

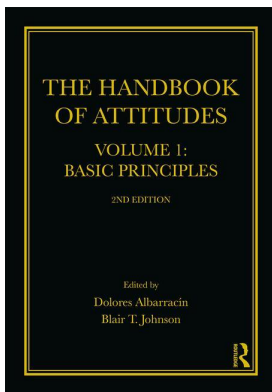
This article was downloaded by: 10.2.97.136

On: 23 Sep 2023

Access details: *subscription number*

Publisher: *Routledge*

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



## **The Handbook of Attitudes Volume 1: Basic Principles**

Dolores Albarracín, Blair T. Johnson

### **The Origins and Structure of Attitudes**

Publication details

<https://test.routledgehandbooks.com/doi/10.4324/9781315178103-3>

Leandre R. Fabringar, Tara K. MacDonald, Duane T. Wegener

**Published online on: 04 Sep 2018**

**How to cite :-** Leandre R. Fabringar, Tara K. MacDonald, Duane T. Wegener. 04 Sep 2018, *The Origins and Structure of Attitudes from: The Handbook of Attitudes, Volume 1: Basic Principles* Routledge

Accessed on: 23 Sep 2023

<https://test.routledgehandbooks.com/doi/10.4324/9781315178103-3>

**PLEASE SCROLL DOWN FOR DOCUMENT**

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

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

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

# 3

## THE ORIGINS AND STRUCTURE OF ATTITUDES

*Leandre R. Fabrigar, Tara K. MacDonald, and Duane T. Wegener*

Few constructs in social psychology and the social sciences more generally have been as influential as the construct of *attitude* (Allport, 1935). Over the years, some social scientists have used the term “attitude” to refer to a wide range of subjective judgments, whereas others have used the term more narrowly to refer to evaluative judgments of targets. In contemporary social psychology, an attitude is typically defined as a relatively general and enduring evaluation of an object or concept on a valence dimension ranging from negative to positive. These evaluations can be attached to virtually anything, including people, social groups, physical objects, behaviors, and abstract concepts. Given that attitudes have typically been defined in terms of valence (negative versus positive) and extremity (the magnitude of the deviation of the evaluation from neutrality), it is not surprising that traditional attitude measurement techniques have represented an attitude as a single numerical value on an evaluative continuum (e.g., see Likert, 1932; Thurstone, 1928). However, even early theorists recognized that any measure describing an attitude exclusively in terms of its valence and extremity was inadequate to capture all the relevant properties of an attitude (e.g., see Thurstone, 1928). Thus, many early attitude theorists proposed additional properties of attitudes that were important to understanding attitudinal processes. For instance, they suggested that it was useful to distinguish between different types of evaluative responses comprising attitudes (i.e., affect, cognition, and behavior; e.g., Katz & Stotland, 1959; Rosenberg & Hovland, 1960), the functions that attitudes can serve (e.g., Katz & Stotland, 1959; Smith, Bruner, & White, 1956), the amount of information on which attitudes are based (e.g., Rosenberg & Abelson, 1960), and the extent to which attitudes are linked to other attitudes (e.g., Converse, 1964). In short, attitude researchers have long acknowledged the importance of understanding the structure of attitudes.

### **Core Definitions and Concepts**

#### ***What Is Attitude Structure?***

It has been noted (see Fabrigar, MacDonald, & Wegener, 2005) that although the term “attitude structure” has been widely used, precise definitions have often been lacking. In light of this fact, it is helpful to consider what is implied by the term. The concept of structure begins with one’s conceptualization of attitude. Attitudes have usually been defined as relatively general and enduring evaluations of objects. For an attitude per se to exist, it makes sense to view the attitude as a type of knowledge structure stored in memory or created at the time of judgment. Some attitude

theorists have proposed that attitudes be thought of as object–evaluation associations (e.g., Fazio, 1995, 2007). That is, an attitude can be viewed as a simple two–node semantic network, with one node representing the object, the second node the global evaluation of the object, and the link between the two nodes representing the strength of the association.<sup>1</sup>

Attitude theorists have also postulated that people’s object–evaluation associations (attitudes) will often be linked in memory to other knowledge structures (see Dalege, Borsboom, van Harreveld, van den Berg, Conner, & van der Maas, 2016; Eagly & Chaiken, 1998; Fabrigar et al., 2005; Fabrigar & Wegener, 2010). For instance, such linked knowledge structures might include specific attributes or emotional responses linked to the object as well as to the general evaluation of the object (e.g., see Zanna & Rempel, 1988). These knowledge structures could also include functions served by the attitude (e.g., Murray, Haddock, & Zanna, 1996) or metacognitions (i.e., people’s beliefs regarding their own thoughts or thought processes) “tagging” the evaluation as relatively valid or invalid (e.g., Petty, Briñol, & DeMarree, 2007).

Thus, attitude structure can be viewed as an object–evaluation association and the knowledge structures linked to it in memory. The term attitude structure is usually used to refer to various properties reflecting (a) the content of the knowledge structures associated with the attitude, (b) the number of knowledge structures associated with the attitude, (c) the strength of the associative links making up the attitude and its related knowledge structures, and (d) the pattern and number of associative links among the attitude and its related knowledge structures (see also Dalege et al., 2016; Fabrigar & Wegener, 2010; Fabrigar et al., 2005). Within the context of this general definition, some theorists have further distinguished between two broad categories of attitude structure (Eagly & Chaiken, 1998; McGuire, 1989). *Intra-attitudinal structure* refers to the structure of a single attitude, whereas *inter-attitudinal structure* refers to structures comprising more than one attitude.

### ***Attitudes: Stored Knowledge Structures or Temporary Constructions?***

Before discussing the major findings in the attitude structure literature, it is useful to address one final assumption that has guided this research. Thus far, our discussion has conceptualized attitudes as stored global evaluations that can be accessed from memory (sometimes with little active effort). This perspective has long dominated the attitudes literature and continues to be the most prevalent perspective. However, some theorists have suggested that attitudes are more appropriately conceptualized as temporary constructions, created at the time people are asked to make attitudinal judgments (e.g., Bem, 1972; Schwarz & Bohner, 2001; Wilson & Hodges, 1992). According to this perspective, people generally lack pre–consolidated global evaluations. When prompted to express their attitudes, people consider readily available information and integrate this information into an overall attitudinal judgment.

The idea that people sometimes construct evaluative judgments is not in itself controversial. Advocates of the traditional perspective have long postulated that for any given attitude object, only a subset of people will have clearly formed global evaluations that can be retrieved from memory (see Petty & Krosnick, 1995). Others may lack well–developed global evaluations and need to construct their attitudes when asked to report them (see Priester, Nayakankuppum, Fleming, & Godek, 2004). From this perspective, some attitudes fall somewhere between the two extremes (i.e., a global evaluation may exist, but it is only weakly associated with the object and thus is retrieved alongside constructive processes). Thus, for advocates of the traditional view, both the traditional stored evaluations and temporary construction perspectives simply describe attitudes with different structural properties (see also Dalege et al., 2016).

The strong version of the temporary construction view is more controversial because it holds that nearly all attitudes are constructed. Critics of this view have raised several objections (see Fabrigar et al., 2005; Fazio, 2007; Fazio & Olson, 2003a). For example, they find it inconsistent to assume

that global evaluations of objects are not stored but that people do store evaluations of specific attributes or emotions associated with objects (which themselves could be considered attitudes). The logic is unclear for why evaluations would be stored for attributes or emotions but not other objects. Indeed, in the strongest version of a “constructionist” view, one would presumably not allow for stored evaluations of attributes or emotions any more than for objects. Information would have to be stored in a “nonevaluative” form, waiting to take on evaluative meaning in a particular context. But one would have to possess a concept of evaluation of some sort to interpret those contexts. Thus, the representation of evaluation at some level seems necessary. But if allowed at some level, then why not at other levels?

Attitudes are thought to be highly functional in preparing people to approach positively evaluated objects or avoid negatively evaluated objects. In that context, it seems unlikely that all assessments of goodness or badness are constructed anew upon encountering even familiar objects. Moreover, given that advocates of the constructionist view do not dispute that semantic knowledge can be acquired, it is not clear why memory systems would not also permit the acquisition of evaluative knowledge. Indeed, such learning is itself highly functional and people might be expected to be especially prone to learn evaluative information (Olson, Kendrick, & Fazio, 2009). Perhaps due in part to these considerations, the predominant view of attitudes treats them as stored in memory and as embedded in existing knowledge structures (though sometimes created or updated based on consideration of new information or knowledge stored in memory).

### **An Overview of Structural Properties of Attitudes**

The broad definition of attitude structure we outlined can encompass a vast array of specific structural properties. One central theme of attitudes research in the 1980s and 1990s was to identify structural features that are important for understanding attitudes and then develop measures and/or manipulations of these properties so their effects could be examined. We briefly describe the structural properties that have received the most attention and then, in the sections that follow, we turn to research on the effects these properties.

#### ***Attitude Accessibility***

Perhaps the most basic structural property of attitudes is accessibility. Accessibility can be viewed as the strength of the associative link between the object and evaluation, such that highly accessible attitudes are automatically activated from memory when that object is encountered (Fazio, Sanbonmatsu, Powell, & Kardes, 1986). Alternatively, accessibility could be represented in the connection weights within a connectionist model. In such a model, accessibility is reflected by the ability of partial stimulus input to “quickly” and accurately produce the entire pattern of activation for the attitude (e.g., see Smith & DeCoster, 1998). Attitude accessibility is usually measured by asking people to categorize the object as quickly but accurately as possible using highly evaluative adjectives (e.g., “good” vs. “bad”). Typically, a computer records the response latency to these evaluative judgments, where faster reaction times reflect higher levels of accessibility. In a few cases, researchers have also explored the use of subjective judgments of ease of attitudinal retrieval (Bassili, 1996; Holbrook & Krosnick, 2010).

Although attitude accessibility has a number of determinants, the most documented is the frequency with which the attitude has been activated (i.e., accessed from long-term memory). Repeated expressions of the attitude (the most common experimental manipulation of accessibility) strengthen the association between object and evaluation, making retrieval of the evaluation from memory easier and faster (e.g., Fazio, Chen, McDonel, & Sherman, 1982; Powell & Fazio, 1984). Another factor postulated to influence accessibility is the diagnosticity of the information upon

which the attitude is based. Information from sources seen as highly credible, sensory information about the object, emotional reactions elicited by the object, past behavior toward the object, and direct experience with the object are all classes of information that are likely to be viewed as especially diagnostic (Fazio, 1995).

### ***Content of Attitude-Relevant Information***

Another widely explored property of attitude structure is the type of evaluative information with which the attitude is associated. One could categorize such information in a variety of ways. However, two systems of categorization have been especially influential.

#### ***Affective/Cognitive/Behavioral Bases***

Tripartite theory, the notion that attitudes have affective, cognitive, and behavioral components, has enjoyed a long history (e.g., Katz & Stotland, 1959; Rosenberg & Hovland, 1960; Smith, 1947; see also Clore & Schnall, this volume; Harmon-Jones, Armstrong, & Olson, this volume; Wegener, Clark, & Petty, this volume). Traditionally, affect has described the positive and negative feelings elicited by an attitude object. Cognition has referred to beliefs that one holds about the attitude object, and behavior has described overt actions and responses to the attitude object. In its original form, tripartite theory held that attitudes were composed of these three components, which subsequent researchers demonstrated are distinguishable from each other (e.g., Breckler, 1984; Ostrom, 1969).

While acknowledging these early contributions, contemporary attitude researchers modified tripartite theory to view affect, beliefs and behavior as *related to* attitudes rather than as necessary components of attitudes (e.g., Cacioppo, Petty, & Geen, 1989; Zanna & Rempel, 1988). Advocates of this “neotripartite” perspective argued that affect is best conceptualized as specific and distinct emotional states, in contrast to the more generally evaluative “approval or disapproval” (Smith, 1947, p. 509) or “attribution of good or bad qualities” (Katz & Stotland, 1959, p. 430) that come close to contemporary definitions of attitudes themselves. Thus, the contemporary view treats attitude as an entity distinguishable from the classes of affect, behavior, and cognition. That is, rather than consisting of these elements, attitude is instead a general evaluative summary of the information derived from these bases (Cacioppo et al., 1989; Crites, Fabrigar, & Petty, 1994; Zanna & Rempel, 1988).

One important implication of both versions of the tripartite perspective is that attitudes can vary in the extent to which each base contributes to the attitude (see Breckler & Wiggins, 1989; Crites et al., 1994; Eagly, Mladinic, & Otto, 1994). Most research on this distinction has focused on attitudes that are based primarily on affect versus cognition. Variations in affective–cognitive bases have typically been assessed by separately measuring affect, cognition, and global attitude and then computing an index of congruency between the global attitude and each of the two bases (e.g., Crites et al., 1994; Eagly et al., 1994; Fabrigar & Petty, 1999). More recently, researchers have also measured the bases of attitudes by asking people to directly report the extent to which their attitudes are based on affect and on cognition (e.g., See, Petty, & Fabrigar, 2008, 2013). Still others have measured attitude bases using broad dispositional measures of need for cognition and need for affect (e.g., Aquino, Haddock, Maio, Wolf, & Alparone, 2016; Haddock, Maio, Arnold, & Huskinson, 2008). Interestingly, scores derived from the three approaches are only weakly associated, and the effects produced by each seem to reflect somewhat different psychological processes (Aquino et al., 2016; See et al., 2008, 2013).

It is also possible to manipulate attitude bases by shifting the modality of information acquisition (e.g., sensory vs. written) or the emotional versus factual nature of written information about the object (e.g., Fabrigar & Petty, 1999). Other studies attempted to manipulate bases by varying the

order in which people received affective versus cognitive information under the assumption that the information presented first would be most influential (e.g., Edwards, 1990; Edwards & von Hippel, 1995) or instructed people to focus on either their feelings regarding the attitude object or reasons for holding their attitudes (e.g., Edwards & Von Hippel, 1995; Millar & Tesser, 1986b, 1989; Millar & Millar, 1990).

### *Functional Nature of Attitudes*

Attitude theorists have long postulated that people hold attitudes because they serve useful functions (e.g., Katz & Stotland, 1959; Maio & Olson, 2000; Smith et al., 1956). Theorists have proposed different, but often overlapping functions for attitudes. However, the functions receiving the most attention are the knowledge function (i.e., the management and simplification of information processing), utilitarian function (i.e., achievement of desired goals and avoidance of negative outcomes), ego-defensive function (i.e., the maintenance or promotion of self-esteem), value-expressive function (i.e., aligning of actions with one's values and self-concept), and social-adjustive function (i.e., the facilitation of identification with liked others).

It has not been common to refer to attitude functions as a structural property, but they can be conceptualized as such (Fabrigar et al., 2005). Specifically, attitudes may serve different functions in part because they are associated with different types of information. For instance, an attitude with strong associations in memory to beliefs about important values could result in an attitude that serves a value-expressive function. Thus, attitude function theories can be viewed as systems for categorizing information associated with the attitude. Moreover, just as attitude-relevant information can vary in affective, cognitive, or behavioral content, it can also vary in functional content.

Attitude functions have been measured in several ways. Some researchers identified attitude functions using the trait of self-monitoring (see Snyder & DeBono, 1989) or the type of attitude object (see Shavitt, 1989, 1990). Others have developed self-report measures to assess attitude functions related to specific attitude objects (Herek, 1987). In a few cases, researchers have experimentally manipulated attitude functions by exposing people to information that makes a particular function salient (e.g., Ennis & Zanna, 2000; Maio & Olson, 1995).

### *Amount and Complexity of Attitude-Relevant Information*

Another way to characterize attitude-relevant information has been in terms of the extensiveness of the evaluative knowledge associated with the attitude. Typically, this has involved either considering the working knowledge associated with the attitude or the dimensional breadth of this information.

#### *Working Knowledge*

Working knowledge is defined as the number of attitude-relevant beliefs and experiences that are spontaneously activated when encountering an object (Wood, 1982; Wood, Rhodes, & Bick, 1995). It is useful to highlight three implications of this definition. First, there is nothing inherent in the definition that restricts it to the cognitive basis of attitudes. Activated experiences could have strong affective or behavioral content. Second, this definition does not imply anything about the accuracy of beliefs/experiences (Wood et al., 1995; Scott, 1969). Some have argued that knowledge that readily comes to mind is the most representative index of the thoughts, feelings, and behavioral information that a person uses when evaluating that attitude object (e.g., Wood et al., 1995), and this knowledge may be more useful than factual accuracy when predicting how the attitude will influence behavior or respond to persuasive appeals. However, accuracy of information has sometimes been found to be diagnostic of attitude outcomes (e.g., see Davidson, 1995). Finally, working



knowledge is likely only a subset of the total knowledge a person possesses regarding the attitude object (Wood, 1982). Thus, from a structural standpoint, working knowledge is likely a function of the number of knowledge structures associated with the attitude and the strength of the associations among the knowledge structures and with the attitude.

One commonly used measure of working knowledge is to ask participants to list all of the thoughts and experiences that they believe are relevant to an attitude object (e.g., Biek, Wood, & Chaiken, 1996; Davidson, Yantis, Norwood, & Montano, 1985; Wood, 1982). Other measures ask participants to report their subjective impressions of how knowledgeable they are about an attitude object (e.g., Wood, 1982; Davidson et al., 1985; Wilson, Kraft, & Dunn, 1989). It is notable that the two types of measures are only modestly correlated (e.g., Krosnick et al., 1993; Wood et al., 1995). Experimental manipulations of working knowledge have been rare. The most straightforward manipulation has been to vary the amount of information people receive when forming attitudes toward novel attitude objects (e.g., Fabrigar, Smith, Petty, & Crites, 2006; Lewan & Stotland, 1961). Researchers have proposed that working knowledge should be influenced by frequent exposure to the attitude object and high levels of cognitive elaboration about the attitude object (Wood et al., 1995).

### *Complexity: Differentiation and Integration*

Complexity of knowledge refers to the extent to which attitude-relevant information represents a number of distinct underlying dimensions (Scott, 1969; Tetlock, 1989). A person whose knowledge represents multiple underlying dimensions or perspectives (high differentiation) is higher in complexity than a person whose knowledge addresses only a single dimension or perspective (i.e., low differentiation). Some researchers have distinguished between two types of complex attitudes: those based on multiple orthogonal dimensions (i.e., high differentiation and low integration) and those based on multiple related dimensions (i.e., high differentiation and integration; e.g., Judd & Lusk, 1984; Scott, 1969; Tesser, Martin, & Mendolia, 1995). Complexity measures have typically focused on differentiation by having people sort their self-generated beliefs or a set of pre-specified attributes into distinct categories or by having independent coders perform this sorting task on participant-generated beliefs (e.g., see Scott, 1969; Fabrigar et al., 2006; Linville, 1982). Complexity has been manipulated by providing people with attitude-relevant information reflecting a single or multiple dimensions in paradigms involving novel attitude objects (e.g., Fabrigar et al., 2006).

Although differentiation has been the primary focus of complexity research, recognizing the relations among distinct dimensions is a central feature of some conceptualizations of complexity. *Integrative complexity* involves both the number of distinct dimensions underlying an attitude as well as the extent to which these dimensions are viewed as related to one another (Tetlock, 1989). Attitudes high in integrative complexity are characterized by a high number of underlying dimensions that are highly connected to each other. In contrast, attitudes of moderate integrative complexity are characterized by multiple underlying dimensions that are relatively isolated. Integrative complexity is assessed through content analysis of verbal statements or text commentary regarding an attitude object (e.g., Baker-Brown, Ballard, Bluck, deVries, Suedfeld, & Tetlock, 1992). Because complexity indices for most people simply reflect the presence or absence of conflicting dimensions, one might argue that research on integrative complexity indexes the level of ambivalence (i.e., evaluative conflict underlying the attitude) as much as (or instead of) knowledge complexity per se.

Although the structural properties of working knowledge and complexity are conceptually distinct, they are empirically related. The more information a person generates regarding an attitude object, the greater the possibility that this information will reflect multiple underlying dimensions (see Linville, 1982). However, this relation is not inevitable (e.g., a person could generate 2 or 22 beliefs representing a single dimension). Cognitive elaboration is also a likely determinant

of complexity. Individuals who elaborate may be likely to generate a greater number of dimensions underlying their attitude, and to recognize links among those dimensions (e.g., see work on accountability by Tetlock, 1983; Tetlock & Kim, 1987).

### ***Ambivalence: Evaluative Inconsistency of Attitude-Relevant Information***

Another widely studied property of attitude-relevant information is the evaluative consistency of the information. Various types of evaluative inconsistency have been proposed.

