the work of Pavlov and behaviorists such as Watson, later researchers began to apply the classic animal models of learning to humans. In particular, Staats and Staats (1958) demonstrated that attitudes could be changed by directly associating positive or negative affect (i.e., the conditioned stimulus; CS) with previously neutral attitude objects (i.e., the unconditioned stimulus; UCS) via conditioning processes. Over the following decades, a wide variety of conditioning stimuli were used to create positive or negative attitudes, including unpleasant odors and temperatures, electric shocks, harsh sounds, pictures, and elating and depressing films (e.g., Gouaux, 1971; Staats, Staats & Crawford, 1962; Stuart, Shimp, & Engle, 1987). In recent years, however, theorists have suggested that conditioning in the context of attitudes (versus behavior) more accurately reflects a phenomenon known as *evaluative conditioning* (Schmidt & de Houwer, 2012; see Hofmann et al. 2010, for a review). This distinction is important because unlike behavior, conditioned attitudes do not extinguish readily when the UCS is no longer present-

ed. Indeed, research by Jones et al. (2009) has shown that attitudes elicited by the UCS can be misattributed to the CS via relatively simple inference processes.

Self-Persuasion Approaches

Around the same time as Hovland was developing a message learning framework to explain persuasion effects, his colleagues at Yale University began testing ideas about how role playing might influence self-persuasion (e.g., King & Janis, 1956; Janis & King, 1954). In a classic example, people who generated arguments through role playing (e.g., persuading a friend to quit smoking), developed more negative attitudes toward cigarettes than people who received the same information passively (Elms, 1966). In line with contemporary views on attitude strength discussed later, self-persuasion is typically based on more extensive processing of attitude-relevant information and thus lasts longer than persuasion based on passive exposure to a message (e.g., Janis, 1968). Similar patterns of effects have been shown in cases where people generate a message to convince themselves (e.g., Briñol, McCaslin, & Petty, 2012).

Motivational Approaches: Consistency

One of the most prominent motivational theories in the domain of attitudes is the theory of cognitive dissonance (Festinger, 1954). According to Festinger, inconsistency (e.g., between an attitude and a behavior) elicits an unpleasant state of psychological arousal that people are motivated to reduce through realigning their attitude or behavior. Thus, dissonance can prompt a careful consideration of the rationale behind engaging in certain behaviors and/or the reasons for holding certain beliefs. A wealth of research has questioned whether inconsistency per se arouses this unpleasant state of tension, and if changing one's attitude is motivated solely by the desire to reduce inconsistency (see Cooper, 2007, for a review). For example, some research has shown that for dissonance to occur, people must believe that they have freely chosen to bring about a negative consequence to themselves or others that could have been foreseen (e.g., Cooper & Fazio, 1984; Scher & Cooper, 1989). Other research has demonstrated that the experience of dissonance is aroused by a threat to one's positive self-concept and must involve a core aspect of the self (e.g., Aronson, 1969; Steele, 1988; Tesser, 1988). Of course, bringing about negative consequences for others is inconsistent with most people's views of themselves as caring individuals. If people are provided with social support for their actions (Stroebe & Diehl, 1988) or are given an opportunity to restore or bolster their self-esteem in some other manner (Tesser, 2001), dissonance-reducing attitude change is less likely (for a review, see Sherman & Cohen, 2006). Yet other theorists argue that holding inconsistent cognitions are sufficient for dissonance but that feelings of conflict are especially likely to arise in the context of behavioral choices (Harmon-Jones & Harmon-Jones, 2007; see van Harreveld, Van der Pligt, & de Liver, (2009), for a similar argument about attitudinal ambivalence).

Similar to dissonance theory, *balance theory* proposed that inconsistency pressures were unpleasant and could motivate attitude change. However, changes could sometimes occur through a relatively simple inference process rather than via extensive thought (Heider,

1958). This theory holds that attitude change is a result of the unpleasantness caused by the imbalance that occurs when people either disagree (agree) with people they like (dislike). Research using the IAT has shown that balance processes work among automatic attitudes (Greenwald et al., 2002). Furthermore, recent work has extended the concept of balance to the spreading of attitudes via automatically activated cognition (Horcajo, Briñol, & Petty, 2010). These researchers demonstrated that for people with high implicit self-esteem, stronger automatic associations emerged between the self and vegetables after generating arguments in favor of including more vegetables in their diet. However, for those with low implicit self-esteem, the direction of this association was reversed such that stronger associations between the self and vegetables emerged after generating arguments about the negative consequences of consuming vegetables.

Duality in Early Theories of Persuasion

Some of these theories from the 1940s and 1950s appeared to suggest that attitude change was the result of simple associative processes such as classical conditioning or balance, whereas other theories proposed more effortful cognitive engagement such as that involved in role playing. Furthermore, some theories seemed to suggest that persuasion was a result of relatively objective processes (e.g., learning the arguments in a message) whereas others indicated that persuasion was a result of somewhat irrational forces (e.g., changing due to internal pressure for consistency). In addition, some theories proposed that this underlying duality in persuasion was primarily content based, such that although the same fundamental process (learning) applied to all types of content, learning cues typically required less cognitive effort than learning message arguments (Kelman & Hovland, 1953). However, other theories introduced a process distinction linked to particular content, such that certain variables (e.g., source expertise) induced agreement because of a relatively effortful understanding and acceptance of the message arguments, whereas other variables (e.g., source attractiveness) induced acceptance because of a less effortful identification with the message source (Kelman, 1958). This focus on process is important because it implied that the downstream consequences of attitude change can differ even though the initial effects on attitude change may look the same. The core idea that similar initial attitudes can have different outcomes over time makes a reappearance in contemporary dual process models described later in this article.

1960s

Following the rapid development of research on attitude change and persuasion in the 1940s and 1950s, the 1960s was a period of reduced research output. Nevertheless, one influential book on attitude change was published (Kiesler, Collins, & Miller, 1969) and several important theoretical developments occurred, the most influential of which are noted in this section.

Social Judgment Theory

In brief, the basic idea proposed by *social judgment theory* was that a person's attitude served as an anchor from which judgments of social stimuli, such as a persuasive mes-

sage, would either be displaced toward one's own opinion (assimilation), or be displaced away from it (contrast). According to this view, attitude change depended upon how the position advocated in the message was classified by the recipient (Sherif & Sherif, 1967).

Inoculation Theory

Inoculation theory suggested that because people have very little practice defending cultural truisms such as "you should brush your teeth after every meal," these beliefs are surprisingly susceptible to influence when challenged (McGuire, 1964). However, in the same way that resistance to a disease can be increased by giving people a mild form of the germ, resistance to attitude-discrepant messages can also be increased by exposing people to a few pieces of counter-attitudinal information prior to the threatening communication, then showing them how to refute this information (see Tormala & Petty, 2002; Rucker & Petty, 2004).

Attribution Theory

The core idea behind attribution theory is that people infer underlying characteristics about themselves and others based on the behaviors they observe and the perceived situational constraints imposed on those behaviors (e.g., Jones & Davis, 1965). In a particularly influential iteration of attribution theory known as *self-perception theory*, Bem (1965) suggested that when people have no special knowledge of their own internal states, they simply infer their attitudes in a manner similar to that by which they infer the attitudes of others (e.g., "If I (she) ate food from McDonalds, I (she) must like that restaurant"). Self-perception theory provided a salient alternative explanation for some findings that were previously explained by dissonance theory but without invoking a need to postulate that any feelings of conflict were involved. The controversy between dissonance and self-perception was resolved with research showing that dissonance provided a better explanation for inconsistent attitudes and behavior in one's latitude of rejection but self-perception theory provided a better explanation for inconsistent attitudes and behavior in the latitude of acceptance (Fazio, Zanna, & Cooper, 1977).

Mere Exposure

Mere exposure refers to a phenomenon whereby attitudes toward stimuli become more favorable as a consequence of repeated exposure to those stimuli without any need to pair the stimuli with other positive stimuli as in evaluative conditioning (Zajonc, 1968). Research indicates that previous or repeated exposure to stimuli can increase the ease with which those stimuli are processed, thus enhancing liking for the stimuli because increased processing fluency is misattributed to the stimulus (e.g., Bornstein & D'Agostino, 1992), at least when fluency is perceived as good (Briñol, Petty, & Tormala, 2006).

1970s

Although attitude-change research in the 1960s was focused primarily on simple inference processes, the 1970s ushered in a more deliberative cognitive approach that empha-

sized the importance of effortful thinking processes and how thoughts and beliefs were integrated to create overall summary evaluative judgments.

Cognitive Response Approach

In essence, the cognitive response approach holds that persuasion is not dependent on whether a person either learned message arguments or source cues but rather whether the message induced favorable or unfavorable issue-relevant thoughts (Greenwald, 1968; Petty, Ostrom, & Brock, 1981). This approach to persuasion yielded an important methodological development. Specifically, by manipulating argument quality along with some variable of interest (see Petty, Wells, & Brock, 1976) many variables initially thought to produce only one effect (i.e., either increasing/decrease persuasion), could actually both increase and decrease persuasion depending on whether the variable was paired with a message that contained strong or weak arguments (see Eagly & Chaiken, 1993; Petty & Cacioppo, 1986, for reviews). For example, increasing the personal relevance (Petty & Cacioppo, 1979) or even the personal pronouns in a message (Burnkrant & Unnava, 1989) enhanced message processing, thereby increasing persuasion for strong messages but decreasing persuasion for weak messages compared with low relevance conditions. Other variables that yielded this interaction effect with argument quality include personal accountability (Petty, Harkins, & Williams, 1980), message repetition (Cacioppo & Petty, 1979), source credibility (Heesacker, Petty, & Cacioppo, 1983), emotion (Mackie & Worth, 1989), feelings of power (Briñol, Petty, Durso, & Rucker, 2017), one's bodily movements (Briñol, Petty, & Wagner, 2012) and more (see, Petty & Wegener, 1998, for a review). Because research demonstrated that many variables were associated with both increased and decreased persuasion by affecting the extent of message processing (see, Guyer, Briñol, Petty, & Horcajo, 2019), for a review on the multiple roles of nonverbal variables in persuasion), the field shifted from asking the simple first generation question of whether a variable was good or bad for persuasion, and began to ask about moderators and mechanisms of these effects.

Expectancy-Value Theory

Expectancy-value theory proposed that attitude change should occur to the extent that a persuasive message induces changes in the thoughts generated by the recipient regarding the perceived expectancy (i.e., likelihood) and/or value (i.e., desirability) of the consequences associated with an attitude object, Fishbein and Ajzen (1975, 1981). For example, if an advertisement led a person to think that "using this new detergent will make my clothes smell fresh," the key elements of the thought relevant for attitude change are the desirability of smelling fresh and the likelihood that the new detergent will produce this outcome. In the original formulation of expectancy-value theory, the desirability and likelihood of the consequences were equally important. More recent studies suggest that desirability tends to be more important than likelihood (Johnson, Smith-McLallen, Killeya, & Levin, 2004), and that the emotions experienced by the recipient of a persuasive message can influence the perceived likelihood of outcomes advocated by the message (e.g., Petty & Briñol, 2015).

Information-Integration Theory

In contrast to expectancy-value theory, which proposed that evaluative judgments are the product of the perceived likelihood and desirability associated with an attitude-object, information integration theory proposed that attitudes are formed via a weighted averaging process based on the salient information in a given context (Anderson, 1981). That is, attitudes are formed based on a person's evaluation of how important the salient information is to the judgment, and this is averaged with the person's weighted initial attitude.

1980s

The 1950s through the 1970s saw the development of many new theories of persuasion as well as many conflicting findings. Inevitably, it seemed as though research eventually found opposite effects for nearly every variable studied (e.g., highly credible sources are more and less persuasive than low credibility sources). Consequently, some reviewers of the attitudes literature in the mid-1970s adopted a highly pessimistic outlook on the field (see Petty, 1997, for a review). However, the accumulating evidence pointing to multiple and opposite effects as well as multiple processes underlying the same outcome spurred the development of new theories that could accommodate these findings. Importantly, unlike the earlier duality approaches the mapped content onto process, these new theories did not confound content and process. For example, in the elaboration likelihood model (ELM; Petty & Cacioppo, 1986) and the heuristic-systematic model (HSM; Chaiken et al., 1989) any variable (e.g., an expert source, or one's emotions) could induce persuasion by multiple processes depending on the situation. These two main theoretical frameworks are briefly described next.

The Elaboration Likelihood Model (ELM)

The Elaboration Likelihood Model was developed to provide an integrative framework that could account for the complicated and often contradictory results in the persuasion literature, as well as facilitating new predictions within the domain of attitudes and beyond (Petty & Cacioppo, 1981, 1986; see also Petty & Briñol, 2012). Importantly, the ELM specifies a finite number of mechanisms by which any variable can produce attitude change and holds that these processes operate at different points along an elaboration continuum, ranging from mechanisms based on relatively low thought (e.g., mere association of emotion with an object) to mechanisms based on extensive thought (e.g., when people generate their own arguments). Notably, the ELM also articulates the consequences associated with attitude change that occurs by each of these mechanisms. Thus, the extent of thinking is important not only because it determines the process by which a variable affects attitudes but also because more thoughtful persuasion tends to be more consequential than persuasion produced by less thoughtful processes (see Petty, Haugtvedt, & Smith, 1995).

The Heuristic Systematic Model (HSM)

Similar to the ELM, the Heuristic Systematic Model is based on the idea that in some cases persuasion is the result of effortful thinking, whereas in other cases persuasion is the

result of a low-effort reliance on simple heuristics such as "experts are correct" (Chaiken, 1980). According to the HSM, whereas the likelihood of careful processing increases when confidence in one's attitude falls below the desired level (i.e., "sufficiency threshold"), when actual and desired confidence are equal, heuristic processing is more likely. Although the HSM and ELM make similar predictions, the terminology and specific mechanisms of each theory are a bit different (see Eagly & Chaiken, 1993; Petty & Wegener, 1998, Petty & Briñol, 2012, for further discussion).