#### *Attitudinal Ambivalence*

Attitudinal ambivalence refers to the presence of both positive and negative reactions toward the attitude object (Scott, 1969; Priester & Petty, 1996). Ambivalence can arise when evaluations within a dimension are inconsistent or when one dimension of an attitude object is positive and another dimension is negative. *Objective ambivalence* (also called *potential* or *structural* ambivalence) is the co-occurrence of negative and positive evaluative reactions. It is typically assessed by having people evaluate an object separately on unipolar negative scales and unipolar positive scales. Respondents are often instructed to respond to each unipolar scale considering only their positive (negative) reactions and ignoring any negative (positive) reactions toward the object (a “partitioned” measure). However, research suggests that such requests to “set aside” reactions of the opposite valence introduce attempts to “correct” for the perceived influence of positive reactions on estimates of negative reactions and vice versa (cf. Wegener & Petty, 1997). The result is reduced performance of these partitioned measures (e.g., in predicting experienced evaluative conflict) when compared with reporting positive or negative reactions without setting aside reactions of the opposing valence (a “nonpartitioned measure; Reffing, Calnan, Fabrigar, MacDonald, Johnson, & Smith, 2013). The separate reports of positive and negative evaluations are then combined using one of a several mathematical formulas (see Priester & Petty, 1996; Thompson, Zanna, & Griffin, 1995).

Another key property of ambivalent attitudes is that they are experienced as unpleasant, especially when a person needs to choose a particular attitude-related course of action (van Harreveld, Nohlen, & Schneider, 2015; van Harreveld, van der Pligt, & de Liver, 2009) or when the conflicting reactions are simultaneously accessible and the person strongly values cognitive consistency (Newby-Clark, McGregor, & Zanna, 2002). This *subjective* or *felt* ambivalence is typically measured by asking people to report the level of evaluative conflict they feel about an attitude object (Priester & Petty, 1996; Tourangeau, Rasinski, Bradburn, & D’Andrade, 1989). Interestingly, subjective ambivalence can arise not only as a result of contradictory evaluative reactions regarding an object but also when semantic inconsistency exists with respect to the object (Gebauer, Maio, & Pakizeh, 2013), when a person’s attitude is inconsistent with the attitudes of liked others (Priester & Petty, 2001) or with the attitude one desires (DeMarree, Wheeler, Briñol, & Petty, 2014), when the attitude is derived from a non-preferred information source (Tormala & DeSensi, 2008), or even when a person anticipates contradictory evaluative reactions (Priester, Petty, & Park, 2007).

#### *Dimensionality of Ambivalence*

Attitudinal ambivalence can result from many types of inconsistency. Within-dimension ambivalence occurs when conflicting evaluative information relates to a single dimension (e.g., both positive and negative emotions related to an attitude object). Cross-dimension ambivalence refers to evaluative conflicts between two or more distinct dimensions of evaluative information (e.g., positive cognitions and negative affect). Various subtypes of cross-dimension ambivalence have been proposed (Chaiken, Pomerantz, & Giner-Sorolla, 1995) including affective-cognitive inconsistency,



evaluative-affective inconsistency, or evaluative-cognitive inconsistency. Though most studies of cross-dimension ambivalence have focused on conflict between affect and cognition, cross-dimension ambivalence can occur whenever distinguishable dimensions of attitude-relevant information are inconsistent. For example, conflict could also be examined among attitude functions, subdimensions within affect or cognition, or subdimensions of a particular attitude function. Few researchers have attempted to classify the type of ambivalence under investigation. However, the consequences of holding ambivalent attitudes may vary depending on the type of inconsistency underlying that ambivalence.

### ***Subjective Beliefs About the Attitude***

Attitude structure has usually been conceptualized as consisting primarily of direct associations with the attitude object (such as beliefs about the object or past behaviors toward the object). However, people can also hold consequential beliefs about the attitude itself. For example, the attitude could be perceived as serving a particular function (e.g., as expressing a core value or as aligning one with admired others, Holbrook, Berent, Krosnick, Visser, & Boninger, 2005; Murray et al., 1996). The attitude could also be perceived as important (Eaton & Visser, 2008), as based on affect or cognition (See et al., 2008), or as held with certainty (Tormala & Rucker, 2007). Indeed, many of the measures of attitude structure we have reviewed thus far might be more appropriately classified as tapping into beliefs about the attitude and thus treated as conceptually distinct from the structural properties they were originally intended to assess. For example, subjective measures of working knowledge, ambivalence, and affective/cognitive bases are all related but empirically distinct from the more objective or structural measures of the constructs.

One useful theory in conceptualizing subjective beliefs as distinct structural properties of attitudes is the metacognitive model (MCM) of attitudes. This theory incorporates perceptions of the attitude's validity into the structure of the attitude (Petty & Briñol, 2006; Petty, Briñol, & DeMarree, 2007). Similar to previous views of the attitude as an association in memory between the attitude object and the evaluation, the MCM portrays attitudes as potentially involving associations between the attitude object and both positive and negative evaluations. In addition, the MCM postulates that validity tags (i.e., beliefs regarding the accuracy of the evaluations) accompany these evaluative associations. The validity tags can influence evaluative responding, especially when the responses are relatively deliberate. The MCM notes that, just as it is adaptive to store evaluations of objects (Fazio, 1995), it should also be adaptive to store assessments of whether the evaluation is "correct" (Festinger, 1954; Petty & Cacioppo, 1986).

When attitude measures or other evaluative responses are relatively automatic (nondeliberative), these responses may be guided mostly by activated evaluative associations. However, when attitude measures or other evaluative responses are more deliberative (i.e., when people think about them more carefully), responses may be influenced by perceptions of validity of the positive versus negative evaluations. Similar principles may also apply to use of perceptions that the attitude is important, serves particular functions, is based on extensive knowledge, etc. Such "tags" to the evaluation may influence evaluative responding to a greater degree when people respond in more deliberate ways and may be thinking about the properties of their evaluations (Petty et al., 2007). Indeed, there is some evidence to support this view for meta-bases of attitudes (i.e., subjective beliefs regarding the affective/cognitive bases of attitudes; See et al., 2008, 2013).

### ***Certainty***

Many metacognitions are potentially relevant to attitudinal processes. Yet, attitude certainty has been the most prominent in existing theory and research addressing structural properties of attitudes.

Certainty has traditionally been measured using global subjective measures of how confident people are of their attitudes (e.g., Fazio & Zanna, 1978). Subsequent research has suggested that attitude certainty is composed of two related but separable components, each of which is typically measured using subjective measures (Petrocelli, Tormala, & Rucker, 2007). Clarity refers to the extent to which people know what their attitudes are. Correctness refers to the degree to which people believe their attitudes are valid.

Numerous factors influence attitude certainty and have been used to experimentally manipulate certainty (for a review, see Rucker, Tormala, Petty, & Briñol, 2014). Such factors include social consensus, structural ambivalence, direct experience with the attitude object, working knowledge, the objectivity and extent to which attitude-relevant information has been processed, factors related to the quality of the information underlying the attitude, characteristics of the source of attitude-relevant information, feelings of power, successful resistance to a persuasive message, and attitude accessibility. The effects of these many determinants are mediated through a comparatively finite set of appraisals related to the accuracy of information underlying the attitude, the completeness of information underlying the attitude, the relevance/legitimacy/importance of information underlying the attitude, and liking of (or positive feelings toward) one's attitude (Rucker et al., 2014).

### *Importance*

Attitude importance is defined as the extent to which an individual personally cares about, is concerned with, or attaches significance to the attitude (Boninger, Krosnick, Berent, & Fabrigar, 1995; Eaton & Visser, 2008). Though defined in terms of the importance of the attitude, it has been more common to measure subjective judgments of the importance of the object or topic rather than the attitude. It has been assumed that judgments of the object or topic are easier for respondents and that the two perceptions are functionally interchangeable (median latent variable  $r = .94$ , Boninger et al., 1995). However, the two judgments would seem conceptually separable (Eaton & Visser, 2008; Fabrigar et al., 2005). Generally, attitude importance is a function of the degree to which the attitude object is perceived as influencing a person's self-interest, as important to groups or people with which one identifies, and as relevant to personal values (Boninger, Krosnick, & Berent, 1995).

### *Inter-Attitudinal Structure*

Thus far, we have discussed structural properties that have been intra-attitudinal. However, there are also elements of attitude structure related to associations between attitudes toward different objects or associations among multiple attitudes toward the same object.

### *Attitude Systems Involving Multiple Objects*

A number of early cognitive consistency theories postulated that people are motivated to maintain consistency among attitudes towards objects that are related to one another (Abelson & Rosenberg, 1958; Festinger, 1957; Heider, 1958). More contemporary research has focused on specific properties of inter-attitudinal structure such as the degree to which attitudes are linked in memory and the level of evaluative consistency and strength of those associations (Judd & Downing, 1990; Judd & Krosnick, 1989; Lavine, Thomsen, & Gonzales, 1997). In these studies, attitudes have been conceptualized as associative networks, with nodes characterizing attitude valence and the strength of links between objects and evaluations as the strength of the attitude. Links among the attitudinal nodes are characterized by implicational relations (consistent or inconsistent) and strength (the probability that the nodes will activate each other).

Attitudes can be linked and organized on the basis of general ideologies (Converse, 1964) because they influence a common set of consequences such as value-expression (Lavine et al., 1997), or because one attitude serves as a basis for another attitude (as when an attitude toward a value influences more specific attitudes reflecting that value; Blankenship, Wegener, & Murray, 2012, 2015). Thus, attitudes that are organized along ideological or value dimensions should be more consistent with one another than attitudes with fewer and weaker associative links (cf. Judd & Krosnick, 1989). In this way, individuals are likely to have consistency among attitudes when they know about relevant attitude objects (i.e., have a high number of nodes) and recognize connections among those attitudes (i.e., have a high number of links per node). For example, political experts should invoke ideologies when considering attitude objects and thus recognize links between objects. Also, the attitudes would be viewed as important, these experts should spend more time thinking about political attitude objects and develop stronger links to related attitude objects. Indeed, Judd and Krosnick (1989) demonstrated that people high in political expertise had greater evaluative consistency among attitudes (see also Judd & Downing, 1990).

### *Attitude Systems Involving Single Objects*

As noted earlier, people can have contradictory evaluative associations with an object. The dual-attitude model (Wilson, Lindsey, & Schooler, 2000), systems of evaluation model (McConnell, Rydell, Strain, & Mackie, 2008), and the MCM model (Petty et al., 2007) extend this possibility to holding two (or more) attitudes toward the same attitude object.

The dual-attitude model postulates that when an attitude changes, the old attitude is not necessarily discarded. It may be retained along with the new attitude. Individuals are presumed capable of simultaneously holding dual attitudes because one is expressed at a conscious level (i.e., the explicit attitude) whereas the other is implicit (i.e., outside awareness, see Greenwald & Nosek, 2009). These attitudes are viewed as being stored separately, perhaps in different memory systems (e.g., DeCoster, Banner, Smith, & Semin, 2006; Rydell, McConnell, Mackie, & Strain, 2006). In this approach, implicit attitudes are the “default” and are activated automatically, whereas explicit attitudes are expressed only when an individual has sufficient capacity and motivation to override the implicit attitude and retrieve the explicit attitude.

The MCM also postulates that after attitude change, the prior attitude will often still exist in memory. However, when an individual changes his or her attitude, that person may “tag” the original attitude as “invalid” (or held with low confidence). Both the new attitude, and the old attitude are still associated with the attitude object in memory, so either (or both) can be activated—depending on principles of activation, such as recency and frequency of activation or relation to memory cues in the environment (Petty, Tormala, Briñol, & Jarvis, 2006). Though the attitudes are presumed to be stored and tagged separately in memory, there is no assumption that the two attitudes reside in different memory systems (Briñol, Petty, & McCaslin, 2009).

At first glance, dual (or multiple) attitude structures bear a striking similarity to the intra-attitudinal property of ambivalence. Wilson and colleagues, however, draw a number of distinctions between these two concepts. They note that when ambivalence occurs, tension results as a consequence of two conflicting evaluations that are both in awareness (cf., Newby-Clark et al., 2002). However, in the hypothesized dual-attitude structure, social perceivers would not experience unpleasant tension, because the perceiver is only aware of the explicit attitude, not the implicit attitude. The MCM approach also directly addressed the notion of implicit ambivalence. For example, regarding one valence of reactions as valid and the other valence as invalid would make the person explicitly unambivalent while still leaving the potential for implicit ambivalence when reactions of both valences are activated. Indeed, research suggests that people can act ambivalent when conflicting reactions exist but explicit ambivalence is absent. For example,

increasing discrepancies between traditional self-report measures of self-esteem (Rosenberg, 1965) and indirect/automatic (Implicit Association Test; IAT, Greenwald, McGhee, & Schwartz, 1998) measures of self-esteem were associated with greater processing of persuasive messages framed as related to the automatic/deliberative self-discrepancies (i.e., a message framed as relevant to self-esteem; Briñol, Petty, & Wheeler, 2006). In the same context, processing of messages framed as discrepancy-unrelated was not influenced by the size of automatic/deliberative discrepancies (Briñol et al., 2006; see also Petty et al., 2006). Such discrepancies between implicitly and explicitly recorded attitudes can produce a diffuse state of discomfort (Rydell, McConnell, & Mackie, 2008) even if it is not connected directly to the object in the form of subjective ambivalence (Petty & Briñol, 2009). Even so, the MCM model differs from the dual-attitude approach in that some circumstances (e.g., when individuals do not access the validity tag or when both valences are held with confidence), both old and new attitudes can be simultaneously activated and open to awareness. In such instances, individuals can experience “explicit” (subjective) ambivalence (Petty & Briñol, 2009). Ambivalence is reduced if people come to doubt the basis for the positive or negative reactions, but ambivalence remains high if they doubt the basis for both positive and negative reactions (DeMarree, Briñol, & Petty, 2015).

### **Associations Among Structural Properties of Attitudes**

Theorists have proposed a host of structural properties of attitudes. Indeed, when one considers that alternative measures of the same construct (e.g., knowledge listing measures versus subjective knowledge measures) might actually reflect separable constructs, the list of structural properties becomes quite lengthy. Thus, it is not surprising that one important theme in attitude structure research has been an attempt to develop more parsimonious conceptual organizations of structural properties.

### ***Taxonomies of Attitude Structure and Strength-Related Constructs***

#### *Empirical Explorations of Taxonomies*

Some taxonomies of structure and strength-related constructs have focused exclusively on metacognitive measures (Abelson, 1988; Bass & Rosen, 1969; & Pomerantz, Chaiken, & Tordesillas, 1995). Various studies have suggested 2 to 4 underlying dimensions and the nature of the dimensions has differed across studies (see Table 3.1). Other studies have attempted to organize a broader array of measures that have included more objective measures of structure (e.g., response latency measures of accessibility, congruency scores between affect and cognition to assess affective-cognitive consistency, knowledge listing measures of working knowledge) as well as metacognitive measures of structure and other strength-related constructs (see Table 3.1).

For example, Bassili (1996) distinguished between “meta-attitudinal” measures that involve reporting subjective beliefs about some aspect of the attitude or attitude object (e.g., subjective reports of certainty) and “operative” measures that involve objective—rather than subjective—indices of judgmental processes in attitudinal responses (e.g., response latencies of attitudinal responses). Factor analyses provided some evidence of a two-factor structure consistent with the meta-attitudinal/operative distinction. However, attitude certainty (a meta-attitudinal measure) loaded on both factors. Furthermore, other interpretations of the factor structure are possible. For instance, measures loading on the “meta-attitudinal factor” could also be viewed as related to the depth and breadth of information underlying the attitude (e.g., self-reports of knowledge, frequency of thought, and importance). Measures that loaded on the “operative factor” could be conceptualized as sensitive to the evaluative consistency of information underlying the attitude (e.g., attitude

Table 3.1 Summary of Proposed Taxonomies

<i>Article</i>	<i>Type of Measures</i>	<i>Factor Names</i>	<i>Defining Measures for Factor</i>
Bass and Rosen (1969)	Metacognitive	Confidence Motivational Involvement Apathy Complexity	certainty, ambivalence importance, thought frequency lack of interest, lack of concern issue controversy, issue complexity
Abelson (1988)	Metacognitive	Emotional Commitment Ego Preoccupation Cognitive Elaboration	attitude correctness, value relevance, self-identity relevance importance, thought frequency, issue concern knowledge, ease of articulating views
Pomerantz, Chaiken, and Tordesillas (1995)	Metacognitive	Embeddedness Commitment	self-relevance, value relevance, importance, knowledge attitude correctness, likelihood of change, attitude extremity
Erber, Wilson, & Hodges (1995)	Mixed	Conviction Strength of Evaluation Belief Homogeneity Media Exposure Affective-Cognitive Consistency	elaboration, ego preoccupation, commitment reported behavior response latencies, extremity, ego- involvement belief homogeneity media exposure affective-cognitive consistency
Bassili (1996)	Mixed	Meta-Attitudinal Operative	subjective knowledge, subjective thought frequency, Importance, certainty response latencies, extremity, structural ambivalence, certainty
Prislin (1996)	Mixed	Generalized Attitude Strength Internal Consistency Extremity	subjective knowledge, knowledge listing, importance, certainty, thought frequency, experience affective-evaluative consistency, cognitive- evaluative consistency attitude extremity, affective extremity, response latency
Kokkinaki (1998)	Mixed	Embeddedness Commitment Internal Consistency	subjective thought frequency, importance, attention to information certainty, extremity, subjective ambivalence affective-evaluative consistency, cognitive-evaluative consistency, extremity

response latencies, ambivalence, extremity). This alternative conceptualization might also explain why certainty loaded on both factors. Research has suggested that attitude certainty is related to both the amount and evaluative consistency of information underlying an attitude (e.g., Smith, Fabrigar, MacDougall, & Wiesenhal, 2008). Moreover, other researchers exploring a broad array of measures (Erber, Hodges, & Wilson, 1995; Kokkinaki, 1998; Prislin, 1996) have obtained results that differed from Bassili (1996) and each other (see Table 3.1).

Indeed, some theorists have questioned the utility of such taxonomies (Visser, Bizer, & Krosnick, 2006). Advocates of this independent construct perspective have noted that although some structural properties are clearly associated with one another, there are enough differences that it would be inappropriate to view them as simply alternative measures of the same construct. Instead, each construct should be regarded as distinct, with potentially different (although in some cases overlapping) antecedents and consequences. Consistent with this view, several confirmatory factor analyses have suggested that collapsing structure and other strength-related measures into a small set of underlying factors is problematic. Most notably, Krosnick, Boninger, Chuang, Berent, and Carnot (1993) conducted confirmatory factor analyses of an extensive battery of measures. Their analyses rejected a model postulating a single underlying strength factor as well as a number of models postulating that some properties reflected common underlying factors. Ultimately, they argued for a model with each structural or other strength-related property represented as a distinct construct. Similarly, Lavine, Huff, Wagner, and Sweeney (1998) conducted confirmatory factor analyses of 12 measures designed to assess 6 attitudinal properties (importance, certainty, intensity, frequency of thought, extremity, ambivalence). Their analyses suggested the best performing model was the model that specified 6 distinct constructs rather than a smaller number of constructs.

### *Evaluating Taxonomies of Structure and Other Strength-Related Properties*

In considering studies of taxonomies, it would be inaccurate to say that no consistent patterns have emerged (see Visser et al., 2006; see also Table 3.1). Some measures frequently loaded on the same factor (e.g., measures of importance and knowledge), whereas some measures almost never loaded on the same factor (e.g., measures of importance and accessibility). That being said, notable differences across studies also emerged. Moreover, confirmatory factor analyses have argued against any of these proposed taxonomies. Thus, it is not surprising that no taxonomy has gained wide acceptance. What is less clear is why results have been inconsistent.

One possibility is that somewhat different sets of measures have been used across studies and many studies have incompletely sampled attitudinal properties. Furthermore, the psychometric properties of measures have seldom been explored. Ultimately, any factor analysis is dependent on the extent to which the measures adequately sample the domain of interest and are psychometrically sound. Similarly, different factor analytic procedures have been used that vary in their underlying assumptions and could have produced different results (e.g., see Fabrigar & Wegener, 2012; Fabrigar, Wegener, MacCallum, & Strahan, 1999).