Alternative Frameworks: Dual-System Models and the Unimodel

Several alternative frameworks have been proposed that also advocate evaluations based on relatively high- and low-effort thought (see Carver, 2005, for a review). In these models, high- and low-thought processes have been labeled as impulsive versus reflective (Deutsch & Strack, 2006), rational versus intuitive (Epstein, 2003), explicit versus implicit (Greenwald & Banaji, 1995), fast versus slow-learning (Smith & DeCoster, 2000), or more blandly, System 1 versus 2 (Kahneman, 2003), and System X versus Y (Lieberman, 2000). New dual system frameworks are still developing, such as the Attitude Entropy Model (AEM), which applies concepts from thermodynamics to the study of attitudes and persuasion (Dalege, Borsboom, van Harreveld, & van der Mass, 2018). Despite generating a number of reasonable predictions, it remains unclear how these frameworks go beyond the earlier multi-process models in explaining attitude change (see Petty & Briñol, 2006).

Although dual process and system frameworks have dominated, some critics have advocated one underlying process as sufficient to account for social judgment (e.g., Kruglanski, Erb, Pierro, & Spiegel, 2003; Kruglanski & Thompson, 1999). According to these researchers, it only appeared as though two separate processes were operating because process and content were confounded. That is, high-effort processing was tied to complex message factors (detailed verbal arguments), and low-effort processing was tied to simple source factors (credibility) and/or other non-message factors (mood). However, ample research has shown that many dual process studies do not suffer from this confound (e.g., Petty, Wheeler, & Bizer, 2000; Petty & Briñol, 2006).

Minority Influence

Before concluding our discussion of the 1980s, an additional theme that initially developed separate from attitudes research but has more recently merged with it focuses on how numerical minorities influence persuasion. In particular, Moscovici's conversion theory (1980) proposed that majority sources were typically influential on a public or direct level because individuals desired to belong to the majority group to avoid being labeled as deviant. However, minority sources were often persuasive at an indirect or private level because people often carefully considered the position advocated by a minority even though they frequently resisted directly identifying with minorities. Because minority messages often received more thought, attitudes would sometimes change to minority sources on issues related to the focal topic if not the focal topic itself (e.g., change might occur on birth control if the topic was abortion; see Crano & Chen, 1998 and Papastamou, Gardikiotis, & Prodromitis, 2017). In the language of dual process theories such as the

ELM and HSM, majorities served as simple cues and thus generated somewhat ephemeral change, whereas minorities induced careful processing, thus produced more lasting change (e.g., Horcajo, Briñol, Petty, 2014; Martin & Hewstone, 2008; see Horcajo, Briñol, & Petty, 2017, for a review on the multiple roles of minority/majority influence).

1990s

By the 1990s, a decade of research had accumulated evidence supporting the ELM and HSM proposition that the mechanisms of persuasion could differ under conditions of high and low thinking. Over the coming decade, a new wave of research began to closely examine the consequences of attitudes changed by high versus low thought. In general, evidence indicated that attitudes based on relatively high amounts of thinking were more likely to resist change, persist over time, come to mind quicker, predict behavior, and be rated as more certain and important (see Petty & Krosnick, 1995 for a review). Subsequent research on meta-cognition (e.g., Jost, Kruglanski, & Nelson, 1998; Petty et al., 2007; see Rucker et al., 2014, for a review) revealed that attitude certainty and other subjective perceptions associated with attitudes (e.g., ease of retrieval; Schwarz et al., 1991) also play an essential role in attitude strength.

2000s

The dawn of a new century welcomed a thriving field in which new theories and processes were emerging, and old problems had largely been resolved. Interest in meta-cognitive phenomenon continued in earnest, as did research on attitude measurement and automatic processes of change. The numerous advancements that have occurred since 2010 were documented in the recently updated "Handbook" of attitudes and persuasion (Albarracin & Johnson, 2019), as well as in several new textbooks (e.g., Vogel & Wanke, 2016; Maio, Haddock, & Verplanken, 2019).

A New Meta-Cognitive Process: Self-Validation

Although initial work on the meta-cognitive elements of attitudes and persuasion emerged during the 1990s (via research on attitude strength, correction processes, and ease of retrieval), the 2000s ushered in a new meta-cognitive theory that rose to prominence in part because of its unique ability to explain how myriad variables affect persuasion. This new process was called *self-validation* (Petty, Briñol, & Tormala, 2002). Unlike previous mechanisms of attitude change that focused on primary or first-order cognition, this new process emphasized secondary or meta-cognition (Briñol & DeMarree, 2012).

The core tenet of self-validation theory is that merely generating thoughts is not sufficient for those thoughts to impact judgment. Importantly, one must also have confidence in one's thoughts or feel good about them. Confidence in thoughts is important because the more confidence (versus doubt) people have in their thoughts, the more they will rely on them when forming judgments. Similarly, the better people feel about their thoughts the more likely it is they will influence their evaluations. In general, variables that enhance confidence and/or pleasantness after thought generation (e.g., feelings of power, nodding

one's head, smiling) produce greater reliance on thoughts such that when thoughts about oneself or a persuasive communication are mostly positive, these variables are associated with more persuasion. However, when thoughts are mostly negative, variables increasing confidence and pleasantness are associated with less persuasion because people are confident and feel good about their negative thoughts, which are then used to inform judgments (see Briñol & Petty, 2009).

Implicit Change

Attitudes formed as a result of automatic evaluations were initially assumed to be highly resilient, at least in part because these attitudes were assumed to reflect underlying object-evaluation associations that were learned over a long period. Take, for example, automatic evaluations reflecting prejudice, which have been portrayed as emerging both from passive, long-term exposure to negative portrayals in the media (Devine, 1989), as well as from long-standing status differences between groups. Thus, researchers often assumed that automatic evaluations were more enduring and resistant to change than were deliberative attitudes (e.g., Banaji, 2004; Bargh, 1999; Greenwald, McGhee, & Schwartz, 1998). This belief initially led to the idea that deliberate and automatic attitude measures should be matched with persuasion strategies that targeted high- and low-thinking processes. However, later research demonstrated that low-effort (relatively non-thoughtful) processes such as classical conditioning and mere exposure can influence both deliberative (e.g., Zajonc, 1968; Staats & Staats, 1958) and automatic (Olson & Fazio, 2001) measures of attitudes. Likewise, other research demonstrated that high-effort processes such as self-generated thoughts and thoughts generated in response to persuasive messages can influence both deliberative and automatic measures of attitudes (see Briñol, Petty, & McCaslin, 2009; Petty & Briñol, 2009, Sherman, Gawronski, & Trope, 2014, for reviews on implicit persuasion).

2010s and Future Directions

Research on the nature of attitudes and persuasion remains one of the most vibrant fields of study in contemporary social psychology. Indeed, while exciting new developments continue to emerge on many of the classic topics discussed in this article (e.g., source power, recipient emotion, and embodiment), a growing body of work is also exploring a variety of novel domains. One of the classic topics in attitudes and persuasion research that has recently garnered increased attention is self-persuasion. As noted, self-persuasion often refers to what extent self-generated arguments designed to convince others unintentionally influence one's own evaluation of the topic. For example, Briñol et al. (2012) demonstrated that when people had doubts rather than confidence in their position, they invested more effort into generating better persuasive messages, which led to more self-persuasion (see also Akhtar, Paunesku, & Tormala, 2013; Rios, DeMarree, & Statzer, 2014). In line with this idea, one potentially fruitful area for future research could examine the factors that transform message recipients into message sources and how advocating one's views can influence not only others but also the self. Once an individual attempts to persuade someone else, or decides to advocate for a cause (e.g., initiate a debate with oth-

ers, share their opinions online, etc.), these activities can also have a subsequent impact on their own attitudes (see also, Teeny & Petty, 2018). This area of research has importance across domains beyond persuasion, including research on the psychology of attitude bolstering, work on the saying is believing effect, research on proselytizing, and the psychology of word of mouth, to name only a few relevant paradigms.

Another area of inquiry that has received increased recent interest has to do with the moral foundations of attitudes (e.g., Skitka, Hanson, Washburn, & Mueller, 2018), with special attention focused on the different foundations of beliefs for individuals with liberal versus conservative ideologies (e.g., Critcher, Huber, Ho, & Koleva, 2009; Feinberg & Willer, 2013, 2015; Haidt & Graham, 2007; Kidwell, Farmer, & Hardesty, 2013; Wolsko, Ariceaga, & Seiden, 2016). Recent technological advances have led to exciting discoveries that provide initial evidence of a link between activation within specific brain regions and long-term persuasion (e.g., Cacioppo, Cacioppo, & Petty, 2018; Falk, Berkman, Mann, Harrison, & Lieberman, 2010; Vezich, Katzman, Ames, Falk, & Lieberman, 2017). Other research examining the relationship between the brain and attitudes has begun to look at classic attitude strength constructs such as ambivalence and certainty (Luttrell et al., 2013; Luttrell, Stillman, Hasinski, & Cunningham, 2016).

Finally, from an applied perspective, advances in persuasion research continue to be put to use across diverse fields such as marketing (e.g., Teeny, Briñol, & Petty, 2017), health communication (Geers, Briñol, & Petty, IN PRESS; Huskey, Mangus, Turner, & Weber, 2017; Sheeran et al., 2016; Jones & Albarracín, 2016), and educational settings via interventions designed to help underrepresented individuals achieve success and stay in school (e.g., Walton et al., 2015). Despite the many challenges faced by attitude researchers over the past century, interest and progress in attitudes and persuasion remains stronger than ever.

References

Akhtar, O., Paunesku, D., & Tormala, Z. L. (2013). Weak > strong: The ironic effect of argument strength on supportive advocacy. *Personality and Social Psychology Bulletin*, *39*, 1214–1226.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*, 179–211.

Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin*, *84*, 888–918.

Ajzen, I., & Fishbein, M. (2005). The influence of attitudes on behavior. In D. Albarracín, B. T. Johnson, & M. P. Zanna (Eds.), *The handbook of attitudes* (pp. 173–221). Mahwah, NJ: Erlbaum.

Albarracín, D., & Johnson, B. T. (Eds.). (2019). *The handbook of attitudes: Applications*. Vol. 2. New York, NY: Routledge.

Albarracín, D., & Vargas, P. (2010). Attitudes and persuasion. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (pp. 394–427). Hoboken, NJ: Wiley.

Allport, F. H. (1924). *Social psychology*. Boston, MA: Houghton Mifflin.

Allport, G. W. (1935). Attitudes. In C. Murchison (Ed.), *Handbook of social psychology* (pp. 798–884). Worcester, MA: Clark University Press.

Anderson, N. (1981). Integration theory applied to cognitive responses and attitudes. In R. E. Petty, T. Ostrom, & T. Brock (Eds.), *Cognitive responses in persuasion* (pp. 361–397). Hillsdale, NJ: Erlbaum.

Aquino, A., Haddock, G., Maio, G. R., Wolf, L. J., & Alparone, F. R. (2016). The role of affective and cognitive individual differences in social perception. *Personality and Social Psychology Bulletin*, *42*, 798–810.

Aronson, E. (1969). Cognitive dissonance: A current perspective. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 4, pp. 1–34). New York, NY: Academic Press.

Asch, S. E. (1951). Effects of group pressure upon the modification and distortion of judgments. In H. Guetzkow (Ed.), *Groups, leadership, and men* (pp. 177–190). Pittsburgh, PA: Carnegie Press.

Banaji, M. R. (2004). The opposite of a great truth is also true. In J. T. Jost, M. R. Banaji, & D. A. Prentice (Eds.), *Perspectivism in social psychology: The yin and yang of scientific progress* (pp. 127–140). Washington, DC: American Psychological Association.

Bargh, J. A. (1999). The cognitive monster: The case against the controllability of automatic stereotype effects. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology*. New York, NY: Guilford Press.

Bayliss, A. P., Frischen, A., Fenske, M. J., & Tipper, S. P. (2007). Affective evaluations of objects are influenced by observed gaze direction and emotion expression. *Cognition*, *104*, 644–653.

Bem, D. J. (1965). An experimental analysis of self-persuasion. *Journal of Experimental Social Psychology*, *1*, 199–218.

Bem, D. J. (1972). Self-perception theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 6, pp. 1–62). New York, NY: Academic Press.

Blankenship, K. L., Wegener, D. T., & Murray, R. A. (2015). Values, inter-attitudinal structure, and attitude change: Value accessibility can increase a related attitude's resistance to change. *Personality and Social Psychology Bulletin*, *41*, 1739–1750.

Boothby, E. J., Clark, M. S., & Bargh, J. A. (2014). Shared experiences are amplified. *Psychological Science*, *25*(12), 2209–2216.

Borgida, E., & Campbell, B. (1982). Belief relevance and attitude-behavior consistency: The moderating role of personal experience. *Journal of Personality and Social Psychology*, *42*(2), 239–247.

Bornstein, R. F., & D'Agostino, P. R. (1992). Stimulus recognition and the mere exposure effect. *Journal of Personality and Social Psychology*, *63*, 545–552.

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., & DeMarree, K. G. (2012). Social metacognition: Thinking about thinking in social psychology. In P. Briñol & K. G. DeMarree (Eds.), *Social metacognition*, (pp. 1–18). New York, NY: Psychology Press.

Briñol, P., McCaslin, M. J., & Petty, R. E. (2012). Self-generated persuasion: Effects of the target and direction of arguments. *Journal of Personality and Social Psychology*, *102*, 925–940.

Briñol, P., & Petty, R. E. (2012). The history of attitudes and persuasion research. In A. Kruglanski & W. Stroebe (Eds.), *Handbook of the history of social psychology* (pp. 285–320). New York, NY: Psychology Press.

Briñol, P., Petty, R. E., & Tormala, Z. L. (2006). The malleable meaning of subjective ease. *Psychological Science*, *17*, 200–206.

Briñol, P., & Petty, R. E. (2009). Persuasion: Insights from the self-validation hypothesis. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 41, pp. 69–118). New York, NY: Elsevier.

Briñol, P., Petty, R. E., Durso, G. R. O., & Rucker, D. D. (2017). Power and persuasion: Processes by which perceived power can influence evaluative judgments. *Review of General Psychology*, *21*, 223–241.

Briñol, P., Petty, R. E., & McCaslin, M. J. (2009). Changing attitudes on implicit versus explicit measures: What is the difference? In R. E. Petty, R. H. Fazio, & P. Briñol (Eds.), *Attitudes: Insights from the new implicit measures* (pp. 285–326). New York, NY: Psychology Press.

Briñol, P., Petty, R. E, Stavraki, M., Lamprinakos, G., Wagner, B. C., & Díaz, D. (2018). Affective and cognitive validation of thoughts: An appraisal perspective on anger, disgust, surprise, and awe. *Journal of Personality and Social Psychology*, *114*, 693–718.