A second limitation is the lack of fully developed theoretical rationales for proposed taxonomies. Often, the psychological mechanisms for why specific constructs should be related to one another have not been articulated. Consider the Erber et al. (1995) five-factor taxonomy that included factors such as consistency of the database. This model implies that various forms of evaluative consistency would load on a common factor. However, there would seem to be ample opportunity for one type of inconsistency (e.g., affective-cognitive inconsistency) to be unrelated to another type of inconsistency (e.g., belief inconsistency—in fact, the presence of extreme belief inconsistency could make any conflict between affect and cognition less pronounced). Similarly, the Bassili (1996) meta-attitudinal/operative distinction implies that sharing a measurement method is sufficient for two



measures to be highly correlated. Based on this logic, a subjective report of ambivalence should be more highly correlated with a subjective report of knowledge than it is with an objective measure of ambivalence. There seems to be little reason for this prediction, and such a perspective cannot account for the sometimes substantial correlations between subjective reports of ambivalence and objective measures of ambivalence (e.g., see Priester & Petty, 1996, 2001; Thompson et al., 1995; van Harreveld et al., 2015).<sup>2</sup>

Another potential reason for past inconsistencies is that the studies have failed to examine whether relations between constructs are sometimes nonlinear or moderated by other strength-related constructs. For instance, consider the seemingly obvious prediction that subjective certainty increases as working knowledge increases. This prediction is only sensible if increases in working knowledge involve evaluatively consistent information. When knowledge is inconsistent, there may be no association between working knowledge and certainty. Past research on taxonomies has generally ignored such possibilities. A final limitation is that most studies exploring associations among strength-related constructs have been nonexperimental thus raising the possibility that confounds have obscured associations among constructs.

Thus, it is possible that some parsimonious underlying structure of structural properties could exist even if the structure might not be fully captured by traditional factor analyses. Additionally, even if it is ultimately determined that all structural properties of attitudes and other strength-related constructs are distinct enough to be conceptualized as separate constructs, this does not preclude the need for more general organizing models of structure. Some theoretical framework accounting for variations in strength of associations and why properties have distinct versus common antecedents and consequences would be very useful.

### ***Exploring Relations Among Structural Properties and Related Constructs***

Although no widely accepted taxonomy of attitude structure exists, researchers have made some progress in understanding how many properties are related to one another. Although there are theoretical bases to make hypotheses for nearly any pairing of structural variables, we confine our discussion to associations for which there are existing data.

#### ***Associations With Attitude Accessibility***

Accessibility is one of the most widely studied structural properties of attitudes. As such, it is not surprising its relations to a variety of structural properties and other strength-related constructs have been explored. Table 3.2 provides a summary of the findings from this extensive literature. In considering these associations, it is important to recognize that in many cases they might be driven by causal mechanisms in either direction.

#### TYPE OF ATTITUDE-RELEVANT INFORMATION AND ACCESSIBILITY

Attitude theorists have distinguished among various types of attitude-relevant information. There is little reason to expect that simply strengthening the object-evaluation association should result in an attitude based on a particular type of information. However, attitudes derived from different types of information could produce attitudes that differ in accessibility, although comparatively little empirical work has explored this possibility (see Row 3 of Table 3.2). For example, Fazio (1995) suggested that affective information may be perceived as more diagnostic and therefore enhance the strength of an object-evaluation association based on such information. In a study examining 20 different attitude objects, analyses revealed a positive correlation between the extent to which attitude

Table 3.2 Associations of Accessibility and Other Structural Properties and Strength-Related Properties of Attitudes

<i>Outcome Measure</i>	<i>Accessibility (Latency)</i>	<i>Measure or Manipulation of Accessibility</i>	<i>Accessibility (Subjective)</i>
1. Accessibility (Latency)		Berger (1992) (+) Bizer and Krosnick (2001) (+/+) Fazio et al. (1982) (+/+) Holland et al. (2003) (+) Petrocelli et al. (2007) (+) Powell and Fazio (1984) (+) Roese and Olson (1994) (+)	
2. Accessibility (Subjective)	Bassili (1996) (+/NS) Holbrook and Krosnick (2010) (NS) Fazio (1995) (.17)		
3. Affective/Cognitive Bases (Structural)	Giner-Sorolla (2001) (NS)		
4. Working Knowledge (List)	Krosnick et al. (1993) (.11) Prislin (1996) (.07/.16/.22)		
5. Working Knowledge (Subjective)	Bassili (1996) (NS/NS/NS) Erber et al. (1995) (.16) Krosnick et al. (1993) (.25) Prislin (1996) (.22/.09/.10)		
6. Ambivalence (Structural)	Bargh et al. (1992) (global) (-.24) Erber et al. (1995) (affective-cognitive) (.03) Erber et al. (1995) (belief) (.01) Fazio (1995) (global) (-) Krosnick et al. (1993) (affective-cognitive) (-.24) Prislin (1996) (evaluative-cognitive) (.05/.02/-0.00) Prislin (1996) (evaluative-affective) (-.01/.03/-0.06)		Bassili (1996) (global) (NS/NS)
7. Ambivalence (Subjective)	Bassili (1996) (NS/+)		Bassili (1996) (NS/NS)
8. Certainty	Bassili (1996) (+/+/+/+/+) Berger (1992) (.04) DeMarree et al. (2010) (.31) Holland et al. (2003) (+) Krosnick et al. (1993) (.26) Petrocelli et al. (2007) (clarity) (.42) Prislin (1996) (.10/.24/.09)	Berger (1992) (NS) Holland et al. (2003) (+) Petrocelli et al. (2007) (clarity) (+/+) Petrocelli et al. (2007) (correctness) (NS/NS)	Bassili (1996) (+/+)

(Continued)

Table 3.2 (Continued)

Measure or Manipulation of Accessibility			
Outcome Measure	Accessibility (Latency)	Accessibility (Repeated Expression)	Accessibility (Subjective)
9. Importance	Bassili (1996) (NS/NS/NS/NS/+)	Roose and Olson (1994) (+)	Bassili (1996) (NS/+)
	Bizer and Krosnick (2001) (+/+/.07)	Bizer and Krosnick (2001) (NS/NS)	
	Erber et al. (1995) (.14)		
	Krosnick (1989) (.29/.31/.20)		
	Krosnick et al. (1993) (.26)		
	Lavine et al. (1998) (+)		
	Prislin (1996) (.03/.14/.15)		
	Roose and Olson (1994) (.33)		
	Tourangeau et al. (1991) (.31/.13)		
	Bargh et al. (1992) (.69)		
	Bassili (1996) (+/+/.07/NS)		
	Berger (1992) (+)		
	Bizer and Krosnick (2001) (NS)		
	Erber et al. (1995) (.43)		
Fazio et al. (1989) (.18)			
Fazio and Williams (1986) (.53)			
Houston and Fazio (1989) (.21)			
Krosnick et al. (1993) (.35)			
Powell and Fazio (1984) (.30)			
Prislin (1996) (.04/.35.08)			
Bassili (1996) (NS/+)			
10. Extremity (Attitude Polarization)		Bizer and Krosnick (2001) (NS)	Bassili (1996) (+/+)
		Brater et al. (1995) (+)	
		Downing et al. (1992) (+)	
		Fabrigar et al. (1998) (NS)	
		Fazio et al. (1986) (NS)	
		Fazio et al. (2000) (NS)	
		Judd et al. (1991) (+)	
		Powell and Fazio (1984) (NS)	
		Roskos-Ewoldsen and Fazio (1992) (NS)	
		Smith et al. (1996) (+)	
11. Extremity (Subjective)			Bassili (1996) (NS/NS)

Note: Numerical values are correlation coefficients. The + symbol indicates a significant positive effect, and the - symbol indicates a significant negative effect. NS indicates a non-significant effect.

objects were described in affective terms and the accessibility of attitudes towards those objects, even after controlling for extremity (see Fazio, 1995). However, controlling for attitude extremity, Giner-Sorolla (2001) found no overall effect of attitude basis on accessibility.

Additionally, some caveats should be noted. First, given the nonexperimental nature of the data, confounds may have been present. Second, the extent to which information of a particular type is seen as diagnostic of attitudes may be moderated by a variety of factors. For example, different types of information may be seen as diagnostic for different classes of attitude objects. The manner in which information is acquired and/or subsequently processed may also influence its perceived diagnosticity (see Fazio, 1995). Finally, individual differences likely exist in the extent to which people see affective versus cognitive information as diagnostic (e.g., Aquino et al., 2016; Haddock et al., 2008; See et al., 2008; 2013).

#### WORKING KNOWLEDGE AND ACCESSIBILITY

Researchers have suggested that accessibility is related to working knowledge (Davidson et al., 1985; Kallgren & Wood, 1986), but the mechanisms underlying this association have not been explicitly articulated. Semantic network models of cognitive organization (e.g., Anderson, 1983) do provide a potential basis for predicting such a relation, however. For example, frequent activation of an attitude would likely lead to frequent co-activation of associated knowledge structures, resulting in stronger associative links between the attitude and attitude-relevant information (Judd & Brauer, 1995). Alternatively, each time a link between a piece of information and an attitude is formed, the attitude is likely to be activated. Thus, increasing working knowledge is likely to produce repeated attitude activation. Research examining the association between subjective reports of knowledge or knowledge listing and latency measures of accessibility has typically produced positive, but weak associations (see Rows 4 and 5 of Table 3.2). However, one obvious moderator of the working knowledge-accessibility association may be the evaluative consistency of attitude-relevant information. Many objects used in past studies were likely to elicit ambivalence (e.g., abortion, capital punishment).

#### AMBIVALENCE AND ACCESSIBILITY

There are numerous reasons why accessibility might be related to ambivalence. For example, attitude activation may differentially influence knowledge structures that are evaluatively consistent versus inconsistent with the attitude (see Judd & Brauer, 1995). When an object representation is activated, features used to initially categorize the object are more likely to be activated than features that did not play a dominant role in the categorization of the object. Given that global evaluation is one important dimension by which objects are categorized (Osgood, Suci, & Tannenbaum, 1957), repeated attitude activation may especially strengthen associations with evaluatively consistent information. Additionally, attitude activation tends to facilitate activation of evaluatively consistent knowledge structures and inhibit activation of evaluatively inconsistent knowledge structures (Bargh et al., 1992; Fazio, 1995; Fazio, Jackson, Dunton, & Williams, 1995; Fazio et al., 1986). Hence, repeated attitude activation will tend to particularly strengthen links between the attitude and evaluatively consistent information, thus leading to less ambivalence. Considering a reverse causal mechanism, increasing (decreasing) ambivalence could lead to decreased (increased) accessibility for similar reasons. Establishing a link between an attitude and an evaluatively inconsistent knowledge structure adds a knowledge structure whose activation could inhibit activation of the attitude.

Evidence of relations between ambivalence and accessibility is decidedly inconsistent (see Rows 6 and 7 of Table 3.2). Studies of general structural ambivalence and latency measures of accessibility have reported negative associations (Bargh et al., 1992; see also Fazio, 1995). Studies examining

associations between response latencies and subjective ambivalence have produced mixed results (Bassili, 1996). Studies assessing the relation between affective–cognitive–evaluative ambivalence and accessibility have also produced mixed results (Erber et al., 1995; Krosnick et al., 1993; Prislin, 1996), and ambivalence within beliefs has been uncorrelated with accessibility (Erber et al., 1995). The fact that accessibility has tended to be more consistently related to global ambivalence than more specific forms of ambivalence makes some sense in that specific types of ambivalence (e.g., belief inconsistency) might be offset by high levels of consistency in other aspects of the attitude’s structure (e.g., affective consistency).

#### ATTITUDE CERTAINTY AND ACCESSIBILITY

It is intuitively plausible that ease of attitude retrieval could serve as a basis for inferring attitude certainty (Gross, Holtz, & Miller, 1995). Indeed, numerous nonexperimental studies have reported positive associations between response latency measures of accessibility and certainty (e.g., DeMarree, Petty, & Strunk, 2010; Krosnick et al., 1993), although some have also reported nonsignificant correlations (e.g., Berger, 1992; see Row 8 of Table 3.2). Furthermore, repeated attitude expressions increase attitude certainty and this effect is mediated by attitude accessibility (Holland, Verplanken, & van Knippenberg, 2003). Subsequent research has suggested that the effects of repeated expression via accessibility primarily occur for the clarity component of certainty (Petrocelli et al., 2007).

#### ATTITUDE IMPORTANCE AND ACCESSIBILITY

There are numerous reasons to postulate an accessibility–importance relation (e.g., see Fabrigar et al., 2005; Visser et al., 2006). First, people may use ease of retrieval as a basis for inferring importance (Roese & Olson, 1994). Second, one function served by attitudes is to help orient a person to consequential objects in their environment (Roskos-Ewoldsen & Fazio, 1992). Because accessible attitudes are spontaneously activated and thus signal that objects have hedonic consequences, highly accessible attitudes may be seen as more important than less accessible attitudes (Fabrigar et al., 1998). Finally, importance could cause accessibility. Importance can produce active seeking of attitude–relevant information and extensive elaboration of that information, which can lead to greater accessibility (Bizer & Krosnick, 2001; Boninger et al., 1995).

Numerous studies have reported positive associations between measures of importance and accessibility (e.g., Bizer & Krosnick, 2001; Lavine, Sullivan, Borgida, & Thomsen, 1996; see Row 9 of Table 3.2). Yet, experimental studies have provided less consistent results. For example, Roese and Olson (1994) found that repeated attitude expression produced increases in importance that were mediated by accessibility, although the analytical strategy used to evaluate mediation was problematic (Visser et al., 2006). However, Bizer and Krosnick (2001) found that repeated attitude expression increased accessibility without corresponding increases in importance. Some evidence has suggested importance can lead to accessibility. Bizer and Krosnick (2001) conducted structural equation modeling analyses suggesting that, when people can seek out and elaborate about attitude–relevant information, increases in importance lead to increases in accessibility. They did not find evidence of accessibility leading to importance.

Thus, there is substantial theoretical and empirical support for an association between accessibility and importance. However, there could be multiple mechanisms that predominate in different conditions. For example, use of ease of retrieval to infer importance might primarily occur when people have not previously formed clear beliefs about the importance of their attitudes and when other salient information is not present to allow them to construct judgments of importance. Importance may lead to enhanced accessibility under conditions when importance can produce greater information–seeking and elaboration.

Perhaps the most detailed model of the association between accessibility and extremity was proposed by Judd and Brauer (1995). They argued that repeated attitude activation/expression leads to greater attitude accessibility and that it can also alter extremity by influencing the cognitive representation of the attitude object in memory, the manner in which attributes associated with the object are weighted in attitudinal judgments, and/or the manner in which people map their attitudinal judgments onto a response scale. Consistent with this view, nonexperimental studies suggest a positive association between extremity and accessibility (e.g., Fazio & Williams, 1986; Powell & Fazio, 1984, see Row 10 of Table 3.2). However, repeated attitude expression studies have produced mixed results with some reporting no increases in extremity (e.g., Bizer & Krosnick, 2001; Fazio et al., 1986; Roskos-Ewoldsen & Fazio, 1992) and others increased extremity (e.g., Brauer, Judd, & Gliner, 1995; Downing, Judd, & Brauer, 1992; Smith, Fazio, & Cejka, 1996).

Downing et al. (1992) suggested that failures to find extremity effects were due to the response scales used (see also Judd & Brauer, 1995). They argued that when repeated attitude expressions use scaled responses, the internal representation of the evaluation takes the form of the response label. Thus, when subsequently reporting attitudes, people provide a response that reflects the particular response label that has become their internal representation of the attitude. However, if people express their attitudes using only the scale endpoints or using an open-ended format, no specific point on the response continuum is internalized and thus greater extremity on a subsequent rating scale occurs. This interpretation has not gone unchallenged. Fazio (1995) noted that some studies using dichotomous expression manipulations have still failed to produce increased extremity (Fazio et al., 1986; Roskos-Ewoldsen & Fazio, 1992). Furthermore, when extremity effects occur, they may be driven primarily by people who were initially neutral. Because dichotomous expressions force people to adopt a position, neutral people may come to see themselves as possessing a positive or negative evaluation. Fazio and Powell (1994; cited in Fazio, 1995) categorized people at varying levels of initial attitude extremity. They found that repeated dichotomous attitude expression only produced greater extremity for people who were initially neutral.<sup>3</sup> Additionally, Judd and Brauer's (1995) model suggests that not all repeated expression-extremity effects imply true polarization in the attitude. They could reflect changes in the manner in which people map their attitudes onto the response scale. Indeed, experiments involving nonevaluative judgments suggest that repeated expression-extremity effects are sometimes a result of people misinterpreting the intent of rating scales and using the extremity of their ratings as a means of communicating confidence in the judgment rather than the actual extremity of the object on the dimension being judged (Norris, Fabrigar, Petty, Wegener, Dymond, & Calnan, 2017).

### *Associations With Working Knowledge and Complexity*

#### AMBIVALENCE AND WORKING KNOWLEDGE

The association between ambivalence and working knowledge is unlikely to be a simple relation. Because the total number of contradictory knowledge structures in memory will likely be greater as working knowledge increases, several theoretical perspectives predict that increases in working knowledge often lead to greater evaluative conflict (see Festinger, 1957; Priester & Petty, 1996; Thompson et al., 1995). When the proportion of available conflicting information is low, however, adding working knowledge should have little impact on ambivalence. Finally, there is little reason for straightforward reverse causal effects in that ambivalence can sometimes increase information processing (which could increase working knowledge) and sometimes decrease information processing (which could keep working knowledge low; Clark, Wegener, & Fabrigar, 2008b). Thus,



it is not surprising that studies find only weak associations between both structural and subjective measures of ambivalence and working knowledge (e.g., Erber et al., 1995; Krosnick et al., 1993; see Rows 3 and 4 of Table 3.3).

#### INTER-ATTITUDINAL STRUCTURE, WORKING KNOWLEDGE, AND COMPLEXITY

Inter-attitudinal links often result from perceiving logical relations between attitude objects (e.g., relevance to common values). If attitudes are based on information that is extensive and complex, people are more likely to recognize links between attitude objects. Indeed, nonexperimental studies have shown that increases in political expertise are associated with stronger associations among political attitudes (e.g., Bishop, Hamilton, & McConahay, 1980; Converse, 1964; Judd & Krosnick, 1989; see Row 5 of Table 3.3). However, other research has provided more mixed evidence for this relation (Judd, Krosnick, & Milburn, 1981; Judd & Milburn, 1980). Others have shown that manipulating thought about political issues and considering relations among issues enhances associations among political attitudes, particularly for people high in political expertise (Judd & Downing, 1990; Lavine et al., 1997).

#### CERTAINTY, WORKING KNOWLEDGE, AND COMPLEXITY

Non-experimental studies examining correlations of knowledge listing and subjective knowledge measures with certainty ratings have generally suggested a positive association (e.g., Krosnick et al., 1993; Prislin, 1996; see Row 6 of Table 3.3). Experimental manipulations of working knowledge have also sometimes influenced certainty (Fabrigar et al., 2006; Smith et al., 2008) but are mediated by subjective impressions of knowledge (Smith et al., 2008) and likely other judgments related to the completeness of information upon which the attitude is based (see Rucker et al., 2014). Thus, it is not surprising that subjective knowledge measures have generally had stronger associations with certainty than objective knowledge measures. Experimental manipulations of complexity have also sometimes positively influenced certainty (Fabrigar et al., 2006). Once again, it is likely that such complexity effects are mediated by appraisals of the completeness of the information.

#### IMPORTANCE, WORKING KNOWLEDGE, AND COMPLEXITY

Perceiving an attitude as important should motivate people to seek out and think about attitude-relevant information, which should result in greater working knowledge and complexity (Boninger et al., 1995; Visser et al., 2006). A reverse causal mechanism is also plausible in that people might use the amount of information they have as a basis for inferring attitude importance. Consistent with both views, studies assessing subjective knowledge and importance have produced positive associations (e.g., Bassili, 1996; Prislin, 1996; see Row 7 of Table 3.3). Similarly, studies examining the correlations between knowledge listing and perceived importance have also produced positive correlations (Krosnick et al., 1993; Prislin, 1996; see also Wood, 1982).