Briñol, P., Petty, R. E., & Wagner, B. C. (2012). Embodied Validation: Our body can change and also validate our thoughts. In P. Briñol, & K. G. DeMarree (Eds.), *Social metacognition* (pp. 219–242). New York, NY: Psychology Press.

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.

Burnkrant, R. E., & Unnava, R. (1989). Self-referencing: A strategy for increasing processing of message content. *Personality and Social Psychology Bulletin*, *15*, 628–638.

Cacioppo, J.T., Cacioppo, S., & Petty, R.E. (2018). The neuroscience of persuasion: A review with emphasis on issues and opportunities. *Social Neuroscience*, *13*, 129–172.

Cacioppo, J. T., & Petty, R. E. (1979). Attitudes and cognitive response: An electro-physiological approach. *Journal of Personality and Social Psychology*, *37*, 2181–2199.

Cacioppo, J. T., & Petty, R. E. (1979). The effects of message repetition and position on cognitive responses, recall, and persuasion. *Journal of Personality and Social Psychology*, *37*, 97–109.

Cacioppo, J. T., Petty, R. E., Kao, C., & Rodriguez, R. (1986). Central and peripheral routes to persuasion: An individual difference perspective. *Journal of Personality and Social Psychology*, *51*, 1032–1043.

Carver, C. S. (2005). Impulse and constraint: Some perspectives from personality psychology, convergence with theory in other areas, and potential for integration. *Personality and Social Psychology Review*, *9*, 312–333.

Chaiken, S. (1980). Heuristic versus systematic information processing in the use of source versus message quest in persuasion. *Journal of Personality and Social Psychology*, *39*, 752–766.

Chaiken, S., Liberman, A., & Eagly, A. H. (1989). Heuristic and systematic processing within and beyond the persuasion context. In J. S. Uleman & J. A. Bargh (Eds.), *Unintended thought* (pp. 212–252). New York, NY: Guilford Press.

Cooper, J. (2007). *Cognitive dissonance: 50 years of a classic theory*. London, U.K.: SAGE.

Cooper, J., & Fazio, R.H. (1984). A new look at dissonance theory. In L. Berkowitz (Ed.), *Advances in Experimental social psychology* (Vol. 17). New York, NY: Academic Press.

Crano, W. D., & Chen, X. (1998). The leniency contract and persistence of majority and minority influence. *Journal of Personality and Social Psychology*, *6*, 1437–1450.

Crano, W. D., & Prislin, R. (Eds.). (2008). *Attitudes and persuasion*. New York, NY: Psychology Press.

Critcher, C. R., Huber, M., Ho, A. K., & Koleva, S. P. (2009). Political orientation and ideological inconsistencies: (Dis)comfort with value tradeoffs. *Social Justice Research*, *22*, 181–205.

Dalege, J., Borsboom, D., van Harreveld, F., & van der Mass, H. L. J. (2018). The attitudinal entropy (AE) framework as a general theory on individual attitudes. *Psychological Inquiry*, *29*(4), 175–193.

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.

Deutsch, R., & Strack, F. (2006). Duality models in social psychology: From dual processes to interacting systems. *Psychological Inquiry*, *17*, 166–172.

Devine, P. G. (1989). Stereotypes and prejudice: their automatic and controlled components. *Journal of Personality and Social Psychology*, *56*, 5–18.

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, NY: Psychology Press.

Dovidio, J., 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.

Eagly A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Fort Worth, TX: Harcourt, Brace, Jovanovich.

Eaton, A. A., & Visser, P. S., 2008. Attitude importance: Understanding the causes and consequences of passionately held views. *Social and Personality Psychology Compass*, *2*, 1719–1736.

Elms, A. C. (1966): Influence of fantasy ability on attitude change through role playing. *Journal of Personality and Social Psychology*, *4*, 36–43.

Epstein, S. (2003). Cognitive-experiential self-theory of personality. In T. Millon & M. J. Lerner (Eds.), *Handbook of psychology* (Vol. 5, pp. 159–184). Hoboken, NJ: John 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.

Fabrigar, L. R., & Wegener, D. T. (2010). Attitude structure. In R. F. Baumeister, E. J. Finkel (Eds.), *Advanced social psychology: The state of the science* (pp. 177–216). New York, NY: Oxford University Press.

Falk, E. B., Berkman, E. T., Mann, T., Harrison, B., & Lieberman, M. D. (2010). Predicting persuasion-induced behavior change from the brain. *Journal of Neuroscience*, *30*, 8421–8424.

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. 247–283). Hillsdale, 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., & Towles-Schwen, T. (1999). The MODE model of attitude-behavior processes. In S. Chaiken & Y. Trope (Eds.), *Dual process theories in social psychology* (pp. 97–116). New York, NY: Guilford Press.

Fazio, R. H., Zanna, M., & Cooper, J. (1977). Dissonance and self-perception: An integrative view on each theory's proper domain of application. *Journal of Experimental Social Psychology*, *13*, 464–479

Feinberg, M., & Willer, R. (2013). The moral roots of environmental attitudes. *Psychological Science*, *24*(1), 56–62.

Feinberg, M., & Willer, R. (2015). From gulf to bridge: When do moral arguments facilitate political influence? *Personality and Social Psychology Bulletin*, *41*(12) 1665–1681.

Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 7, 117–140.

Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior*. Reading, MA: Addison-Wesley.

Fishbein, M., & Ajzen, I. (1981). Acceptance, yielding and impact: Cognitive processes in persuasion. In R. E. Petty, T. M. Ostrom, & T. C. Brock (Eds.), *Cognitive responses in persuasion* (pp. 339–359). Hillsdale, NJ: Erlbaum.

Fleming, D. (1967). Attitude: History of a concept. *Perspectives in American History*, *1*, 287–365.

Galton, F. (1884). Measurement of character. *Fortnightly Review*, *42*, 179–185.

Gaertner, S. L., & McLaughlin, J. P. (1983). Racial stereotypes: Associations and ascriptions of positive and negative characteristics. *Social Psychology Quarterly*, *46*, 23–30.

Gawronski, B., & Bodenhausen, G. V. (2006). Associative and prepositional processes in evaluation: An integrative review of implicit and explicit attitude change. *Psychological Bulletin*, *132*, 692–731.

Gawronski, B., & Payne, B. K. (Eds.). (2010). *Handbook of implicit social cognition: Measurement, theory, and applications*. New York, NY: Guilford Press.

Geers, A. L., Briñol, P., & Petty, R. E. (in press). An analysis of the basic processes of formation and change of placebo expectancies. *Review of General Psychology*.

Gouaux, C. (1971). Induced affective states and interpersonal attraction. *Journal of Personality and Social Psychology*, *29*, 37–43.

Greenwald, A. G. (1968). Cognitive learning, cognitive response to persuasion, and attitude change. In A. Greenwald, T. Brock, & T. Ostrom (Eds.), *Psychological foundations of attitudes* (pp. 148–170). New York, NY: Academic Press.

Greenwald, A. G., & Banaji, M. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, *102*, 4–27.

Greenwald, A. G., Banaji, M. R., Rudman, L. A., Farnham, S. D., Nosek, B. A., & Mellott, D. S. (2002). A unified theory of implicit attitudes, stereotypes, self-esteem, and self-concept. *Psychological Review*, *109*, 3–25.

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The Implicit Association Task. *Journal of Personality and Social Psychology*, *74*, 1464–1480.

Gregg, A. P., Seibt, B, & Banaji, M. R. (2006). Easier done than undone: Asymmetry in the malleability of implicit preferences. *Journal of Personality and Social Psychology*, *90*, 1–20.

Guyer, J. J., Briñol, P., Petty, R. E., & Horcajo, J. (2019). Non-verbal behavior of persuasive sources: A multiple process analysis. *Journal of Nonverbal Behavior*, 1–29.

Guyer, J. J., & Fabrigar, L. R. (2015). The attitude-behavior link: A review of the history. In J. Wright & J. Berry (Eds.), *International encyclopedia of social and behavioral sciences* (2nd ed., Vol. 2, pp. 183–189). Elsevier.

Haidt, J., & Graham, J. (2007). When morality opposes justice: Conservatives have moral intuitions that liberals may not recognize. *Social Justice Research*, *20*(1), 98–116.

Hammond, K. R. (1948). Subject and object sampling: A note. *Psychological Bulletin*, *45*, 530–533.

Harmon-Jones, E., & Harmon-Jones, C. (2007). Cognitive dissonance theory after 50 years of development. *Zeitschrift fur Sozialpsychologie*, *38*, 7–16.

Heesacker, M. H., Petty, R. E., & Cacioppo, J. T. (1983). Field dependence and attitude change: Source credibility can alter persuasion by affecting message-relevant thinking. *Journal of Personality*, *51*, 653–666.

Heider, F. (1958). *The psychology of interpersonal relations*. New York, NY: Wiley.

Hess, E. H., & Polt, J. M. (1960). Pupil size as related to interest value of visual stimuli. *Science*, *132*, 349–350.

Hofmann, W., De Houwer, J., Perugini, M., Baeyens, F., & Crombez, G. (2010). Evaluative conditioning in humans: A meta-analysis. *Psychological Bulletin*, *136*, 390–421.

Horcajo, J., Briñol, P., & Petty, R. E. (2014). Multiple roles for majority versus minority source status on persuasion when source status follows the message. *Social Influence*, 9, 37–51.

Horcajo, J., Briñol, P., & Petty, R. E. (2017). Majority versus minority source status and persuasion: Processes of primary and secondary cognition. In S. Papastamous, A. Gardikiotis, & G. Prodromitis (Eds.), *Majority and minority influence: Societal meanings and cognitive elaboration* (pp. 98–116). New York, NY: Psychology Press.

Hovland, C. I., Janis, I. L., & Kelley, H. H. (1953). *Communication and persuasion: Psychological studies of opinion change*. New Haven, CT: Yale University Press.

Huskey, R., Mangus, J. M., Turner, B.O., & Weber, R. (2017). The persuasion network is modulated by drug use risk and predicts anti-drug message effectiveness. *Social Cognitive and Affective Neuroscience*, *12*, 1902–1915.

Janis, I. L. (1968). Attitude change via role playing. In R. Abelson, E. Aronson, W. M. McGuire, T. Newcomb, M. Rosenberg, & P. Tannenbaum (Eds.), *Theories of cognitive consistency: A sourcebook*. Chicago, IL: Rand McNally.

Janis, I. L., & King, B. T. (1954). The influence of role-playing on opinion change. *Journal of Abnormal and Social Psychology*, *49*, 211–218.

Jarvis, W. B. G., & Petty, R. E. (1996). The need to evaluate. *Journal of Personality and Social Psychology*, *70*, 172–194.

Jones, C. R., & Albarracín, D. (2016). Public communication for drug abuse prevention: A synthesis of current meta-analytic evidence of message efficacy. In E. C. Kopetz & C. W. Lejuez (Eds.), *Addictions: A social psychological perspective* (pp. 257–280). New York, NY: Routledge.

Jones, E. E., & Davis, K. E. (1965). From acts to dispositions: The attribution process in person perception. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 2, pp. 219–266). New York, NY: Academic Press.

Jones, C. R., Fazio, R. H., & Olson, M. A. (2009). Implicit misattribution as a mechanism underlying evaluative conditioning. *Journal of Personality and Social Psychology*, *96*, 933–948.

Johnson, B. T., Smith-McLallen, A., Killeya, L. A., & Levin, K. D. (2004). Truth or consequences: Overcoming resistance to persuasion with positive thinking. In E. S. Knowles & J. A. Linn, (Eds.), *Resistance and persuasion* (pp. 215–234). Mahwah, NJ: Erlbaum.

Jost, J. T., Kruglanski, A. W., & Nelson, T. O. (1998). Social meta-cognition: An expansionist review. *Personality and Social Psychology Review*, *2*, 137–154.

Horcajo, J., Briñol, P., & Petty, R. E. (2010). Consumer persuasion: Indirect change and implicit balance. *Psychology and Marketing*, *27*, 938–963.

Kahneman, D. (2003). Maps of bounded rationality: Psychology for behavioral economics. *The American Economic Review*, *93*(5), 1449–1475.

Karpinski, A., & Hilton, J. L. (2001). Attitudes and the Implicit Association Test. *Journal of Personality and Social Psychology*, *81*, 774–788.

Kelman, H. C. (1958). Compliance, identification and internalization: Three processes of attitude change. *Journal of Conflict Resolution*, *2*, 51–60.

Kelman, H. C., & Hovland, C. I. (1953). "Reinstatement" of the communicator in delayed measurement of opinion change. *Journal of Abnormal and Social Psychology*, *48*, 327–335.

Kidwell, B., Farmer, A., & Hardesty, D. M. (2013). Getting liberals and conservatives to go green: Political ideology and congruent appeals. *Journal of Consumer Research*, *40*(2), 350–367.

Kiesler, C. A., Collins, B. E., & Miller, N. (1969). *Attitude change*. Oxford, U.K.: Wiley.

King, B. T., & Janis, I. L. (1956). Comparison of the effectiveness of improvised versus non-improvised role-playing in producing opinion changes. *Human Relations*, *9*, 177–186.

Krosnick, J. A., & Petty, R. E. (1995). Attitude strength: An overview. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 1–24). Mahwah, NJ: Erlbaum.

Krosnick, J. A., Judd, C. M., & Wittenbrink, B. (2005). The measurement of attitudes. In D. Albarracin, B. T. Johnson, & M. P. Zanna (Eds.), *The handbook of attitudes* (pp. 21–76). Mahwah, NJ: Erlbaum.

Kruglanski, A. W., Erb, H. P., Pierro, A., & Spiegel, S. (2003). A parametric unimodel of human judgment: A fanfare to the common thinker. In L. G. Aspinwall & U. M. Staudinger (Eds.), *A psychology of human strengths: Perspectives on an emerging field*. Washington, DC: APA Press.

Kruglanski, A. W., & Thompson, E. P. (1999). Persuasion by a single route: A view from the unimodel. *Psychological Inquiry*, *10*, 83–109.

Le Bon, G. (2017). *La psychologie des foules*. CA: Createspace Independent Publishing Platform.

Levitan, L.C., & Verhulst, B. (2016). Conformity in groups: The effects of others' views on expressed attitudes and attitude change. *Political Behavior*, *38*, 277–315.

Lieberman, M. D. (2000). Intuition: A social cognitive neuroscience approach. *Psychological Bulletin*, *126*, 109–137.

Likert, R. (1932). A technique for the measurement of attitudes. *Archives of Psychology*, *140*, 1–55.