However, these studies shed little light on the mechanisms underlying these associations. The most comprehensive exploration of this issue was reported by Holbrook, Berent, Krosnick, Visser, and Boninger (2005), who provided evidence that increased attitude importance was associated with increased memory for attitude-relevant information. This effect was a function of increased importance leading people to more actively seek out and carefully elaborate information. Additionally, structural equation modeling analyses suggested that increased attitude importance produced increases in subjective knowledge, but that subjective knowledge did not influence importance. Thus, evidence suggests that importance can exert a causal impact on working knowledge. Evidence

Table 3.3 Associations of Working Knowledge With Other Structural Properties and Strength-Related Properties of Attitudes

Outcome Measure	Measure or Manipulation of Working Knowledge		
	Working Knowledge (Knowledge List/Domain Expertise)	Working Knowledge (Manipulated Amount)	Working Knowledge (Subjective)
1. Working Knowledge (KnowledgeList/Domain Expertise)		Fabrigar et al. (2006) (+)	
2. Working Knowledge (Subjective)	Krosnick et al. (1993) (.28)	Fabrigar et al. (2006) (+)	
	Prislin (1996) (.57/.29/.12/.56) Wood (1982) (+) Wood et al. (1995) (.29)	Smith et al. (2008) (+/+)	
3. Ambivalence (Structural)	Krosnick et al. (1993) (affective/cognitive) (-.05)		Bassili (1996) (global) (NS/NS/NS)
	Prislin (1996) (evaluative-cognitive) (-.07/.01/- .15/- .03) Prislin (1996) (evaluative-affective) (-.02/- .11/.14/- .05)		Erber et al. (1995) (affective-cognitive) (.01) (belief) (-.16) Krosnick et al. (1993) (affective/cognitive) (.10/.03/- .17) Prislin (1996) (evaluative-cognitive) (-.10/.02/- .02/- .01) Prislin (1996) (evaluative-affective) (-.09/.03/- .08/- .09)
4. Ambivalence (Subjective)		Smith et al. (2008) (-/-)	
5. Inter-Attitudinal	Bishop et al. (1980) (+) Converse (1964) (+)		
	Judd and Downing (1990) (+) Judd and Krosnick (1989) (+) Judd et al. (1981) (NS) Judd and Milburn (1980) (NS) Lavine et al. (1997) (+) Krosnick et al. (1993) (.08) Prislin (1996) (.51/.26/.38/.50)		Bassili (1996) (+/+ /+) Krosnick et al. (1993) (.32/.58/.59/.30) Prislin (1996) (.73/.36/.39/.72)
6. Certainty		Fabrigar et al. (2006) (+) Smith et al. (2008) (+/+)	Pomerantz et al. (1995) (NS/NS/NS) Sanbonmatsu et al. (1997) (NS) Smith et al. (2008) (+/+)

(Continued)

Table 3.3 (Continued)

Outcome Measure	Measure or Manipulation of Working Knowledge		
	Working Knowledge (Knowledge List/Domain Expertise)	Working Knowledge (Manipulated Amount)	Working Knowledge (Subjective)
7. Importance	Holbrook et al. (2005) (+/+NS/+/+NS/+/+NS)		Bassili (1996) (+/+/+)
	Krosnick et al. (1993) (.19)		Erber et al. (1995) (.48)
	Prislin (1996) (.31/.40/.41/.49)		Krosnick et al. (1993) (.47/.56/.64/.44)
	Wood (1982) (+)		Pomerantz et al. (1995) (+/+/+)
			Prislin (1996) (.40/.40/.35/.58)
8. Extremity (Attitude Polarization)	Krosnick et al. (1993) (.11)	Fabrigar et al. (2006) (NS)	Bassili (1996) (NS/NS/NS)
	Prislin (1996) (.29/.27/.21/.10)		Erber et al. (1995) (.33)
			Krosnick et al. (1993) (.26/.47/.22/.25)
			Pomerantz et al. (1995) (NS/NS/NS)
			Prislin (1996) (.38/.28.42/.22)
			Sarbonmatsu et al. (1997) (+/+/+/.74)

Note: Numerical values are correlation coefficients. The + symbol indicates a significant positive effect, and the - symbol indicates a significant negative effect. NS indicates a nonsignificant effect.

for the reverse casual mechanism is lacking, though it is possible that such an effect might emerge under certain conditions (e.g., when perceptions of importance are not strongly crystallized and people lack clear external explanations for the amount of information they know).

EXTREMITY, WORKING KNOWLEDGE, AND COMPLEXITY

Although it is plausible that working knowledge and complexity are related to attitude extremity, these relations are not straightforward. For example, with working knowledge, this association is likely to depend on the evaluative consistency of information and the manner in which it is combined to form the attitude. If knowledge is evaluatively consistent and it is combined using a summation strategy (e.g., see Fishbein & Ajzen, 1975), increases in knowledge would be expected to produce more extreme attitudes. However, if information is evaluatively inconsistent and/or information is combined using an averaging strategy (e.g., see Anderson, 1996), increased knowledge may not lead to greater extremity.

Non-experimental studies examining the relation between self-reports of knowledge and attitude extremity have generally found positive associations (e.g., Erber et al., 1995; Krosnick et al., 1993; Prislín, 1996; see Row 8 of Table 3.3). Indeed, manipulations that affect the perceptions of the completeness of information without actually altering objective properties of the information can produce changes in extremity (Sanbonmatsu, Kardes, Posavac, & Houghton, 1997). Studies examining the association between knowledge listing and extremity have produced positive but generally weaker associations (Krosnick et al., 1993; Prislín, 1996; see also Wood et al., 1995). Experimental manipulations of working knowledge have generally failed to produce extremity effects (e.g., Fabrigar et al., 2006).

Complexity has also long been assumed to be related to the extremity of attitudes (see Tesser, Martin, & Mendolia, 1995). Studies assessing complexity using measures of topic expertise and then inducing people to think about the attitude object have revealed greater increases in extremity for people with complex attitudes than with simple attitudes (Millar & Tesser, 1986a; Tesser & Leone, 1977).<sup>4</sup> Researchers have suggested this effects occurs because when people think about an attitude object, a well-developed representation of an object will guide thinking in ways that are consistent with the representation thereby resulting in greater extremity. In contrast, Linville (1982) suggested that increased complexity is associated with less extremity because a greater number of distinct dimensions underlying an attitude should increase the likelihood that some inconsistencies will arise (see also Linville & Jones, 1980).

Subsequent researchers (Judd & Lusk, 1984) have resolved this apparent contradiction by demonstrating that the complexity-extremity association is moderated by the extent to which dimensions of knowledge are correlated (i.e., integrated). When dimensions are integrated (and evaluatively consistent), increased complexity should lead to greater extremity. In contrast, when dimensions are orthogonal, enhanced complexity should lead to less extremity. Likewise, Millar and Tesser (1986a) found that inducing thought produced a greater extremity for complex integrated-dimension attitudes and less extremity for complex orthogonal-dimension attitudes.

*Associations With Ambivalence*

CERTAINTY AND AMBIVALENCE

To the extent that contradictory evaluative reactions exist, people might be expected to have less clarity regarding what their attitude is and to perceive the evaluation as less likely to be valid thereby leading to less certainty. Although some studies examining affective-cognitive, evaluative-affective, and/or evaluative-cognitive inconsistency have failed to produce clear evidence of an association

between ambivalence and certainty (Krosnick et al., 1993; Prislin, 1996; see Row 3 of Table 3.4), studies assessing more general structural ambivalence have suggested stronger associations between certainty and ambivalence (Bassili, 1996). Moreover, experimental manipulations of ambivalence have also produced significant effects on certainty (e.g., Fabrigar et al., 2017; Jonas et al., 1997). Some research has suggested that the effects of ambivalence manipulations on certainty are mediated by subjective ambivalence (Smith et al., 2008). Indeed, it has been proposed that the effects of evaluative consistency of attitude-relevant information on certainty are mediated by appraisals of the accuracy of information underlying the attitude (Rucker et al., 2014).

#### IMPORTANCE AND AMBIVALENCE

There is comparatively little theoretical basis to expect that importance and ambivalence should be related to one another in a simple manner. For example, cognitive dissonance theory suggests that attitude importance might produce somewhat competing effects on the resolution of evaluative inconsistency (see Starzyk, Fabrigar, Soryal, & Fanning, 2009). For instance, contradictory cognitions should produce greater discomfort if they are highly important. However, these elements might also be more crystallized and thus difficult to change in order to reduce dissonance. Not surprisingly, nonexperimental studies provide little consistent evidence of an association between importance and ambivalence (e.g., Krosnick et al., 1993; Prislin, 1996; see Row 4 of Table 3.4).

#### EXTREMITY AND AMBIVALENCE

Both averaging and summation models of attitude formation predict that extremity should be negatively related to ambivalence (e.g., Anderson, 1996; Fishbein & Ajzen, 1975). Also, ambivalence has been assumed to be most likely with near midpoint responses, requiring means to differentiate between ambivalence and indifference (Kaplan, 1972). Although some research has found non-significant or weak associations between certain forms of ambivalence and extremity (Erber et al., 1995; Prislin, 1996; see Row 5 of Table 3.4), most nonexperimental studies report significant negative correlations (Bargh et al., 1992; Krosnick et al., 1993). Manipulations of ambivalence also show that greater ambivalence results in less extremity (Jonas et al., 1997).

### *Associations With Inter-Attitudinal Structure*

#### IMPORTANCE AND INTER-ATTITUDINAL STRUCTURE

With the exception of attitude importance, little work has explored the relations between meta-cognitive structural properties of attitudes and inter-attitudinal structure. Greater importance should produce stronger motivation to maintain consistency among attitudes (Festinger, 1957). Also, people may be more likely to think about important attitudes and thus more likely to recognize connections among attitudes (Judd & Krosnick, 1982, 1989).

### **The Role of Structure in Attitude-Behavior Consistency**

Researchers have developed measures and experimental manipulations for a host of structural features of attitudes. One reason for such efforts is to study the impact of structural properties of attitudes in determining how and why attitudes are consequential. Perhaps the most studied aspect of attitude strength is the influence of attitudes on behavior, judgments, and decisions (see Ajzen, Fishbein, Lohmann, & Albarracín, this volume).<sup>5</sup>

Table 3.4 Associations of Ambivalence With Other Structural Properties and Strength-Related Properties of Attitudes

<i>Measure or Manipulation of Ambivalence</i>			
<i>Outcome Measure</i>	<i>Ambivalence (Structural)</i>	<i>Ambivalence (Manipulated Inconsistency)</i>	<i>Ambivalence (Subjective)</i>
1. Ambivalence (Structural)	Bassili (1996) (global) (-/+)	Fabrigar et al. (2017) (+/+)	Bassili (1996) (NS/NS)
	Costarelli and Colloca (2004) (.27/.42)	Jonas et al. (1997) (+/+)	Smith et al. (2008) (-/-)
	Costarelli and Palmonari (2003) (.39)	Refling et al. (2013) (+/+ / +/+)	
	Dahl et al. (2005) (.32)	Priester and Petty (1996) (+)	
	Jonas et al. (1997) (global) (.49/.34)	Fabrigar et al. (2017) (+/+ / +/+)	
	Lipkus et al. (2001) (.16/.23)	Jonas et al. (1997) (+/+)	
	Maio et al. (2000) (.45/.13/.47/.27)	Priester and Petty (1996) (+)	
	Newby-Clark et al. (2002) (.18/.39/.29/.35/.36)	Smith et al. (2008) (+/+)	
	Priester and Petty (1996) (global) (.42/.52)		
	Refling et al. (2013) (global) (.70/.50/.64/.30/.63/.26/.33/.03)		
3. Certainty	Thompson et al. (1995) (global) (.40)		
	Bassili (1996) (global) (-/- / NS/NS)	Fabrigar et al. (2017) (-)	Bassili (1996) (NS/NS)
	Krosnick et al. (1993) (affective/cognitive) (-.01/-.09/-.05)	Jonas et al. (1997) (-)	Smith et al. (2008) (-/-)
	Prislin (1996) (evaluative-cognitive) (-.19/.04/-.03/.00)	Maheswaran and Chaiken (1991) (-)	
	Prislin (1996) (evaluative-affective) (-.12/.06/-.11/-.03)	Smith et al. (2008) (-/-)	
	Bassili (1996) (global) (NS/NS/NS/NS/NS)		
	Krosnick et al. (1993) (affective/cognitive) (.00/-.13/-.14)		Bassili (1996) (-/NS)
	Prislin (1996) (evaluative-cognitive) (-.19/.03/-.03/-.09)		
	Prislin (1996) (evaluative-affective) (-.18/.13/-.11/.00)		
	Bargh et al. (1992) (global) (-.54)	Jonas et al. (1997) (-/-)	Bassili (1996) (NS/NS)
5. Extremity (Attitude Polarization)	Bassili (1996) (global) (+/+ / +/NS/NS)		
	Eber et al. (1995) (belief) (.07)		
	Krosnick et al. (1993) (affective/cognitive) (-.29/-.17/-.38)		
	Prislin (1996) (evaluative-cognitive) (-.14/-.05/-.10/-.01)		
	Prislin (1996) (evaluative-affective) (-.33/.08/-.12/-.02)		
	Bassili (1996) (global) (NS/NS)		
6. Extremity (Subjective)	Bassili (1996) (global) (NS/NS)		Bassili (1996) (-/NS)

Note: Numerical values are correlation coefficients. The + symbol indicates a significant positive effect, and the - symbol indicates a significant negative effect. NS indicates a nonsignificant effect.



### ***Processes Underlying Structural Effects on Attitude-Behavior Consistency***

As we will see, a substantial literature has accumulated over the past few decades demonstrating that structural properties moderate attitude-behavior associations. However, a number of researchers (e.g., Fazio & Roskos-Ewoldsen, 2005; Fabrigar et al., 2005; Fabrigar & Wegener, 2010; Fabrigar, Wegener, & MacDonald, 2010) have noted that much less is known about the processes responsible for these effects. Before reviewing this literature, it is useful to consider precisely why one might expect structural properties to play a role in attitude-behavior consistency. Our discussion of this issue is guided by a theoretical framework we refer to as the Mechanisms Responsible for Prediction and Influence (MRPI) model (see also Fabrigar et al., 2005, 2010; Fabrigar & Wegener, 2010). This perspective starts with the premise that although the number of structural properties that influence attitude-behavior consistency is large, ultimately these constructs exert their effects as a function of a finite set of processes.

When considering these processes, it is important to begin by distinguishing between prediction and influence. Attitude-behavior consistency is usually operationalized in terms of prediction (i.e., the strength of association between a measure of attitude and a subsequent behavior). However, the degree to which an attitude measure predicts a behavior is not synonymous with the degree to which an attitude influences that behavior. There are at least two processes by which a measure of attitude might fail to predict a behavior without necessarily implying that the attitude has no influence on the behavior.

First, a measure might fail to accurately assess the attitude. For example, socially desirable responding might result in people failing to report their actual attitudes. Finding that such reports do not predict behavior in no way implies that people were not relying on their attitudes as guides to behavior. Rather, it remains plausible that attitudes influenced behaviors and would have predicted behavior had people honestly reported them. Second, even if responses to a measure accurately reflect the attitude at that time, these responses might fail to predict subsequent behavior if the attitude changes during the interval between its initial measurement and the performance of the behavior (see also Glasman & Albarracín, 2006). Thus, two mechanisms by which attitude structure might moderate attitude-behavior prediction, in the absence of any actual moderation of the impact of attitudes on behavior, could be by altering the accuracy of attitude measurement or the stability of attitudes over time. Importantly, in many of the studies of attitude-behavior consistency we will review, it would be difficult to rule out one or both of these processes on conceptual or methodological grounds.

Of course, structure often does likely play a role in regulating the actual influence of attitudes on behavior. In considering why structure might play such a role, it is important to distinguish between behaviors that are deliberative versus nondeliberative. Attitude researchers have long recognized that attitudes can be changed through relatively thoughtful or non-thoughtful means (e.g., see Chaiken, Liberman, & Eagly, 1989; Petty & Cacioppo, 1986; Petty & Wegener, 1999). So too can behaviors be performed either as a result of relatively careful deliberation or as a result of rather nondeliberative processes (Fazio, 1990; Fazio & Olson, 2014). The processes by which structural properties moderate attitudinal influences on behavior likely vary as function of the level of deliberation involved in performance of the behavior.

When people are unmotivated or unable to carefully deliberate, attitudes could influence behavior in at least two possible ways. First, the attitude could serve as a direct cue to infer whether a behavior is appropriate (cf. Petty & Briñol, 2014; Petty & Wegener, 1999). For example, imagine that someone invites you to a party, seemingly expecting a response at the time of the invitation. You have little opportunity to carefully evaluate the merits of accepting versus rejecting the invitation before responding (e.g., who else will be attending, the nature of the activities, alternative opportunities). In such a situation, your attitude toward the person might provide a quick and easy

basis to infer whether you should accept. A second process by which attitudes could influence behavior under low deliberation could be by serving as an indirect cue. That is, the attitude could focus attention on attitude-congruent features of the attitude object or the behavioral context, and these features in turn could serve as simple cues regarding how to behave (Fazio & Dunton, 1997; Fazio, Ledbetter, & Towles-Schwen, 2000; Smith et al., 1996; see also Fazio, 1990; Fazio & Olson, 2014). For instance, imagine a police officer is called to the scene of a potential crime in which the suspect is a member of a visible minority. If that police officer holds a negative attitude toward the minority group, the negative attitude might focus the person on simple visual cues that are negative rather than positive (an aggressive posture rather than a friendly facial expression, the possession of a weapon rather than the nonthreatening manner in which it is being held) and these negative visual cues might serve as a basis for the officer to make a split-second judgment to use deadly force.

Of course, attitudes are only likely to serve as direct or indirect cues to behavior if they are activated at the time of the behavior (Fazio, 1990; 1995; Fazio & Olson, 2014). Many structural properties of attitudes might play a role in the likelihood that the attitude is activated. Thus, under nondeliberative conditions, structural properties of attitudes might moderate the impact of attitudes via their role in regulating attitude activation.

When people are both able and motivated to deliberate, attitudes could influence behavior by serving as an argument or a biasing factor (cf. Petty & Briñol, 2014; Petty & Wegener, 1999). If the attitude is perceived as an informative guide to the behavior, it might serve as a direct argument regarding a course of action (Fabrigar et al., 2006). For example, the relative liking of two potential relationship partners could be viewed as an argument directly relevant to selecting which relationship to pursue. However, even if the attitude is not directly relevant to evaluating the merits of a course of action, it could still influence behavior by biasing interpretation of behavior-relevant information (if the behavioral context contains information that is sufficiently ambiguous to permit bias in interpretation; see Chaiken & Maheswaran, 1994). For example, imagine a person is choosing between cars from two different salespeople. Attitudes towards the salespeople are not directly relevant to evaluating the merits of the cars but might bias how information about the two vehicles is interpreted and processed.

Of course, attitudes must be activated at the time of the behavior (or when information that will be used as the basis for the behavior is processed) for an attitude to function as an argument or biasing factor. Thus, for highly deliberative behavior, structure will sometimes moderate the impact of attitudes on behavior by regulating attitude activation. However, attitude activation is not the only possible mechanism. Structure might influence the extent to which an attitude is viewed as a relevant and informative argument to favor or oppose a course of action (Fabrigar et al., 2006). Likewise, structure might affect the extent to which an attitude is seen as a legitimate source of influence on how behavioral information should be interpreted versus an inappropriate source of bias whose influence should be eliminated (cf., Wegener & Petty, 1997).

Importantly, this mechanism of judging how informative a guide an attitude is to a given behavior (i.e., how “applicable” an attitude is to a behavior) should play more of a role when behaviors are highly deliberative. Considering the relevance of an attitude to a behavior and disregarding its influence if it is judged uninformative requires substantial cognitive effort. Indeed, people often rely on their attitudes when it is logically inappropriate to do so if they lack motivation or ability to deliberate, but they are less likely to rely on such attitudes when they are able and motivated to carefully consider their actions (Fabrigar et al., 2006; Sanbonmatsu & Fazio, 1990; Schuette & Fazio, 1995).

A final deliberative process through which structure might moderate the influence of attitudes on behavior is by regulating the magnitude of bias that an attitude exerts on the processing of information in the behavioral context. Structure may determine the motivation and ability that a person has to process behavior-relevant information in a biased manner.<sup>6</sup>

## ***Empirical Evidence for Structure as a Moderator of Attitude-Behavior Consistency***

### *Accessibility*

Many accessibility studies measure response latencies to attitude measures and then test whether latencies moderate the ability of attitude measures to predict behaviors. Measured attitude accessibility has moderated attitude-behavior/judgment relations in contexts such as voting (Bassili, 1993, 1995; Fazio & Williams, 1986), consumer product choices (Fazio, Powell, & Williams, 1989; Kokkinaki & Lunt, 1997), and self-judgments (DeMarree et al., 2010). Other studies have manipulated accessibility via attitude expression or attitude object presentation. Manipulated accessibility has moderated the ability of attitudes to predict behaviors such as decisions to play with puzzles (Fazio et al., 1982), choices of consumer products (Berger & Mitchell, 1989), and donations to charities (Posavac, Sanbonmatsu, & Fazio, 1997). Meta-analyses have also suggested that accessibility moderates attitude-behavior consistency (Glasman & Albarracín, 2006).