Lorge, I. (1936). Prestige, suggestion, and attitudes. *Journal of Social Psychology*, 7, 386–402.

Luttrell, A., Briñol, P., Petty, R. E., Cunningham, W., & Diaz, D. (2013). Metacognitive confidence: A neuroscience approach. *Revista de Psicologia Social*, *28*, 317–332.

Luttrell, A., Petty, R. E., & Briñol, P. (2016). Ambivalence and certainty can interact to predict attitude stability over time. *Journal of Experimental Social Psychology*, *63*, 56–68.

Luttrell, A., Stillman, P. E., Hasinski, A., & Cunningham, W. A. (2016). Neural dissociations in attitude strength: Distinct regions of cingulate cortex track ambivalence and certainty. *Journal of Experimental Psychology: General*, *145*(4), 419–433.

Mackie, D. M., & Worth, L. T. (1989). Processing deficits and the mediation of positive affect in persuasion, *Journal of Personality and Social Psychology*, *57*(1), 27–40.

Maio, G. R., Haddock, G., & Verplanken, B. (2019). *The psychology of attitudes and attitude change* (3rd ed.). Thousand Oaks, CA: SAGE.

Martin, R., & Hewstone, M. (2008). Majority versus minority influence, message processing and attitude change: The source-context-elaboration model. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 40, pp. 237–326). San Diego, CA: Academic Press.

McGuire, W. J. (1964). Inducing resistance to persuasion: Some contemporary approaches. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 1, pp. 191–229). New York, NY: Academic Press.

McGuire, W. J. (1985). Attitudes and attitude change. In G. Lindzey & E. Aronson (Eds.), *Handbook of social psychology* (3rd ed., Vol. 2, pp. 233–346). New York, NY: Random House.

Milgram, S., Mann, L., & Harter, S. (1965). The lost-letter technique: A tool of social research. *Public Opinion Quarterly*, *29*, 3, 437.

Moore, H. T. (1921). The comparative influence of majority and expert opinion. *Journal of Psychology*, *32*, 16–20.

Moscovici, S. (1980). Toward a theory of conversion behavior. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 13, pp. 209–239). New York, NY: Academic Press.

Murphy, G., & Murphy, L. B. (1931). *Experimental social psychology*. Oxford, U.K.: Harper.

Newcomb, T. M. (1943). *Personality and social change*. Ft. Worth, TX: Dryden Press.

Norman, R. (1975). Affective-cognitive consistency, attitudes, conformity, and behavior. *Journal of Personality and Social Psychology*, *32*, 83–91.

Olson, M. A., & Fazio, R. H. (2001). Implicit attitude formation through classical conditioning. *Psychological Science*, *12*, 413–417.

Osgood, C. E., Suci, G. J., & Tanenbaum, P. D. (1957). *The measurement of meaning*. Urbana: University of Illinois Press.

Papastamou, S., Gardikiotis, A., & Prodromitis, G. (2017). *Majority and minority influence: Societal meanings and cognitive elaboration*. New York, NY: Psychology Press.

Petty, R. E. (1997). The evolution of theory and research in social psychology: From single to multiple effect and process models. In C. McGarty & S. A. Haslam (Eds.), *The message of social psychology: Perspectives on mind in society* (pp. 268–290). Oxford, U.K.: Blackwell.

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, NY: Psychology Press.

Petty, R. E., & Briñol, P. (2008). Persuasion: From single to multiple to meta-cognitive processes. *Perspectives on Psychological Science*, *3*, 137–147.

Petty, R. E., & Briñol, P. (2012). The elaboration likelihood model. In P. A. M. Van Lange, A. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (Vol. 1, pp. 224–245). London, U.K.: SAGE.

Petty, R. E., & Briñol, P. (2015). Emotion and persuasion: Cognitive and meta-cognitive processes impact attitudes. *Cognition and Emotion*, *29*, 1–26.

Petty, R. E., & Briñol, P. (2019). The AEM: Reinforcing our knowledge about attitudes using a physics metaphor. *Psychological Inquiry*, *29*(4), 203–207.

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., Fabrigar, L. R., & Wegener, D. T. (2019). Attitude structure and change. In R. F. Baumeister & E. J. Finkel (Eds.), *Advanced social psychology* (2nd ed.). Oxford, U.K.: Oxford University Press.

Petty, R. E., Briñol, P., & Tormala, Z. L. (2002). Thought confidence as a determinant of persuasion: The self-validation hypothesis. *Journal of Personality and Social Psychology*, *82*, 722–741.

Petty, R. E., Briñol, P., Tormala, Z. L., & Wegener, D. T. (2007). The role of meta-cognition 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, NY: Guilford Press.

Petty, R. E., & Cacioppo, J. T. (1979). 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. (1981). *Attitudes and persuasion: Classics and contemporary approaches*. Dubuque, IA: Win C. Brown.

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, NY: Springer-Verlag.

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, NY: Psychology Press.

Petty, R. E., Harkins, S. G., & Williams, K. D. (1980). The effects of group diffusion of cognitive effort on attitudes: An information processing view. *Journal of Personality and Social Psychology*, *38*, 81–92.

Petty, R. E., 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., Ostrom, T. M., & Brock, T. C. (1981). *Cognitive responses in persuasion*. Hillsdale, 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. (1998). Attitude change: Multiple roles for persuasion variables. In D. Gilbert, S. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., Vol. 1, pp. 323–390). New York, NY: McGraw-Hill.

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.

Petty, R. E., Wheeler, S. C., & Bizer, G. (2000). Matching effects in persuasion: An elaboration likelihood analysis. In G. Maio & J. Olson (Eds.), *Why we evaluate: Functions of attitudes* (pp. 133–162). Mahwah, NJ: Erlbaum.

Proshansky, H. M. (1943). A projective method for the study of attitudes. *Journal of Abnormal & Social Psychology*, *38*, 393–395.

Rankin, R. E., & Campbell, D. T. (1955). Galvanic skin response to Negro and white experimenters. *The Journal of Abnormal and Social Psychology*, *51*(1), 30–33.

Rios, K., DeMarree, K. G., & Statzer, J. (2014). Attitude certainty and conflict style: Divergent effects of correctness and clarity. *Personality and Social Psychology Bulletin*, *40*, 819–830.

Rucker, D. D., & Petty, R. E. (2004). When resistance is futile: Consequences of failed counter-arguing for attitude certainty. *Journal of Personality and Social Psychology*, *86*, 219–235.

Rucker, D. D., Tormala, Z. L., Petty, R. E., & Briñol, P. (2014). Consumer conviction and commitment: An appraisal-based framework for attitude certainty. *Journal of Consumer Psychology*, *24*, 119–136.

Rydell, R. J., & Durso, G.R.O. (2012). Can I borrow a feeling? Spillover of negative arousal from inconsistent information during attitude formation, *Journal of Experimental Social Psychology*, *48*, 575–578.

Scher, S. J., & Cooper, J. (1989). Motivational basis of dissonance: The singular role of behavioral consequences. *Journal of Personality and Social Psychology*, *56*, 899–906.

Schmidt, J., & De Houwer, J. (2012). Learning, awareness, and instruction: Subjective contingency awareness does matter in the colour-word contingency learning paradigm. *Consciousness and Cognition*, *21*, 1754–1768.

Schwarz, N., Bless, H., Strack, F., Klumpp, G., Rittenauer-Schatka, H., & Simons, A. (1991). Ease of retrieval as information: Another look at the availability heuristic. *Journal of Personality and Social Psychology*, *61*, 195–202.

Schwarz, N., & Bohner, G. (2001). The construction of attitudes. In A. Tesser & N. Schwarz (Eds.), *Blackwell handbook of social psychology: Intra-individual processes* (pp. 436–457). Malden, MA: Blackwell.

Sheeran, P., Maki, A., Montanaro, E., Avishai-Yitshak, A., Bryan, A., Klein, W., . . . Rothman, A. (2016). The impact of changing attitudes, norms, and self-efficacy on health-related intentions and behavior: A meta-analysis. *Health Psychology*, *35*, 1178–1188.

See, Y. H. M., Fabrigar, L. R., & Petty, R. E. (2013). Affective-cognitive meta-bases versus structural bases of attitudes predict processing interest versus efficiency. *Personality and Social Psychology Bulletin*, *39*, 1111–1123.

Shavitt, S., & Fazio, R. H. (1991). Effects of attribute salience on the consistency between attitudes and behavior predictions. *Personality and Social Psychology Bulletin*, *17*, 507–516.

Sherif, M. (1936). *The psychology of social norms*. New York, NY: Harper & Row.

Sherif, M., & Sherif, C. (1967). Attitude as the individual's own categories: The social judgment involvement approach to attitude and attitude change. In C. Sherif & M. Sherif (Eds.), *Attitude, ego-involvement, and change*. New York, NY: Wiley.

Sherman, D. K., & Cohen, G. L. (2006). The psychology of self-defence: Self-affirmation theory. In L. M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 38, pp. 183–242). San Diego, CA: Academic Press.

Sherman, J. W., Gawronski, B., & Trope, Y. (2014). Dual-process theories of the social mind. New York, NY: Guildford Press.

Skitka, L. J., Bauman, C. W., & Sargis, E. G. (2005). Moral conviction: Another contributor to attitude strength or something more? *Journal of Personality and Social Psychology*, *88*, 895–917.

Skitka, L. J., Hanson, B. E., Washburn, A. N., & Mueller, A. B. (2018). Moral and religious convictions: Are they the same or different things? *PLoS One*, *13*(6), 1–18.

Smith, E. R., & DeCoster, J. (2000). Dual-process models in social and cognitive psychology: Conceptual integration and links to underlying memory systems. *Personality and Social Psychology Review*, *4*, 108–131.

Smith, S. M., Fabrigar, L. R., MacDougall, B. L., & Wiesenthal, 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.

Snyder, M. (1974). Self-monitoring of expressive behavior. *Journal of Personality and Social Psychology*, *30*, 526–537.

Staats, A. W., & Staats, C. (1958). Attitudes established by classical conditioning. *Journal of Abnormal and Social Psychology*, *67*, 159–167.

Staats, A. W., Staats, A. W., Crawford, H. L. (1962). First-order conditioning. *Journal of Abnormal and Social Psychology*, *57*, 37–40.

Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 21, pp. 261–302). New York, NY: Academic Press.

Stroebe, W., & Diehl, M. (1988). When social support fails: Supporter characteristics in compliance-induced attitude change. *Personality and Social Psychology Bulletin*, *14*, 136–144.

Stuart, E. W., Shimp, T. A., & Engle, R. W. (1987). Classical conditioning of consumer attitudes: Four experiments in an advertising context. *Journal of Consumer Research*, *14*, 334–349.

Teeny, J., Briñol, P., & Petty, R. E. (2017). The elaboration likelihood model: Understanding consumer attitude change. In C. V. Jansson-Boyd & M. J. Zawisza (Eds.), *Routledge international handbook of consumer psychology* (pp. 390–410). Abingdon, U.K.: Routledge.

Teeny, J. D., & Petty, R. E. (2018). The role of perceived attitudinal bases on spontaneous and requested advocacy. *Journal of Experimental Social Psychology*, *76*, 175–185.

Tesser, A. (1988). Toward a self-evaluation maintenance model of social behavior. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 21, pp. 181–227). New York, NY: Academic Press.

Tesser, A. (2001). On the plasticity of self-defence. *Current Directions in Psychological Science*, *10*, 66–69.

Tesser, A., Martin, L., & Mendolia, M. (1995). The impact of thought on attitude extremity and attitude-behavior consistency (pp. 73–92). In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences*. Mahwah, NJ: Erlbaum Associates.

Thomas, W. I., & Znaniecki, F. (1918). *The Polish Peasant in Europe and America*. Vol. 1. Boston: Badger.

Thurstone, L. L. (1928). Attitudes can be measured. *American Journal of Sociology, 33*, 529–554.

Tormala, Z. L., DeSensi, V. L., & Petty, R. E. (2007). Resisting persuasion by illegitimate means: A meta-cognitive perspective on minority influence. *Personality and Social Psychology Bulletin*, *33*, 354–367.

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.

Triplett, N. (1897). The dynamogenic factors in peacemaking and competition. *American Journal of Psychology*, *9*, 507–533.

van Harreveld, F., van der Pligt, J., & de Liver, Y. N. (2009). The agony of ambivalence and ways to resolve it. *Personality and Social Psychology Review*, *13*, 45–61.

Vezich, S. I., Katzman, P. L, Ames, D. L., Falk, E. B., & Lieberman, M. D. (2017). Modulating the neural bases of persuasion: Why/how, gain/loss, users/non-users. *Social Cognitive and Affective Neuroscience*, *12*, 283–297.

Visser, P. S., & Mirabile, R. R. (2004). Attitudes in the social context: The impact of social network composition on individual-level attitude strength. *Journal of Personality and Social Psychology*, *87*, 779–795.

Vogel, T., & Wanke, W. (2016). *Attitudes and attitude change* (2nd ed.). New York, NY: Routledge.

Walton, G. M., Logel, C., Peach, J. M., Spencer, S. J., & Zanna, M. P. (2015). Two brief interventions to mitigate a chilly climate transform women's experience, relationships, and achievement in engineering. *Journal of Educational Psychology*, *107*, 468–485.

Weigel, R. H., & Newman, L. S. (1976). Increasing attitude-behavior correspondence by broadening the scope of the behavioral measure. *Journal of Personality and Social Psychology*, *33*, 793–802.

Wicker, A. W. (1969). Attitudes versus actions: The relationship of verbal and overt behavioral responses to attitude objects. *Journal of Social Issues*, *25*, 41–78.

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 Associates.

Wilson, T. D., Lindsey, S., & Schooler, T. Y. (2000). A model of dual attitudes. *Psychological Review*, *107*, 101–126.

Wittenbrink, B., & Schwarz, N. (Eds.). (2007). *Implicit measures of attitudes*. New York, NY: Guilford Press.

Wolsko, C., Ariceaga, H., & Seiden, J. (2016). Red, white, and blue enough to be Green: Effects of moral framing on climate change attitudes and conservation behaviors. *Journal of Experimental Social Psychology*, *65*, 7–19.

Wood, W. (2017). Habit in personality and social psychology. *Personality and Social Psychology Review*, *21*, 389–403.

Zajonc, R. B. (1968). Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology*, *9*, 1–27.

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A Historical View on Attitudes and Persuasion

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