To date, there has been no comprehensive evaluation of the potential role of the mechanisms discussed in the prior section in accounting for the effects of accessibility on attitude-behavior associations. Nonetheless, there are some data relevant to evaluating several of these mechanisms. For example, studies have documented that greater attitude accessibility is related to enhanced stability of attitudes over time (Bargh et al., 1992; Grant, Button, & Noseworthy, 1994). Similarly, aggregate measures of structural properties (which included accessibility) have also predicted attitude stability (Prislin, 1996).

Other data suggest that attitude accessibility can moderate use of attitudes as indirect cues. For example, activation of attitudes can direct attention to features of an object. Smith et al. (1996) manipulated the accessibility of attitudes toward social categories and increased accessibility enhanced the speed with which people judged whether a particular target person was a member of a given category. Accessible attitudes directing attention can also keep perceivers from noticing elements of the target not directly related to the attitude. For instance, Fazio et al. (2000) manipulated the accessibility of attitudes towards photos of people using an attitude expression manipulation and then later presented participants with the same photos and photos that had been altered. Increased accessibility produced slower and less accurate judgments of whether photos had been previously viewed. These studies demonstrate that making attitudes more accessible enhances the likelihood that an attitude will direct attention to particular features. However, no studies have examined whether directive processing of specific features of an object might in turn account for the attitude's impact on subsequent behavior.

Finally, accessibility could moderate attitude-behavior consistency under deliberative conditions by regulating the likelihood that an attitude is activated and biases elaboration of behavior-relevant information. Though no studies have directly tested this mechanism, there is evidence for the first step in this process. Fazio and his colleagues manipulated accessibility of attitudes and demonstrated that highly accessible attitudes had a greater impact on evaluations of attitude-relevant information than attitudes low in accessibility (Houston & Fazio, 1989; Schuette & Fazio, 1995). Similarly, Fazio and Williams (1986) measured attitudes towards presidential candidates and the accessibility of these attitudes. They found that attitudes higher in accessibility were more predictive of evaluations of the candidates' debate performances.

### *Content of Attitude-Relevant Information*

Theorists have long postulated that attitudes are better predictors of behavior when they are based on information relevant to the goals driving the behavior. For example, Millar and Tesser (1986b) found that affective attitudes were more predictive of consumatory behaviors rather than

instrumental behaviors. In contrast, cognitive attitudes did better at predicting instrumental behaviors than consumatory behaviors. Matching effects between the attitude basis and the behavior have also been demonstrated for distinct dimensions of cognition (Fabrigar et al., 2006). Specifically, attitudes toward competing stores were more predictive of decisions regarding where to shop when the attitudes were based on information directly relevant to the nature of the purchase decision. Moreover, this matching effect between the attitude basis and the behavior was stronger under highly deliberative conditions than nondeliberative conditions thereby supporting the deliberative nature of the process. This finding suggests that the content of attitude-relevant information influenced the extent to which the attitude was seen as a relevant guide to behavior (Fabrigar et al., 2006).

### *Working Knowledge and Complexity*

Some studies have tested whether knowledge listing measures moderate attitude-behavior associations, and demonstrated that increased knowledge is related to stronger attitude-behavior relations in the context of environmental attitudes and recycling behavior (Kallgren & Wood, 1986) and voting intentions and subsequent voting behavior (Davidson et al., 1985). Studies using subjective measures of knowledge have also demonstrated effects on attitude-behavior prediction (Davidson et al., 1985; Wegener, Kelly, Wallace, & Sawicki, 2014). Recent research has also suggested that knowledge effects on attitude-behavior consistency are in turn moderated by ambivalence (Wallace et al., 2017). Using subjective measures of knowledge and ambivalence, increases in knowledge were found to only be associated with higher attitude-behavior consistency when ambivalence was low.

One mechanism by which knowledge might influence attitude-behavior associations is via measurement processes. Bassili and Krosnick (2000) explored the extent to which various strength-related properties of attitudes moderated the magnitude of various question context, wording, and format effects. They found evidence that increased subjective knowledge resulted in weaker middle-alternative effects (i.e., less effect of explicit mention of a middle alternative on provision of middle-alternative responses). Likewise, stability might also account for some knowledge effects. Consistent with this view, Wilson, Kraft, and Dunn (1989) found that introspection about one's attitudes altered attitudes thereby leading to weaker attitude-behavior associations, but these effects were greater for attitudes based on little working knowledge than for attitudes based on extensive knowledge.

Finally, there is some evidence that knowledge complexity might influence the extent to which attitudes are perceived as informative guides to deliberative behaviors (Fabrigar et al., 2006). In two experiments, when an attitude was based on a single knowledge dimension (low complexity) and the dimension had little direct relevance to the goal of the behavior, the attitude had little impact on decisions. In contrast, complex attitudes with multiple evaluatively consistent dimensions influenced decisions even when the goal of the behavior had little direct relevance to any of the dimensions of knowledge. This presumably occurred because the object was assumed to be generally good or bad across unknown dimensions and thus perceived as an informative guide across a wide range of behaviors.

### *Ambivalence*

Studies using structural measures of global ambivalence have found increased ambivalence reduces attitude-behavior or intention-behavior consistency (e.g., Conner, Sparks, Povey, James, Shepherd, & Armitage, 2002; Costarelli & Colloca, 2007; Dormandy, Hankins, & Marteau, 2006). Studies specifically measuring ambivalence in evaluative beliefs have produced similar results (Armitage, 2003; Moore, 1973). Other studies using subjective measures of ambivalence have also suggested

that ambivalence is negatively related to attitude-behavior consistency (Costarelli & Colloca, 2007; Priester, 2002; Wegener et al., 2014; Ziegler, Hagen, & Diehl, 2012) or that such a pattern is more likely when reported knowledge is relatively high rather than low (Wallace et al., 2017). Finally, studies measuring cross-dimension ambivalence (more specifically evaluative-cognitive consistency) have produced mixed evidence. Some research linked increased ambivalence to decreased attitude-behavior consistency (Norman, 1975) whereas other studies failed to find an effect (Fazio & Zanna, 1978).

A smaller body of research has tested the moderating role of ambivalence by manipulating ambivalence. Armitage (2003) manipulated ambivalence by assigning participants to a thought condition intended to make beliefs less ambivalent or to not alter the ambivalence of beliefs. Greater ambivalence among beliefs was associated with lower attitude-behavior consistency. In contrast, Jonas et al. (1997) directly manipulated the consistency of beliefs regarding a consumer product and found that increased ambivalence produced higher levels of attitude-behavior consistency. They suggested that attitude-behavior consistency increased because ambivalence encouraged people to extensively elaborate attitude-relevant information. Sengupta and Johar (2002) argued that ambivalence should produce higher attitude-behavior consistency when people engage in elaboration of information directed toward forming a coherent attitude. Similarly, when the behavior involves seeking of information (in)consistent with one's attitude, ambivalence can sometimes lead to more attitude-consistent choices, presumably as a way to reduce the ambivalence (Sawicki et al., 2013). In contrast, ambivalence should lead to lower attitude-behavior consistency when people are not specifically trying to resolve inconsistencies (Sengupta & Johar, 2002).

There is also evidence regarding the specific mechanisms that might be responsible for these ambivalence effects on attitude-behavior associations. With respect to measurement processes, research has suggested that increased ambivalence is related to greater impact of factors such as priming (MacDonald & Zanna, 1998), mood (Bell & Esses, 1997), and introspection (Erber et al., 1995) on attitudinal judgments. Thus, ambivalence may open people to influences that decrease the extent to which attitude measures primarily index differences in evaluations *per se*. Likewise, research suggests that people with generally stronger attitudes (aggregating across various structural properties including ambivalence) are less susceptible to question context effects than people with weaker attitudes (Lavine et al., 1998). Along similar lines, several studies have documented that decreases in ambivalence (Chaiken et al., 1995; Erber et al., 1995; Norman, 1975) are related to the enhanced stability of attitudes over time.

More recently, experiments have examined perceived applicability mechanisms underlying the impact of ambivalence under highly deliberative conditions (Fabrigar, Petty, Smith, Wood, & MacDonald, 2017). These experiments tested two possible contexts in which cross-dimension ambivalence might result in complex attitudes being judged as uninformative guides to behavior. First, if a behavior happens to be relevant to a single dimension or a subset of dimensions that are inconsistent with the overall attitude (e.g., the overall evaluation is positive but the relevant dimension is negative), people might judge their global attitudes to be uninformative and thus not rely upon them when deliberating about a decision (cf. Sanbonmatsu & Fazio, 1990). Second, when inconsistency exists among dimensions, people may be unwilling to extrapolate beyond what they know and thus unwilling to rely on their attitudes when faced with a behavior that is not directly relevant to any dimensions underlying their attitudes. As expected, Fabrigar et al. (2017) found that complex non-ambivalent attitudes were generally good predictors of behaviors relevant and irrelevant to the dimensions of knowledge underlying the attitude. However, complex attitudes high in cross-dimension ambivalence were poor predictors of decisions relevant to a dimension of knowledge that contradicted the global attitude and of decisions that were not relevant to any of the dimensions of knowledge underlying the attitude. Interestingly, when the decision was relevant to all three dimensions of complex cross-dimension ambivalent attitudes, the attitudes were reasonably good predictors.

This is because the decision required balancing competing goals and the overall attitude was in fact a summary of these competing dimensions. Thus, it was judged to be an informative guide.

In a final experiment, complex within-dimension ambivalent attitudes were compared with complex cross-dimension ambivalent attitudes and complex non-ambivalent attitudes. Although both types of ambivalent attitudes had equal overall amounts of inconsistency, the two types of ambivalent attitudes produced a very different patterns of effects. Complex within-dimension ambivalent attitudes were somewhat weaker predictors than complex non-ambivalent attitudes. However, they did not show the same dramatic drops in prediction of behaviors relevant to a single dimension of knowledge or behaviors with little relevance to any dimensions of knowledge. Thus, under highly deliberative conditions, people's judgments of the utility of their attitudes as guides to behavior were not only shaped by the amount of inconsistency in attitude-relevant information but also by the manner in which that inconsistency was organized (Fabrigar et al., 2017).

### *Attitude Certainty and Attitude Importance*

Increased certainty produces greater attitude-behavior consistency in domains such as participation in psychological research (Fazio & Zanna, 1978), support for social policies (Franc, 1999), product choices (Rucker & Petty, 2004), social interactions (Bizer, Tormala, Rucker, & Petty, 2006), and voting (Sample & Ward, 1973; Tormala & Petty, 2002). Similar to ambivalence, when the behavior involves seeking of information (in)consistent with one's attitude, uncertainty can sometimes lead to more attitude-consistent choices, presumably as a way to reduce the uncertainty (Sawicki et al., 2011). Likewise, increased ratings of importance have been found to be related to stronger attitude-behavior associations in contexts such as class attendance (Rokeach & Kliejunas, 1972), cigarette smoking (Budd, 1986), and voting (Krosnick, 1988a; Schuman & Presser, 1981). Research suggests that at least one mechanism that might be responsible for these effects is attitude stability. Increased certainty (Bassili, 1996) and higher levels of importance (Krosnick, 1988b) are both related to the enhanced stability of attitudes over time. Similarly, aggregate measures of structural properties that included both certainty and importance have also been found to predict attitude stability (Prislin, 1996).

### **Attitude Structure and Attitude Change**

The second reason that attitude structure has been of great interest to researchers is that structure has long been postulated to play an important role in attitude change (e.g., Rosenberg, Hovland, McGuire, Abelson, & Brehm, 1960). As such, a sizeable literature on the role of attitude structure in persuasion has accumulated (e.g., see Eagly & Chaiken, 1998; Fabrigar et al., 2005; Fabrigar & Wegener, 2010; Petty & Krosnick, 1995). Historically, attitude researchers have postulated two types of structural effects on attitude change. First, researchers have suggested that many structural properties regulate the overall susceptibility of an attitude to change. Second, researchers have proposed that some structural properties regulate the efficacy of different types of persuasive messages.

### *Processes Underlying Structural Effects on Attitude Change*

As we will see, although researchers have documented the effects of many structural properties of attitudes on persuasion, much of this research has not focused on underlying psychological mechanisms. As was the case with our discussion of attitude-behavior consistency, before reviewing the attitude structure persuasion literature, it is useful to first consider the possible mechanisms by which structural properties might influence persuasion. In approaching this question, we make use of a conceptual framework that relies heavily on distinctions among low, high, and moderate levels of elaboration in attitude change (cf., Petty & Briñol, 2010, 2014; Petty & Wegener, 1998a, 1999).



### *Thoughtfulness and Attitude Change*

The mechanisms by which structure influences persuasion likely vary depending on whether attitude change occurs via relatively thoughtful or non-thoughtful processes (first advanced in the elaboration likelihood model, Petty & Cacioppo, 1981, 1986, and the heuristic-systematic model, Chaiken, 1987; Chaiken et al., 1989). These and related models of attitude change posit that highly thoughtful processes dominate when individuals are motivated and able to carefully consider available information. When motivation and ability are high, attitudes are largely determined by a person's assessments of the "central merits" of the attitude object. Less thoughtful processes dominate when individuals lack the motivation and/or the capacity to carefully evaluate information about the attitude object. In such cases, people tend to rely on heuristics or other peripheral cues as a simple basis to arrive at an attitude. Thus, structural properties of attitudes might influence the likelihood of initial attitudes serving in a particular role at a given the level of elaboration of attitude-related information.

#### *Low-Elaboration Likelihood*

When people lack ability and/or motivation to carefully consider a persuasive appeal, pre-message attitudes can serve as peripheral cues to whether the appeal should be accepted (Wegener, Petty, Smoak, & Fabrigar, 2004). This role requires that one's pre-message attitude is activated at the time of the message. Various structural properties might influence activation of pre-message attitudes and, therefore, the likelihood that they can serve as a cue to accept or reject a message. However, little research has addressed this potential role for pre-message attitudes, so the empirical literature primarily examines influences of pre-message attitudes in high- or moderate-elaboration settings.

#### *High-Elaboration Likelihood*

When individuals have the ability and motivation to consider the merits of a persuasive appeal, pre-message attitudes can bias evaluation of the message arguments (Wegener et al., 2004). People tend to accept and process in a confirmatory manner arguments that are compatible with their pre-message attitudes, but they tend to reject and counterargue arguments incompatible with their pre-message attitudes (Edwards & Smith, 1996; Lord, Ross, & Lepper, 1979). Attitudes should only bias processing if they are activated, so highly accessible attitudes should be more likely to bias processing (Houston & Fazio, 1989). However, in some cases, even if attitudes are accessible and activated, people might perceive them as creating inappropriate influences that should be avoided or *corrected* (Wegener & Petty, 1997). Even if the attitude is perceived as applicable and appropriate, attitude-consistent biases will vary depending on one's ability to implement the bias (e.g., informational resources) and one's motivation to implement the bias (e.g., consistency pressures). Thus, structural variables can moderate the extent to which pre-message attitudes will serve as biasing factors by influencing the likelihood of attitude activation, the likelihood of viewing the attitude as applicable and appropriate for use in processing attitude-relevant information, and the level of ability and motivation to carry out biased processing (cf., motivation and ability biases in the ELM; Petty & Cacioppo, 1986).

Pre-message attitudes could also validate one's thoughts if elaboration is high and the attitude is activated when thoughts about the attitude object are salient to the person (Briñol & Petty, 2009; Petty & Briñol, 2014). For example, just as stereotypes toward a group can validate stereotype-consistent perceptions of a group member (Clark, Wegener, Briñol, & Petty, 2009), an attitude toward the group could validate attitude-consistent thoughts—perhaps especially so when the attitude has one or more structural properties that influence its likelihood of activation or its likelihood of being perceived as a relevant and appropriate guide to thinking or behavior.<sup>7</sup>



*Moderate-Elaboration Likelihood*

When elaboration likelihood is not constrained to be particularly high or low, pre-message attitudes can influence the how carefully people process the message. Structure might influence motivation or ability to process information via their impact on attitude activation, perceived self-relevance of the message, or the person's ability to scrutinize the message. Structural variables could also influence the extent to which messages are perceived as threatening or the extent to which the person is motivated to bolster their existing attitudes.

***Empirical Evidence for the Role of Structure in Attitude Change***

*Accessibility*

Given the role of attitude activation in the conceptual framework we have outlined, one would expect that attitude accessibility would play a role in persuasion. The traditional finding in the literature has been that attitudes are harder to change when they are more accessible (e.g., Bassili, 1996) or when the attitude is linked to an accessible value (Blankenship et al., 2015). However, our conceptual model suggests that accessibility effects might be more varied.

To date, there has been no direct examination of accessibility persuasion effects via low-elaboration processes. However, there is evidence that accessibility moderates the impact of prior attitudes as a biasing factor in processing persuasive messages under high elaboration. For example, in a study measuring attitude accessibility, Fazio and Williams (1986) found that more accessible attitudes toward political candidates influenced perceptions of their debate performance to a greater degree. Similarly, evaluations of attitude-relevant information were more influenced by prior attitudes when the attitudes were higher in manipulated accessibility (Houston & Fazio, 1989; Schuette & Fazio, 1995).

The impact of attitude accessibility on resistance to persuasion is also likely to vary under moderate-elaboration conditions. In these cases, attitude accessibility might influence the amount of elaboration which could lead to more or less persuasion depending on the strength of the message. Traditionally, messages have been assumed to receive greater processing when they are counter-rather than pro-attitudinal (e.g., Cacioppo & Petty, 1979; Edwards & Smith, 1996). However, studies measuring or manipulating attitude accessibility have both indicated that accessibility moderates this pattern. When a message is counterattitudinal, it receives greater scrutiny when pre-message attitudes are higher in accessibility (Clark, Wegener, & Fabrigar, 2008a; Fabrigar, Priester, Petty, & Wegener, 1998). This enhanced elaboration of counterattitudinal messages with increased accessibility may be because people with highly accessible attitudes perceive counterattitudinal messages as more threatening and thus attempt to actively counterargue them (Clark & Wegener, 2013). When the persuasive message is pro-attitudinal, however, studies measuring or manipulating accessibility indicate that greater accessibility is associated with less message scrutiny (Clark et al., 2008a). This decreased elaboration is because people with highly accessible attitudes believe that a pro-attitudinal message is likely to contain information that the person already knows.

*Content of Attitude-Relevant Information*

Attitude theorists have long postulated that the content of attitude-relevant information regulates the efficacy of different types of persuasive messages. For example, studies have suggested that affective or cognitive persuasive appeals are more effective when targeting an attitude with the same underlying basis. This affective/cognitive "matching effect" has been demonstrated using manipulations intended to alter the structural bases of attitudes (Edwards, 1990; Edwards & von Hippel,

1995; Fabrigar & Petty, 1999) and in studies in which attitude bases were measured. Such measures have included structural measures of attitude bases as well as subjective reports of attitude bases (i.e., meta-bases; See et al., 2008). Finally, matching effects have also been obtained when attitude bases were operationalized using broad dispositional measures of need for cognition and need for affect (Haddock et al., 2008). To date, there have been no direct tests of potential high, moderate, and low-elaboration processes that might account for these effects.

Along similar lines, studies have also explored attitude functions. In these studies, the norm has been to find evidence of attitude function–matching effects (i.e., more persuasion when targeting an attitude that serves the function stressed in the message). Matching effects have been documented when functions were operationalized by selecting attitude objects associated with a particular function (e.g., Shavitt, 1990) and when individual differences in self-monitoring were used to identify likely functions (e.g., DeBono, 1987; Snyder & DeBono, 1985). Moreover, there has been work exploring the processes underlying attitude function persuasion effects. For example, within the context of high elaboration, Lavine and Snyder (1996, 2000) tested the biased processing hypothesis and found that messages were perceived to be of higher quality when they matched the functional basis of attitudes. These perceptions of argument quality mediated the relationship between functional matching status and post-message attitudes. In a related vein, Evans and Clark (2012) examined functional matches as potential validating factors when message recipients learn the qualities of the source after a persuasive message (cf., Tormala, Briñol, & Petty, 2007). Learning that the source was an expert validated thoughts for people relatively low in self-monitoring, whereas learning that the source was attractive validated thoughts for people relatively high in self-monitoring.

Interestingly, although matching effects have been the norm in both affective/cognitive bases and attitude function persuasion research, some studies have produced mismatching effects (e.g., Millar & Millar, 1990; Petty & Wegener, 1998b). Such exceptions may point to the importance of factors such as argument strength and the consistency with a person's existing attitude. If elaboration is high, a person might actually be more able or motivated to counterargue opposing information that matches the basis of the person's current attitude (see Millar & Millar, 1990). Thus, if counterattitudinal arguments are weak, they might actually be less persuasive if they match rather than mismatch the basis of the attitude.

In more moderate-elaboration conditions, messages whose content matches the functional or affective/cognitive basis of an attitude may be scrutinized to a greater extent than messages that mismatch the basis of the attitude (Lavine & Snyder, 2000; Petty, Wheeler, & Bizer, 2000; Petty & Wegener, 1998b). In at least some of these settings, matching messages may be perceived as more relevant to the person than mismatching messages (in the functional domain, see DeBono & Packer, 1991). Because greater elaboration can lead to more or less persuasion depending on the quality of the arguments, under moderate-elaboration conditions, either matching or mismatching effects might emerge. This could account for some apparent inconsistencies in the literature on affective/cognitive matching (see Fabrigar & Petty, 1999).

### *Working Knowledge and Complexity*

Traditionally, increased knowledge has been presumed to strengthen an attitude's resistance to persuasion. Consistent with this view, studies manipulating (Lewan & Stotland, 1961) or measuring the amount of working knowledge (Wood, 1982) have suggested that higher levels of knowledge are associated with more resistance to persuasion. Thus far, the role of knowledge under low elaboration has not been examined. However, there has been some discussion of the effects of working knowledge under high elaboration. Knowledge could regulate the extent to which attitudes bias processing of messages. When motivation and ability to think are high (and information is ambiguous enough for biases in processing to occur), effects of knowledge on biased processing may depend

on additional variables that motivate people to defend their attitudes. For example, knowledge may provide the ability to process in a biased manner whereas affect associated with the attitude object provides the motivation to do so (see Biek, Wood, & Chaiken, 1996; Wood et al., 1995). When attitudes are not affect-laden, people may be less motivated to preserve their existing attitude and high levels of knowledge may be associated with motivation for accuracy. Similar principles might also apply when knowledge is combined with other strength-related properties (e.g., importance, certainty) that might heighten motivation to defend one's attitude (see also Petty, Tormala, & Rucker, 2003; Wegener et al., 2004). This general approach might also apply to attitudes associated with moral conviction (Skitka, Bauman, & Sargis, 2005; Wright, Cullum, & Schwab, 2008).

When elaboration likelihood is moderate, amount or complexity of knowledge might influence one's motivation or ability to process a persuasive message (and individual differences in amount of knowledge could also be associated with other motivational variables, such as perceived importance of the topic). Indeed, studies using knowledge listing measures, increased knowledge has been associated with greater processing of message content (e.g., Wood & Kallgren, 1988; Wood, Kallgren, & Preisler, 1985). Less-knowledgeable people were not only less likely to critically evaluate new information, but, rather, relied on cues such as message length (Wood et. al., 1985) or source characteristics (Wood & Kallgren, 1988).

### *Ambivalence*

Decreased ambivalence has long been presumed to be associated with more resistance to persuasion. This effect has been demonstrated using measures of general structural ambivalence (Armitage & Conner, 2000) as well as measures of structural affective-cognitive inconsistency (Chaiken & Baldwin, 1981). Although there are a number of reasons to suggest that ambivalent attitudes would be less likely to influence persuasion under low- or high-elaboration (e.g., they are less accessible, less extreme, and held with less confidence), direct tests of these processes have been lacking. Moreover, even when the attitude is activated and seen as applicable under high-elaboration conditions, ambivalence may decrease ability to effectively counterargue a message (Chaiken & Yates, 1985; Eagly & Chaiken, 1995) if conflicting underlying knowledge makes it difficult to generate strong refutations. Thus, it is not surprising that researchers have commonly reported that more ambivalent attitudes are more susceptible to persuasion. Despite these facts, ambivalence might not always reduce the impact of attitudes in processing of persuasive messages. For example, if people are motivated to resolve conflict in their attitude-relevant knowledge, then processing can be biased in high-elaboration settings to favor the side of the issue that the person already supports (Nordgren, van Harreveld, & van der Pligt, 2006).

Likewise, the effects of ambivalence under moderate-elaboration conditions have been comparatively complex. Traditionally, researchers postulated that ambivalence should lead to more careful elaboration of persuasive messages because people process messages in an effort to reduce their ambivalence. Early research using structural measures of ambivalence supported this prediction (Maio, Bell, & Esses, 1996). However, if elaboration is in the service of decreasing ambivalence, then elaboration should be more likely when available information is pro-attitudinal (where thinking is likely to resolve the ambivalence) rather than counterattitudinal (when processing is less likely to resolve the ambivalence). Indeed, Clark, Wegener, and Fabrigar (2008b) found that increased subjective ambivalence was associated with greater elaboration of pro-attitudinal messages. This effect was reversed for counterattitudinal messages (see Clark & Wegener, 2013). When focusing on ambivalent message recipients, greater elaboration of pro-attitudinal messages was due in part to the perceived likelihood of the message reducing ambivalence. In conceptually related research, Sawicki et al. (2013) showed that people with ambivalent attitudes are especially likely to seek out attitude-consistent information when knowledge is low so that new information is more capable of reducing ambivalence.

### *Attitude Certainty*

Attitudes are more resistant to change when associated with high levels of confidence (Bassili, 1996; Petrocelli et al., 2007; Tormala & Petty, 2002). To the extent that such effects reflect metacognitive influences, one would not expect such effects of certainty to be based on low-elaboration processes because consideration of such metacognitions often require substantial cognitive resources. Under high-elaboration conditions, certainty would be expected to moderate the biasing impact of attitudes on persuasive messages, although this effect has yet to be directly tested. However, certainty's effects on the amount of cognitive elaboration of persuasive messages under conditions of moderate elaboration has been tested. The HSM postulated that people use heuristics or systematically process information with the intent of increasing attitude confidence to meet a desired level of confidence (the sufficiency principle; Chaiken et al., 1989). This idea suggests that people would be likely to increase message processing when their current level of confidence is low. Bohnet, Rank, Reinhard, Einwiller, and Erb (1998) showed that people sought additional attitude-relevant information when current confidence was low rather than high, but that this only occurred when people perceived the available information as capable of increasing their attitude confidence.

However, confidence might have other effects on message processing. For example, repeated attitude expression (a typical manipulation of attitude accessibility) also increases confidence (Holland et al., 2003; Petrocelli et al., 2007). Therefore, just as attitude accessibility can have opposing effects on amount of processing depending whether the message is pro- or counterattitudinal (Clark et al., 2008a), confidence might also have opposing effects (see Clark & Wegener, 2013). That is, effects consistent with the sufficiency principle might be more likely with pro-attitudinal messages (which should be perceived as capable of increasing confidence). In contrast, higher levels of confidence might motivate greater processing of counterattitudinal messages if the higher level of certainty in one's pre-message attitude makes the counterattitudinal message more of a threat or if confidence in the attitude also gives one confidence that the attitude can be effectively defended (Albarracín & Mitchell, 2004; for a description of unpublished studies showing these opposing patterns, see Clark & Wegener, 2013). Other research has shown that high levels of confidence can increase message processing when the message is described as intended to remove doubt (but low levels of confidence result in greater processing when no confidence-related frame was given to the message; Tormala, Rucker, & Seger, 2008; cf., Chaiken et al., 1989).

### *Attitude Importance*

Attitudes are more resistant to change when perceived as personally important (Fine, 1957; Gorn, 1975) or when the attitude is linked to an important value (Blankenship & Wegener, 2008). As with certainty, if effects of importance are metacognitive, one would not expect attitude importance to play much of a role in persuasion under low-elaboration conditions because of the cognitive resources required to consider metacognitions. In contrast, under high elaboration, one would expect attitudes high in importance to exert a stronger biasing impact, although this process has not been directly tested. However, research has tested importance effects under moderate-elaboration conditions. This research suggests that perceiving an attitude (Boninger, Krosnick, Berent, & Fabrigar, 1995) or issue (Petty & Cacioppo, 1990) as important increases processing of attitude-relevant information (e.g., Blankenship & Wegener, 2008; Holbrook et al., 2005). The high level of involvement with the attitude object (Petty & Cacioppo, 1990) would increase motivation to process attitude-related information.

### **General Discussion**

When judged in its entirety, the attitude structure literature has made great progress over the past 75 years. Although theorists recognized very early on the importance of attitude structure, much

of this early work was speculative in nature and empirical investigations were to some degree hampered by a lack of well-developed methodological approaches for exploring structural properties of attitudes. However, by the 1970s and 1980s, a great deal of progress was made in delineating the specific features of structure relevant to attitudinal processes and in developing effective measures and experimental manipulations of many of these properties. The 1980s and 1990s saw the documentation of many key effects of structure in the context of both attitude-behavior consistency and persuasion.

Most of this previous research on attitude structure has focused on structure as a predictor of attitude strength (especially attitude-behavior consistency). In this sense, attitude structure serves as an important outcome variable in studies of attitude change, because interventions are aimed not only at creating attitudes favorable to one's preferred view, but also at creating attitudes that will have lasting impact on later thinking and behavior. However, there is much work to be done. For example, more contemporary research over the past 15 years has moved beyond simply establishing that structural properties moderate attitude-behavior consistency and begun to focus on the psychological processes responsible for these effects. Beyond providing a richer explanatory account, this increased focus on underlying mechanisms has produced more sophisticated predictions regarding when structural properties should or should not moderate attitude-behavior consistency and how they might work in conjunction with one another or with nonstructural factors to influence attitude-behavior consistency (see Fabrigar et al., 2010).

The roles of attitude structure in persuasion parallel the roles of attitude structure in attitude-behavior relations in many ways, because attitude change can be relatively deliberative or non-deliberative, just as behaviors can be relatively deliberative or nondeliberative. In addition to attitude structure effects on use of one's pre-message attitude as a cue (under low-elaboration conditions) or on biasing information processing or validating thoughts (when elaboration likelihood is high), attitude structure can also determine how much deliberation is involved in dealing with a persuasive message (when the level of elaboration is not constrained by other factors to be very high or low). One particularly interesting aspect of moderate-elaboration effects of attitude structure is that structurally "weak" attitudes (i.e., inaccessible, low-certainty, high-ambivalence) can create motives to bolster the attitude that create stronger attitude-consistent influences on processing than when the attitudes are structurally "strong" (i.e., accessible, high-confidence, univalent; see also Clark & Wegener, 2013). Thus, just as in the attitude-behavior consistency literature, current persuasion research in attitude structure is providing increasingly sophisticated insights into the multiplicity of effects that can be produced by a given structural property.

Moving forward, one major challenge for attitude structure researchers will be to continue to explore the mechanisms underlying structural effects on attitude-behavior consistency and persuasion and, in so doing, continue to develop a more nuanced understanding of the complexity of effects produced by these properties. Thus, although broad characterizations of attitudes as being "strong" or "weak" when possessing a given property will probably continue to have some utility, these generalizations are likely to become increasingly contextualized and the implications of these exceptions more fully appreciated. Related to this point, another important trend in contemporary research and challenge for future research is to consider how different structural properties operate in conjunction with one another. Attitudes vary on many structural properties and these properties do not operate in isolation (i.e., their effects are not always additive). A fuller understanding of their effects on attitude-behavior consistency and persuasion requires investigation of their joint effects. Indeed, as we have noted, even our understanding the relationships among different properties requires consideration of these properties in a broader context. The association between two given properties might well be moderated by a third property. It is precisely these added complexities that constitute both the challenge and the opportunity for attitude structure research in the next decade.

## Notes

- 1 Though not yet fully integrated in the attitude structure literature, some researchers have conceptualized attitudes as represented within connectionist networks (e.g., Eiser, Fazio, Stafford, & Prescott, 2003; Eiser, Stafford, & Fazio, 2008, 2009; Smith, Fazio, & Cejka, 1996). Although the language of these networks is a bit different, for the most part they are compatible with the distinctions and effects originally conceptualized using localist associative networks.
- 2 By using factor analytic models to test taxonomies, researchers have clearly implied that attitude properties within the same “factor” tap a common underlying construct and should be highly inter-correlated. However, one might argue that, even if a taxonomy is not supported by a factor analytic model, this does not necessarily invalidate the proposed taxonomy. It could be that constructs within the same category do not co-vary with one another but do produce similar outcomes or exert influence via similar processes. However, such a taxonomy would seem to require clear theoretical rationales regarding common mechanisms and outcomes shared by constructs within the same category. Existing taxonomies have not provided such rationales.
- 3 Of course, one potential objection to these results may be ceiling effects. That is, the more extreme one initially is, the less room there is for enhanced extremity after repeated expressions. However, even moderate attitudes showed no evidence of extremity effects with repeated expression. Another interesting issue is how to account for open-ended repeated attitude expressions producing enhanced extremity on subsequent rating scales. In theory, such expressions do not force neutral people to state either a positive or negative evaluation. However, wording of such questions may create subtle pressures to do so. Some researchers have suggested that it is socially undesirable to report no opinion on issues (e.g., see Krosnick & Fabrigar, 1997; Schuman & Presser, 1981). Respondents may perceive no opinion or neutral answers to be unhelpful to researchers or to make the respondent appear unknowledgeable about the issue.
- 4 Using domain expertise as an index of complexity is a relatively “impure” measure. Although it is quite plausible that domain expertise will be associated with greater complexity, expertise is also likely to be strongly related to the mere amount of information upon which an attitude is based as well as the extent to which people have thought about that information.
- 5 For purposes of brevity, throughout this section of the chapter, we use the term attitude-behavior consistency in a broad sense to include not only the association between attitudes and overt behaviors, but also the association between attitudes and decisions and judgments. For the most part, the processes we discuss are relevant to understanding the impact of attitudes on all three types of outcomes.
- 6 Structural properties of attitudes could also affect the extent to which people do or do not carefully deliberate when performing a behavior. For example, increased attitude importance could result in people more carefully considering behaviors related to that attitude. Because the mere amount of deliberation in and of itself does not direct a person toward a specific course of action (i.e., performance or lack of performance of a specific behavior), we do not treat this sort of phenomenon as an “attitude-behavior consistency” effect. That being said, such a process could work in conjunction with the processes we have outlined. For example, importance could lead people to more carefully consider a behavior and then could also lead them to judge their attitudes as more informative guides to actions.
- 7 Within the elaboration likelihood model (ELM), under conditions of high elaboration, there are three potential roles that a persuasion variable can serve: biasing factor, validation factor, or argument. In our discussion of attitude change, we primarily focus on the moderating role of structural properties in regulating the extent to which prior attitudes serve as biasing factors. We do so in part because the empirical literature has primarily focused on this role. Additionally, this role is likely the most common role served by pre-existing attitudes in persuasion. However, as we have noted, it is quite plausible that attitudes could sometimes serve a validating role. Contexts in which a prior attitude could serve as an argument (i.e., a piece of information directly relevant to evaluating the merits of a given attitude object) may be less frequent, but could occur when the attitude object is a behavior, for example (see Fabrigar et al., 2010).

## References

- Abelson, R. P. (1988). Conviction. *American Psychologist*, *43*, 267–275.
- Abelson, R. P., & Rosenberg, M. J. (1958). Symbolic psychologic: A model of attitudinal cognition. *Behavioral Science*, *3*, 1–13.
- Albarracín, D., & Mitchell, A. L. (2004). The role of defensive confidence in preference for proattitudinal information: How believing that one is strong can sometimes be a defensive weakness. *Personality and Social Psychology Bulletin*, *30*, 1565–1584.



- Allport, G. W. (1935). Attitudes. In C. Murchinson (Ed.), *A handbook of social psychology* (pp. 798–844). Worcester, MA: Clark University Press.
- Anderson, J. R. (1983). *The architecture of cognition*. Cambridge, MA: Harvard University Press.
- Anderson, N. H. (1996). *A functional theory of cognition*. Mahwah, NJ: Lawrence Erlbaum Associates.
- 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.
- Armitage, C. J. (2003). Beyond attitudinal ambivalence: Effects of belief homogeneity on attitude-intention-behaviour relations. *European Journal of Social Psychology*, *33*, 551–563.
- Armitage, C. J., & Conner, M. (2000). Attitudinal ambivalence: A test of three key hypotheses. *Personality and Social Psychology Bulletin*, *26*, 1421–1432.
- Baker-Brown, G., Ballard, E. J., Bluck, S., de Vries, B., Suedfeld, P., & Tetlock, P. E. (1992). The conceptual/integrative complexity scoring manual. In C. P. Smith (Ed.), *Motivation and personality: Handbook of thematic content analysis* (pp. 401–418). New York, NY: Cambridge University Press.
- Bargh, J. A., Chaiken, S., Govender, R., & Pratto, F. (1992). The generality of the automatic attitude activation effect. *Journal of Personality and Social Psychology*, *62*, 893–912.
- Bass, A. R., & Rosen, H. (1969). Some potential moderator variables in attitude research. *Educational and Psychological Measurement*, *29*, 331–348.
- Bassili, J. N. (1993). Response latency versus certainty as indexes of the strength of voting intentions in a CATI survey. *Public Opinion Quarterly*, *57*, 54–61.
- Bassili, J. N. (1995). Response latency and the accessibility of voting intentions: What contributes to accessibility and how it affects vote choice. *Personality and Social Psychology Bulletin*, *21*, 686–695.
- Bassili, J. N. (1996). Meta-judgmental versus operative indexes of psychological attributes: The case of measures of attitude strength. *Journal of Personality and Social Psychology*, *71*, 637–653.
- Bassili, J. N., & Krosnick, J. A. (2000). Do strength-related attitude properties determine susceptibility to response effects? New evidence from response latency, attitude extremity, and aggregate indices. *Political Psychology*, *21*, 107–132.
- Bell, D. W., & Esses, V. M. (1997). Ambivalence and response amplification toward native peoples. *Journal of Applied Social Psychology*, *27*, 1063–1084.
- Bem, D. J., (1972). Self-perception theory. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 6, pp. 1–62). San Diego, CA: Academic Press.
- Berger, I. E. (1992). The nature of attitude accessibility and attitude confidence: A triangulated experiment. *Journal of Consumer Psychology*, *1*, 103–123.
- Berger, I. E., & Mitchell, A. A. (1989). The effect of advertising on attitude accessibility, attitude confidence, and the attitude-behavior relationship. *Journal of Consumer Research*, *16*, 269–279.
- Biek, M., Wood, W., & Chaiken, S. (1996). Working knowledge, cognitive processing, and attitudes: On the inevitability of bias. *Personality and Social Psychology Bulletin*, *22*, 547–556.
- Bishop, G. D., Hamilton, D. L., & McConahay, J. B. (1980). Attitudes and non-attitudes in the belief systems of mass publics: A field study. *Journal of Social Psychology*, *110*, 53–64.
- Bizer, G. Y., & Krosnick, J. A. (2001). Exploring the structure of strength-related attitude features: The relation between attitude importance and attitude accessibility. *Journal of Personality and Social Psychology*, *81*, 566–586.
- Bizer, G. Y., Tormala, Z. L., Rucker, D. D., & Petty, R. E. (2006). Memory-based versus on-line processing: Implications for attitude strength. *Journal of Experimental Social Psychology*, *42*, 646–653.
- Blankenship, K. L., & Wegener, D. T. (2008). Opening the mind to close it: Considering a message in light of important values increases message processing and later resistance to change. *Journal of Personality and Social Psychology*, *94*, 196–213.
- Blankenship, K. L., Wegener, D. T., & Murray, R. A. (2012). Circumventing resistance: Using values to indirectly change attitudes. *Journal of Personality and Social Psychology*, *103*, 606–621.
- Blankenship, K. L., Wegener, D. T., & Murray, R. (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.
- Bohner, G., Rank, S., Reinhard, M.-A., Einwiller, S., & Erb, H. P. (1998). Motivational determinants of systematic processing: Expectancy moderates effects of desired confidence on processing effort. *European Journal of Social Psychology*, *28*, 185–206.
- Boninger, D. S., Krosnick, J. A., & Berent, M. K. (1995). Origins of attitude importance: Self-interest, social identification, and value relevance. *Journal of Personality and Social Psychology*, *68*, 61–80.
- Boninger, D. S., Krosnick, J. A., Berent, M. K., & Fabrigar, L. R. (1995). The causes and consequences of attitude importance. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 159–189). Mahwah, NJ: Lawrence Erlbaum Associates.



- Brauer, M., Judd, C. M., & Gliner, M. D. (1995). The effects of repeated expressions on attitude polarization during group discussions. *Journal of Personality and Social Psychology*, *68*, 1014–1029.
- Breckler, S. J. (1984). Empirical validation of affect, behavior, and cognition as distinct components of attitude. *Journal of Personality and Social Psychology*, *47*, 1191–1205.
- Breckler, S. J., & Wiggins, E. C. (1989). Affect versus evaluation in the structure of attitudes. *Journal of Experimental Social Psychology*, *25*, 253–271.
- 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). San Diego, CA: Academic Press.
- 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., & Wheeler, S. C. (2006). Discrepancies between explicit and implicit self-concepts: Consequences for information processing. *Journal of Personality and Social Psychology*, *91*, 154–170.
- Budd, R. J. (1986). Predicting cigarette use: The need to incorporate measures of salience in the theory of reasoned action. *Journal of Applied Social Psychology*, *16*, 663–685.
- Cacioppo, J. T., & Petty, R. E. (1979). 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., & Geen, T. R. (1989). Attitude structure and function: From the tripartite to the homeostasis model of attitudes. In A. R. Pratkanis, S. J. Breckler, & A. G. Greenwald (Eds.), *Attitude structure and function* (pp. 275–309). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Chaiken, S. (1987). The heuristic model of persuasion. In M. P. Zanna, J. M. Olson, & C. P. Herman (Eds.), *Social influence: The Ontario symposium* (Vol. 3, pp. 143–177). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Chaiken, S., & Baldwin, M. W. (1981). Affective-cognitive consistency and the effect of salient behavioral information on the self-perception of attitudes. *Journal of Personality and Social Psychology*, *41*, 1–12.
- Chaiken, S., Liberman, A., & Eagly, A. H. (1989). Heuristic and systematic 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.
- Chaiken, S., & Maheswaran, D. (1994). Heuristic processing can bias systematic processing: Effects of source credibility, argument ambiguity, and task importance on attitude judgment. *Journal of Personality and Social Psychology*, *66*, 460–473.
- Chaiken, S., Pomerantz, E. M., & Giner-Sorolla, R. (1995). Structural consistency and attitude strength. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 387–412). Mahwah, NJ: Lawrence Erlbaum Associates.
- Chaiken, S., & Yates, S. M. (1985). Affective-cognitive consistency and thought-induced attitude polarization. *Journal of Personality and Social Psychology*, *49*, 1470–1481.
- Clark, J. K., & Wegener, D. T. (2013). Message position, information processing, and persuasion: The Discrepancy Motives Model. In P. Devine & A. Plant (Eds.), *Advances in experimental social psychology* (Vol. 47, pp. 189–232). Burlington, UK: Academic Press.
- Clark, J. K., Wegener, D. T., Briñol, P., & Petty, R. E. (2009). Discovering that the shoe fits: The self-validating role of stereotypes. *Psychological Science*, *20*, 846–852.
- Clark, J. K., Wegener, D. T., & Fabrigar, L. R. (2008a). Attitude accessibility and message processing: The moderating role of message position. *Journal of Experimental Social Psychology*, *44*, 354–361.
- Clark, J. K., Wegener, D. T., & Fabrigar, L. R. (2008b). Attitude ambivalence and message-based persuasion: Motivated processing of proattitudinal information and avoidance of counterattitudinal information. *Personality and Social Psychology Bulletin*, *34*, 565–577.
- Conner, M., Sparks, P., Povey, R., James, R., Shepherd, R., & Armitage, C. J. (2002). Moderator effects of attitudinal ambivalence on attitude-behavior relationships. *European Journal of Social Psychology*, *32*, 705–718.
- Converse, P. E. (1964). The nature of belief systems in the mass public. In D. E. Apter (Ed.), *Ideology and discontent* (pp. 201–261). New York, NY: Free Press.
- Costarelli, S., & Colloca, P. (2004). The effects of attitudinal ambivalence on pro-environmental behavioural intentions. *Journal of Environmental Psychology*, *24*, 279–288.
- Costarelli, S., & Colloca, P. (2007). The moderation of ambivalence on attitude-intention relations as mediated by attitude importance. *European Journal of Social Psychology*, *37*, 923–933.
- Costarelli, S., & Palmonari, A. (2003). Ingroup ambivalence and experienced affect: The moderating role of social identification. *European Journal of Social Psychology*, *33*, 813–821.
- Crites, S. L., Jr., Fabrigar, L. R., & Petty, R. E. (1994). Measuring the affective and cognitive properties of attitudes: Conceptual and methodological issues. *Personality and Social Psychology Bulletin*, *20*, 619–634.

- Dahl, D. W., Darke, P. R., Gron, G. J., & Weinberg, C. B. (2005). Promiscuous or confident? Attitudinal ambivalence toward condom purchase. *Journal of Applied Social Psychology, 35*, 869–887.
- Dalege, J., Borsboom, D., van Herreveld, F., van den Berg, H., Conner, M., & van der Maas, H. (2016). Toward a formalized account of attitudes: The causal attitude network (CAN) model. *Psychological Review, 123*, 2–22.
- Davidson, A. R. (1995). From attitudes to actions to attitude change: The effects of amount and accuracy of information. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 315–336). Mahwah, NJ: Lawrence Erlbaum Associates.
- Davidson, A. R., Yantis, S., Norwood, M., & Montano, D. E. (1985). Amount of information about the attitude object and attitude-behavior consistency. *Journal of Personality and Social Psychology, 49*, 1184–1198.
- DeBono, K. G. (1987). Investigating the social-adjustive and value-expressive functions of attitudes: Implications for persuasion processes. *Journal of Personality and Social Psychology, 52*, 279–287.
- DeBono, K. G., & Packer, M. (1991). The effects of advertising appeal on perceptions of product quality. *Personality and Social Psychology Bulletin, 17*, 194–200.
- DeCoster, J., Banner, M. J., Smith, E. R., & Semin, G. R. (2006). On the inexplicability of the implicit: Differences in information provided by implicit and explicit tests. *Social Cognition, 24*, 5–21.
- DeMarree, K., Briñol, P., & Petty, R. E. (2015). Reducing subjective ambivalence by creating doubt: A meta-cognitive approach. *Social Psychological and Personality Science, 6*, 731–739.
- DeMarree, K. G., Petty, R. E., & Strunk, D. R. (2010). Self-esteem accessibility as attitude strength: On the durability and impactfulness of accessible self-esteem. *Personality and Social Psychology Bulletin, 36*, 628–641.
- DeMarree, K. G., Wheeler, S. C., Briñol, P., & Petty, R. E. (2014). Wanting other attitudes: Actual-desired attitude discrepancies predict feelings of ambivalence and ambivalence consequences. *Journal of Experimental Social Psychology, 53*, 5–18.
- Dormandy, E., Hankins, M., & Marteau, T. M. (2006). Attitudes and uptake of a screening test: The moderating role of ambivalence. *Psychology and Health, 21*, 499–511.
- Downing, J. W., Judd, C. M., & Brauer, M. (1992). Effects of repeated expressions on attitude extremity. *Journal of Personality and Social Psychology, 63*, 17–29.
- Eagly, A. H., & Chaiken, S. (1995). Attitude strength, attitude structure, and resistance to change. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 413–432). Mahwah, NJ: Lawrence Erlbaum Associates.
- Eagly, A. H., & Chaiken, S. (1998). Attitude structure and function. In D. Gilbert, S. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology* (4th ed., pp. 269–322). New York, NY: McGraw-Hill.
- Eagly, A. H., Mladinic, A., & Otto, S. (1994). Cognitive and affective bases of attitudes toward social groups and social policies. *Journal of Experimental Social Psychology, 30*, 113–137.
- 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.
- Edwards, K. (1990). The interplay of affect and cognition in attitude formation and change. *Journal of Personality and Social Psychology, 59*, 202–216.
- Edwards, K., & Smith, E. E. (1996). A disconfirmation bias in the evaluation of arguments. *Journal of Personality and Social Psychology, 71*, 5–24.
- Edwards, K., & von Hippel, W. (1995). Hearts and minds: The priority of affective versus cognitive factors in person perception. *Personality and Social Psychology Bulletin, 21*, 996–1011.
- Eiser, J. R., Fazio, R. H., Stafford, T., & Prescott, T. J. (2003). Connectionist simulation of attitude learning: Asymmetries in the acquisition of positive and negative evaluations. *Personality and Social Psychology Bulletin, 29*, 1221–1235.
- Eiser, J. R., Stafford, T., & Fazio, R. H. (2008). Expectancy confirmation in attitude learning: A connectionist account. *European Journal of Social Psychology, 38*, 1023–1032.
- Eiser, J. R., Stafford, T., & Fazio, R. H. (2009). Prejudiced learning: A connectionist account. *British Journal of Social Psychology, 100*, 399–413.
- Ennis, R., & Zanna, M. P. (2000). Attitude function and the automobile. In G. R. Maio & J. M. Olson (Eds.), *Why we evaluate: Functions of attitudes* (pp. 395–415). Mahwah, NJ: Lawrence Erlbaum Associates.
- Erber, M. W., Hodges, S. D., & Wilson, T. D. (1995). Attitude strength, attitude stability, and the effects of analyzing reasons. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 433–454). Mahwah, NJ: Lawrence Erlbaum Associates.
- Evans, A. T., & Clark, J. K. (2012). Source characteristics and persuasion: The role of self-monitoring in self-validation. *Journal of Experimental Social Psychology, 48*(1), 383–386.

- Fabrigar, L. R., MacDonald, T. K., & Wegener, D. T. (2005). The structure of attitudes. In D. Albarracín, B. T. Johnson, & M. P. Zanna (Eds.), *Handbook of attitudes and attitude change* (pp. 79–124). Mahwah, NJ: Lawrence Erlbaum Associates.
- 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., Petty, R. E., Smith, S. M., & Crites, S. L., Jr. (2006). Understanding knowledge effects on attitude-behavior consistency: The role of relevance, complexity, and amount of knowledge. *Journal of Personality and Social Psychology*, *90*, 556–577.
- Fabrigar, L. R., Priester, J. R., Petty, R. E., & Wegener, D. T. (1998). The impact of attitude accessibility on elaboration of persuasive messages. *Personality and Social Psychology Bulletin*, *24*, 339–352.
- Fabrigar, L. R., Petty, R. E., Smith, S. M., Wood, J. K., & MacDonald, T. K. (2017). *Exploring the impact of complexity, ambivalence, and goal relevance of knowledge on attitude-behavior consistency*. Manuscript in preparation.
- Fabrigar, L. R., & Wegener, D. T. (2010). Attitude structure. In R. F. Baumeister & E. J. Finkel (Eds.), *Advanced social psychology* (pp. 177–216). New York, NY: Oxford University Press.
- Fabrigar, L. R., & Wegener, D. T. (2012). *Exploratory factor analysis*. New York, NY: Oxford University Press.
- Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, *4*, 272–299.
- Fabrigar, L. R., Wegener, D. T., & MacDonald, T. K. (2010). Distinguishing between prediction and influence: Multiple processes underlying attitude-behavior consistency. In C. R. Agnew, D. E. Carlston, W. G. Graziano, & J. R. Kelly (Eds.), *Then a miracle occurs: Focusing on behavior in social psychological theory and research* (pp. 162–185). New York, NY: Oxford University Press.
- Fazio, R. H. (1990). Multiple processes by which attitudes guide behavior: The MODE model as an integrative framework. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 23, pp. 75–109). San Diego, CA: Academic Press.
- Fazio, R. H. (1995). Attitudes as object-evaluation associations: Determinants, consequences, and correlates of attitude accessibility. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 247–282). Mahwah, NJ: Lawrence Erlbaum Associates.
- Fazio, R. H. (2007). Attitudes as object-evaluation associations of varying strength. *Social Cognition*, *25*, 603–637.
- Fazio, R. H., Chen, J., McDonel, E. C., & Sherman, S. J. (1982). Attitude accessibility, attitude-behavior consistency, and the strength of the object-evaluation association. *Journal of Experimental Social Psychology*, *18*, 339–357.
- Fazio, R. H., & Dunton, B. C. (1997). Categorization by race: The impact of automatic and controlled components of racial prejudice. *Journal of Experimental Social Psychology*, *33*, 451–470.
- 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 bone fide pipeline? *Journal of Personality and Social Psychology*, *69*, 1013–1027.
- Fazio, R. H., Ledbetter, J. E., & Towles-Schwen, T. (2000). On the costs of accessible attitudes: Detecting that the attitude object has changed. *Journal of Personality and Social Psychology*, *78*, 197–210.
- Fazio, R. H., & Olson, M. A. (2003). Attitudes: Foundations, functions, and consequences. In M. A. Hogg & J. Cooper (Eds.), *The SAGE handbook of social psychology* (pp. 139–160). Thousand Oaks, CA: Sage.
- Fazio, R. H., & Olson, M. A. (2014). The MODE Model: Attitude-behavior processes as a function of motivation and opportunity. In J. W. Sherman, B. Gawronski, & Y. Tope (Eds.), *Dual-process theories of the social mind* (pp. 155–171). New York, NY: Guilford Press.
- Fazio, R. H., & Powell, M. C. (1994). *Attitude expression, extremity, and accessibility*. Unpublished manuscript, Indiana University, Bloomington.
- Fazio, R. H., Powell, M. C., & Williams, C. J. (1989). The role of attitude accessibility in the attitude-to-behavior process. *Journal of Consumer Research*, *16*, 280–288.
- Fazio, R. H., & Roskos-Ewoldsen, D. R. (2005). Acting as we feel: When and how attitudes guide behavior. In T. C. Brock & M. C. Green (Eds.), *Persuasion: Psychological insights and perspectives* (pp. 41–62). Thousand Oaks, CA: Sage.
- 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., & Williams, C. J. (1986). Attitude accessibility as a moderator of the attitude-perception and attitude-behavior relations: An investigation of the 1984 presidential election. *Journal of Personality and Social Psychology*, *51*, 505–514.
- Fazio, R. H., & Zanna, M. P. (1978). Attitudinal qualities relating to the strength of the attitude-behavior relationship. *Journal of Experimental Social Psychology*, *14*, 398–408.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, *7*, 117–140.

- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.
- Fine, B. J. (1957). Conclusion-drawing, communicator credibility, and anxiety as factors in opinion change. *Journal of Abnormal and Social Psychology*, 54, 369–374.
- Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.
- Franc, R. (1999). Attitude strength and the attitude-behavior domain: Magnitude and independence of moderating effects of different strength indices. *Journal of Social Behavior and Personality*, 13, 177–195.
- Gebauer, J. E., Maio, G. R., & Pakizeh, A. (2013). Feeling torn when everything seems right: Semantic incongruence causes felt ambivalence. *Personality and Social Psychology Bulletin*, 39, 777–791.
- Giner-Sorolla, R. (2001). Affective attitudes are not always faster: The moderating role of extremity. *Personality and Social Psychology Bulletin*, 27, 666–677.
- Glasman, L. R., & Albarracín, D. (2006). Forming attitudes that predict future behavior: A meta-analysis of the attitude-behavior relation. *Psychological Bulletin*, 132, 778–822.
- Gorn, G. J. (1975). The effects of personal involvement, communication discrepancy, and source prestige on reactions to communications on separatism. *Canadian Journal of Behavioural Science*, 7, 369–386.
- Grant, M. J., Button, C. M., & Noseworthy, J. (1994). Predicting attitude stability. *Canadian Journal of Behavioural Science*, 26, 68–84.
- Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology*, 74, 1464–1480.
- Greenwald, A. G., & Nosek, B. A. (2009). Attitudinal dissociation: What does it mean? In R. E. Petty, R. H. Fazio, & P. Briñol (Eds.), *Attitudes: Insights from the new implicit measures* (pp. 65–82). New York, NY: Psychology Press.
- Gross, S. R., Holtz, R., & Miller, N. (1995). Attitude certainty. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 215–245). Mahwah, NJ: Lawrence Erlbaum Associates.
- Haddock, G., Maio, G. R., Arnold, K., & Huskinson, T. (2008). Should persuasion be affective or cognitive? The moderating effects of need for affect and need for cognition. *Personality and Social Psychology Bulletin*, 34, 769–778.
- Heider, F. (1958). *The psychology of interpersonal relations*. New York, NY: Wiley.
- Herek, G. M. (1987). Can functions be measured? A new perspective on the functional approach to attitudes. *Social Psychology Quarterly*, 50, 285–303.
- Holbrook, A. L., Berent, M. K., Krosnick, J. A., Visser, P. S., & Boninger, D. K. (2005). Attitude importance and the accumulation of attitude-relevant knowledge in memory. *Journal of Personality and Social Psychology*, 88, 749–769.
- Holbrook, A. L., & Krosnick, J. A. (2010). Operative and meta-psychological manifestations of attitude accessibility: Two different constructs, not two measures of the same construct. In J. P. Forgas, J. Cooper, & W. Crano (Eds.), *The psychology of attitudes and attitude change* (pp. 109–124). Florence, KY: Psychology Press.
- Holland, R. W., Verplanken, & van Knippenberg, A. (2003). From repetition to conviction: Attitude accessibility as a determinant of attitude certainty. *Journal of Experimental Social Psychology*, 39, 594–601.
- Houston, D. A., & Fazio, R. H. (1989). Biased processing as a function of attitude accessibility: Making objective judgments subjectively. *Social Cognition*, 7, 51–66.
- Jonas, K., Diehl, M., & Bromer, P. (1997). Effects of attitudinal ambivalence on information processing and attitude-intention consistency. *Journal of Experimental Social Psychology*, 33, 190–210.
- Judd, C. M., & Brauer, M. (1995). Repetition and evaluative extremity. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 43–71). Mahwah, NJ: Lawrence Erlbaum Associates.
- Judd, C. M., & Downing, J. W. (1990). Political expertise and the development of attitude consistency. *Social Cognition*, 8, 104–124.
- Judd, C. M., Drake, R. A., Downing, J. W., & Krosnick, J. A. (1991). Some dynamic properties of attitude structures: Context-induced response facilitation and polarization. *Journal of Personality and Social Psychology*, 60, 193–202.
- Judd, C. M., & Krosnick, J. A. (1982). Attitude centrality, organization, and measurement. *Journal of Personality and Social Psychology*, 42, 436–447.
- Judd, C. M., & Krosnick, J. A. (1989). The structural bases of consistency among political attitudes: Effects of political expertise and attitude importance. In A. R. Pratkanis, S. J. Breckler, & A. G. Greenwald (Eds.), *Attitude structure and function* (pp. 99–128). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Judd, C. M., Krosnick, J. A., & Milburn, M. A. (1981). Political involvement and attitude structure in the general public. *American Sociological Review*, 45, 627–643.
- Judd, C. M., & Lusk, C. M. (1984). Knowledge structures and evaluative judgments: Effects of structural variables on judgmental extremity. *Journal of Personality and Social Psychology*, 46, 1193–1207.



- Judd, C. M., & Milburn, M. A. (1980). The structure of attitude systems in the general public: Comparison of a structural equation model. *American Sociological Review*, *45*, 627–643.
- Kallgren, C. A., & Wood, W. (1986). Access to attitude-relevant information in memory as a determinant of attitude-behavior consistency. *Journal of Experimental Social Psychology*, *22*, 328–338.
- Kaplan, K. J. (1972). On the ambivalence-indifference problem in attitude theory and measurement: A suggested modification of the semantic differential technique. *Psychological Bulletin*, *77*, 361–372.
- Katz, D., & Stotland, E. (1959). A preliminary statement to a theory of attitude structure and change. In S. Koch (Ed.), *Psychology: A study of a science: Vol. 3 Formulations of the person and the social context* (pp. 423–475). New York, NY: McGraw-Hill.
- Kokkinaki, F. (1998). Attitudes toward European monetary union in Greece: Antecedents, strength, and consequences. *Journal of Economic Psychology*, *19*, 775–796.
- Kokkinaki, F., & Lunt, P. (1997). The relationship between involvement, attitude accessibility, and attitude-behaviour consistency. *British Journal of Social Psychology*, *36*, 497–509.
- Krosnick, J. A. (1988a). The role of attitude importance in social evaluation: A study of policy preferences, presidential candidate evaluations, and voting behavior. *Journal of Personality and Social Psychology*, *55*, 196–210.
- Krosnick, J. A. (1988b). Attitude importance and attitude change. *Journal of Experimental Social Psychology*, *24*, 240–255.
- Krosnick, J. A. (1989). Attitude importance and attitude accessibility. *Personality and Social Psychology Bulletin*, *15*, 297–308.
- Krosnick, J. A., Boninger, D. S., Chuang, Y. C., Berent, M. K., & Carnot, C. G. (1993). Attitude strength: One construct or many related constructs? *Journal of Personality and Social Psychology*, *65*, 1132–1151.
- Krosnick, J. A., & Fabrigar, L. R. (1997). Designing rating scales for effective measurement in surveys. In L. Lyberg, P. Biemer, M. Collins, L. Decker, E. de Leeuw, C. Dippo, N. Schwarz, & D. Trewin (Eds.), *Survey measurement and process quality* (pp. 141–164). New York, NY: Wiley-Interscience.
- Lavine, H., Huff, J. W., Wagner, S. H., & Sweeney, D. (1998). The moderating influence of attitude strength on the susceptibility to context effects in attitude surveys. *Journal of Personality and Social Psychology*, *75*, 359–373.
- Lavine, H., & Snyder, M. (1996). Cognitive processing and the functional matching effect in persuasion: The mediating role of subjective perceptions of message quality. *Journal of Experimental Social Psychology*, *32*, 580–604.
- Lavine, H., & Snyder, M. (2000). Cognitive processes and the functional matching effect in persuasion: Studies of personality and political behavior. In G. R. Maio & J. M. Olson (Eds.), *Why we evaluate: Functions of attitudes* (pp. 97–131). Mahwah, NJ: Lawrence Erlbaum Associates.
- Lavine, H., Sullivan, J. L., Borgida, E., & Thomsen, C. J. (1996). The relationship of national and personal issue salience to attitude accessibility on foreign and domestic policy issues. *Political Psychology*, *17*, 293–316.
- Lavine, H., Thomsen, C. J., & Gonzales, M. H. (1997). The development of inter-attitudinal consistency: The shared-consequences model. *Journal of Personality and Social Psychology*, *72*, 735–749.
- Lewan, P. C., & Stotland, E. (1961). The effects of prior information on susceptibility to an emotional appeal. *Journal of Abnormal and Social Psychology*, *62*, 450–453.
- Likert, R. (1932). A technique for the measurement of attitudes. *Archive of Psychology*, *140*, 44–53.
- Linville, P. W. (1982). The complexity-extremity effect and age-based stereotyping. *Journal of Personality and Social Psychology*, *42*, 193–211.
- Linville, P. W., & Jones, E. E. (1980). Polarized appraisals of out-group members. *Journal of Personality and Social Psychology*, *38*, 689–703.
- Lipkus, I. M., Green, J. D., Feaganes, J. R., & Sedikides, C. (2001). The relationship between attitudinal ambivalence and desire to quit among college smokers. *Journal of Applied Social Psychology*, *31*, 113–133.
- Lord, C. G., Ross, L., & Lepper, M. R. (1979). Biased assimilation and attitude polarization: The effects of prior theories on subsequently considered evidence. *Journal of Personality and Social Psychology*, *37*, 2098–2109.
- MacDonald, T. K., & Zanna, M. P. (1998). Cross-dimension ambivalence toward social groups: Can ambivalence affect intentions to hire feminists? *Personality and Social Psychology Bulletin*, *24*, 427–441.
- Maheswaran, D., & Chaiken, S. (1991). Promoting systematic processing in low-motivation settings—Effect of incongruent information on processing and judgment. *Journal of Personality and Social Psychology*, *61*, 13–25.
- Maio, G. R., Bell, D. W., & Esses, V. M. (1996). Ambivalence and persuasion: The processing of messages about immigrant groups. *Journal of Experimental Social Psychology*, *32*, 513–536.
- Maio, G. R., Esses, V. M., & Bell, D. W. (2000). Examining conflict between components of attitude: Ambivalence and inconsistency are distinct constructs. *Canadian Journal of Behavioral Science*, *32*, 71–83.

- Maio, G. R., & Olson, J. M. (1995). The relations between values, attitudes, and behavioral intentions: The moderating role of attitude function. *Journal of Experimental Social Psychology, 31*, 266–285.
- Maio, G. R., & Olson, J. M. (Eds.). (2000). *Why we evaluate: Functions of attitudes*. Mahwah, NJ: Lawrence Erlbaum Associates.
- McConnell, A. R., Rydell, R. J., Strain, L. M., & Mackie, D. M. (2008). Forming implicit and explicit attitudes toward individuals: Social group association cues. *Journal of Personality and Social Psychology, 94*, 792–807.
- McGuire, W. J. (1989). The structure of individual attitudes and attitude systems. In A. R. Pratkanis, S. J., Breckler, & A. G. Greenwald (Eds.), *Attitude structure and function* (pp. 37–69). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Millar, M. G., & Millar, K. U. (1990). Attitude change as a function of attitude type and argument type. *Journal of Personality and Social Psychology, 59*, 217–228.
- Millar, M., & Tesser, A. (1986a). Thought induced attitude change: The effects of schema structure and commitment. *Journal of Personality and Social Psychology, 51*, 259–269.
- Millar, M., & Tesser, A. (1986b). Effects of affective and cognitive focus on the attitude-behavior relationship. *Journal of Personality and Social Psychology, 51*, 270–276.
- Millar, M., & Tesser, A. (1989). The effects of affective-cognitive consistency and thought on the attitude-behavior relation. *Journal of Experimental Social Psychology, 25*, 189–202.
- Moore, M. (1973). Ambivalence in attitude measurement. *Educational and Psychological Measurement, 33*, 481–483.
- Murray, S. L., Haddock, G., & Zanna, M. P. (1996). On creating value-expressive attitudes: An experimental approach. In C. Seligman, J. M. Olson, & M. P. Zanna (Eds.), *The psychology of values* (Ontario Symposium Vol. 8, pp. 107–134). Mahwah, NJ: Lawrence Erlbaum Associates.
- Newby-Clark, I. R., McGregor, I., & Zanna, M. P. (2002). Thinking and caring about cognitive inconsistency: When and for whom does attitudinal ambivalence feel uncomfortable? *Journal of Personality and Social Psychology, 82*, 157–166.
- Nordgren, L. F., van Harreveld, F., & van der Pligt, J. (2006). Ambivalence, discomfort, and motivated information processing. *Journal of Experimental Social Psychology, 42*, 252–258.
- Norman, R. (1975). Affective-cognitive consistency, attitudes, conformity, and behavior. *Journal of Personality and Social Psychology, 32*, 83–91.
- Norris, M. E., Fabrigar, L. R., Petty, R. E., Wegener, D. T., Dymond, J., & Calnan, C. M. (2017). *Real or artifact? Exploring when and how repeated expression leads to polarization*. Manuscript in preparation.
- Olson, M. A., Kendrick, R. V., & Fazio, R. H. (2009). Implicit learning of evaluative vs. non-evaluative covariations: The role of dimension accessibility. *Journal of Experimental Social Psychology, 45*, 398–403.
- Osgood, C. E., Suci, G. J., & Tannenbaum, P. (1957). *The measurement of meaning*. Urbana, IL: University of Illinois Press.
- Ostrom, T. M. (1969). The relationship between the affective, behavioral, and cognitive components of attitude. *Journal of Experimental Social Psychology, 5*, 12–30.
- Petrocelli, J. V., Tormala, Z. L., & Rucker, D. D. (2007). Unpacking attitude certainty: Attitude clarity and attitude correctness. *Journal of Personality and Social Psychology, 92*, 30–41.
- 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. (2010). Attitude change. In R. F. Baumeister & E. J. Finkel (Eds.), *Advanced social psychology* (pp. 217–259). New York, NY: Oxford University Press.
- Petty, R. E., & Briñol, P. (2014). The Elaboration Likelihood and Metacognitive Models of attitudes: Implications for prejudice, the self, and beyond. In J. W. Sherman, B. Gawronski, & Y. Tope (Eds.), *Dual-process theories of the social mind* (pp. 172–187). New York, NY: Guilford Press.
- Petty, R. E., Briñol, P., & DeMaree, K. G. (2007). The Meta-Cognitive Model (MCM) of attitudes. *Social Cognition, 25*, 657–686.
- Petty, R. E., & Cacioppo, J. T. (1981). *Attitudes and persuasion: Classic and contemporary approaches*. Dubuque, IA: Wm. C. Brown.
- 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., & Cacioppo, J. T. (1990). Involvement and persuasion: Tradition versus integration. *Psychological Bulletin, 107*, 367–374.
- Petty, R. E., & Krosnick, J. A. (Eds.). (1995). *Attitude strength: Antecedents and consequences*. Mahwah, NJ: Lawrence Erlbaum Associates.

- Petty, R. E., Tormala, Z. L., & Rucker, D. (2003). An attitude strength perspective on resistance to persuasion. In M. R. Banaji, J. T. Jost, & D. Prentice (Eds.), *The yin and yang of social cognition: Festschrift for William McGuire*. Washington, DC: American Psychological Association.
- 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. (1998a). Attitude change: Multiple roles for persuasion variables. In D. Gilbert, S. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (4th ed., pp. 323–390). New York, NY: McGraw-Hill.
- Petty, R. E., & Wegener, D. T. (1998b). Matching versus mismatching attitude functions: Implications for scrutiny of persuasive messages. *Personality and Social Psychology Bulletin, 24*, 227–240.
- Petty, R. E., & Wegener, D. T. (1999). The Elaboration Likelihood Model: Current status and controversies. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 41–72). New York, NY: Guilford Press.
- Petty, R. E., Wheeler, S. C., & Bizer, G. Y. (2000). Attitude functions and persuasion: An Elaboration Likelihood approach to matched versus mismatched messages. In G. R. Maio & J. M. Olson (Eds.), *Why we evaluate: Functions of attitudes* (pp. 133–162). Mahwah, NJ: Lawrence Erlbaum Associates.
- Pomerantz, E. M., Chaiken, S., & Tordesillas, R. S. (1995). Attitude strength and resistance processes. *Journal of Personality and Social Psychology, 69*, 408–419.
- Posavac, S. S., Sanbonmatsu, D. M., & Fazio, R. H. (1997). Considering the best choice: Effects of the salience and accessibility of alternatives on attitude–decision consistency. *Journal of Personality and Social Psychology, 72*, 253–261.
- Powell, M. C., & Fazio, R. H. (1984). Attitude accessibility as a function of repeated attitudinal expression. *Personality and Social Psychology Bulletin, 10*, 139–148.
- Priester, J. R. (2002). Sex, drugs, and attitudinal ambivalence: How feelings of evaluative tension influence alcohol use and safe sex behaviors. In W. D. Crano & M. Burgoon (Eds.), *Mass media and drug prevention: Classic and contemporary theories and research* (pp. 145–162). Mahwah, NJ: Lawrence Erlbaum Associates.
- Priester, J. R., Nayakankuppum, D., Fleming, M. A., & Godek, J. (2004). The A<sup>2</sup>SC<sup>2</sup> Model: The influence of attitudes and attitude strength on consideration and choice. *Journal of Consumer Research, 30*, 574–587.
- Priester, J. R., & Petty, R. E. (1996). The gradual threshold model of ambivalence: Relating the positive and negative bases of attitudes to subjective ambivalence. *Journal of Personality and Social Psychology, 71*, 431–449.
- Priester, J. R., & Petty, R. E. (2001). Extending the bases of subjective attitudinal ambivalence: Interpersonal and intrapersonal antecedents of evaluative tension. *Journal of Personality and Social Psychology, 80*, 19–34.
- Priester, J. R., Petty, R. E., & Park, K. (2007). Whence univalent ambivalence? From anticipation of conflict–ing reactions. *Journal of Consumer Research, 34*, 11–21.
- Prislin, R. (1996). Attitude stability and attitude strength: One is enough to make it stable. *European Journal of Social Psychology, 26*, 447–477.
- Reffing, E. J., Calnan, C. M., Fabrigar, L. R., MacDonald, T. K., Johnson, V. C., & Smith, S. M. (2013). To partition or to not partition evaluative judgments: Comparing measures of structural ambivalence. *Social Psychological and Personality Science, 4*, 387–394.
- Roose, N. J., & Olson, J. M. (1994). Attitude importance as a function of repeated attitude expression. *Journal of Experimental Social Psychology, 30*, 39–51.
- Rokeach, M., & Kliejunas, P. (1972). Behavior as a function of attitude–toward-object and attitude–toward-situation. *Journal of Personality and Social Psychology, 22*, 194–201.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Rosenberg, M. J., & Abelson, R. P. (1960). An analysis of cognitive balancing. In C. I. Hovland & M. J. Rosenberg (Eds.), *Attitude organization and change: An analysis of consistency among components* (pp. 112–163). New Haven, CT: Yale University Press.
- Rosenberg, M. J., & Hovland, C. I. (1960). Cognitive, affective, and behavioral components of attitudes. In M. Rosenberg, C. Hovland, W. McGuire, R. Abelson, & J. Brehm (Eds.), *Attitude organization and change* (pp. 1–14). New Haven, CT: Yale University Press.
- Rosenberg, M. J., Hovland, C., McGuire, W. J., Abelson, R. P., & J. Brehm (Eds.). (1960). *Attitude organization and change* (pp. 1–14). New Haven, CT: Yale University Press.
- Roskos-Ewoldsen, D. R., & Fazio, R. H. (1992). On the orienting value of attitudes: Attitude accessibility as a determinant of an object’s attraction of visual attention. *Journal of Personality and Social Psychology, 63*, 198–211.
- Rucker, D. D., & Petty, R. E. (2004). When resistance is futile: Consequences of failed counterarguing 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 of attitude certainty. *Journal of Consumer Psychology, 24*, 119–136.



- Rydell, R. J., McConnell, A. R., & Mackie, D. M. (2008). Consequences of discrepant explicit and implicit attitudes: Cognitive dissonance and increased information processing. *Journal of Experimental Social Psychology, 44*, 1526–1532.
- Rydell, R. J., McConnell, A. R., Mackie, D. M., & Strain, L. M. (2006). Of two minds: Forming and changing valence-inconsistent implicit and explicit attitudes. *Psychological Science, 17*, 954–958.
- Sample, J., & Ward, R. (1973). Attitude and prediction of behavior. *Social Forces, 51*, 292–304.
- Sanbonmatsu, D. M., & Fazio, R. H. (1990). The role of attitudes in memory-based decision making. *Journal of Personality and Social Psychology, 59*, 614–622.
- Sanbonmatsu, D. M., Kardes, F. R., Posavac, S. S., & Houghton, D. C. (1997). Contextual influences on judgments based on limited information. *Organizational Behavior and Human Decision Processes, 69*, 251–264.
- Sawicki, V., Wegener, D. T., Clark, J. K., Fabrigar, L. R., Smith, S. M., & Bengal, S. T. (2011). Seeking confirmation in times of doubt: Selective exposure and the motivational strength of weak attitudes. *Social Psychological and Personality Science, 2*, 540–546.
- Sawicki, V., Wegener, D. T., Clark, J. K., Fabrigar, L. R., Smith, S. M., & Durso, G. R. O. (2013). Feeling conflicted and seeking information: When ambivalence enhances and diminishes selective exposure to attitude-consistent information. *Personality and Social Psychology Bulletin, 39*, 735–747.
- Schuetter, R. A., & Fazio, R. H. (1995). Attitude accessibility and motivation as determinants of biased processing: A test of the MODE model. *Personality and Social Psychology Bulletin, 21*, 704–710.
- Schuman, H., & Presser, S. (1981). *Questions and answers: Experiments on question form, wording and context in attitude surveys*. New York, NY: Academic Press.
- Schwarz, N., & Bohner, G. (2001). The construction of attitudes. In A. Tesser & N. Schwarz (Eds.), *Blackwell handbook of social psychology: Intraindividual processes* (pp. 436–457). Malden, MA: Blackwell.
- Scott, W. A. (1969). Structure of natural cognitions. *Journal of Personality and Social Psychology, 12*, 261–278.
- See, Y. H. M., Petty, R. E., & Fabrigar, L. R. (2008). Affective and cognitive meta-bases of attitudes: Unique effects on information interest and persuasion. *Journal of Personality and Social Psychology, 94*, 938–955.
- See, Y. H. M., Petty, R. E., & Fabrigar, L. R. (2013). Affective-cognitive meta-bases versus structural bases of attitudes predict processing interest versus efficiency. *Personality and Social Psychology Bulletin, 39*, 1111–1123.
- Sengupta, J., & Johar, G. V. (2002). Effects of inconsistent attribute information on the predictive value of product attitudes: Toward a resolution of opposing perspectives. *Journal of Consumer Research, 29*, 39–56.
- Shavitt, S. (1989). Operationalizing functional theories of attitude. In A. R. Pratkanis, S. J. Breckler, & A. G. Greenwald (Eds.), *Attitude structure and function* (pp. 311–338). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Shavitt, S. (1990). The role of attitude objects in attitude functions. *Journal of Experimental Social Psychology, 26*, 124–148.
- 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.
- Smith, E. R., & DeCoster, J. (1998). Knowledge acquisition, accessibility, and use in person perception and stereotyping: Simulation with a recurrent connectionist network. *Journal of Personality and Social Psychology, 74*, 21–35.
- Smith, E. R., Fazio, R. H., & Cejka, M. A. (1996). Accessible attitudes influence categorization of multiply categorizable objects. *Journal of Personality and Social Psychology, 71*, 888–898.
- Smith, M. B. (1947). The personal setting of public opinions: A study of attitudes toward Russia. *Public Opinion Quarterly, 11*, 507–523.
- Smith, M. B., Bruner, J. S., & White, R. W. (1956). *Opinions and personality*. New York, NY: Wiley.
- Smith, S. M., Fabrigar, L. R., MacDougall, B. L., & Wiesenhal, 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., & DeBono, K. G. (1985). Appeals to images and claims about quality: Understanding the psychology of advertising. *Journal of Personality and Social Psychology, 49*, 586–597.
- Snyder, M., & DeBono, K. G. (1989). Understanding the functions of attitudes: Lessons from personality and social behavior. In A. R. Pratkanis, S. J. Breckler, & A. G. Greenwald (Eds.), *Attitude structure and function* (pp. 339–359). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Starzyk, K. B., Fabrigar, L. R., Soryal, A. S., & Fanning, J. J. (2009). A painful reminder: The role of level and salience of attitude importance in cognitive dissonance. *Personality and Social Psychology Bulletin, 35*, 126–137.
- Tesser, A., & Leone, C. (1977). Cognitive schemas and thought as determinants of attitude change. *Journal of Experimental Social Psychology, 13*, 340–356.

- Tesser, A., Martin, L., & Mendolia, M. (1995). The impact of thought on attitude extremity and attitude-behavior consistency. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 73–92). Mahwah, NJ: Lawrence Erlbaum Associates.
- Terry, D., & Hogg, M. (1996). Group norms and the attitude-behavior relationship: A role for group identification. *Personality and Social Psychology Bulletin*, 22, 776–793.
- Tetlock, P. E. (1983). Accountability and complexity of thought. *Journal of Personality and Social Psychology*, 45, 74–83.
- Tetlock, P. E. (1989). Structure and function in political belief systems. In A. R. Pratkanis, S. J. Breckler, & A. G. Greenwald (Eds.), *Attitude structure and function* (pp. 129–151). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Tetlock, P. E., & Kim, J. I. (1987). Accountability and judgment processes in a personality prediction task. *Journal of Personality and Social Psychology*, 52, 700–709.
- Thompson, M. M., Zanna, M. P., & Griffin, D. W. (1995). Let's not be indifferent about attitudinal ambivalence. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 361–386). Mahwah, NJ: Lawrence Erlbaum Associates.
- Thurstone, L. L. (1928). Attitudes can be measured. *American Journal of Sociology*, 33, 529–554.
- Tormala, Z. L., Briñol, P., & Petty, R. E. (2007). Multiple roles for source credibility under high elaboration: It's all in the timing. *Social Cognition*, 25(4), 536–552.
- Tormala, Z. L., & DeSensi, V. L. (2008). The perceived informational basis of attitudes: Implications for subjective ambivalence. *Personality and Social Psychology Bulletin*, 34, 275–287.
- Tormala, Z. L., & Petty, R. E. (2002). What doesn't kill me makes me stronger: The effects of resisting persuasion on attitude certainty. *Journal of Personality and Social Psychology*, 83, 1298–1313.
- Tormala, Z. L., & Rucker, D. D. (2007). Attitude certainty: A review of past findings and emerging perspectives. *Social and Personality Psychology Compass*, 1, 469–492.
- Tormala, Z. L., Rucker, D. D., & Seger, C. R. (2008). When increased confidence yields increased thought: A confidence-matching hypothesis. *Journal of Experimental Social Psychology*, 44, 141–147.
- Tourangeau, R., Rasinski, K. A., Bradburn, N., & D'Andrade, R. (1989). Belief accessibility and context effects in attitude measurement. *Journal of Experimental Social Psychology*, 25, 401–421.
- Tourangeau, R., Rasinski, K. A., & D'Andrade, R. (1991). Attitude structure and belief accessibility. *Journal of Experimental Social Psychology*, 27, 48–75.
- van Harreveld, F., Nohlen, & Schneider, I. K. (2015). The ABC of ambivalence: Affective, behavioral and cognitive consequences of attitudinal conflict. In M. P. Zanna & J. M. Olson (Eds.), *Advances in experimental social psychology* (Vol. 52, pp. 285–324). San Diego, CA: Academic Press.
- van Harreveld, F., van der Pligt, J., & de Liver, Y. N. (2009). The agony of ambivalence and the ways to resolve it: Introducing the MAID model. *Personality and Social Psychology Review*, 13, 45–61.
- Visser, P. S., Bizer, G. Y., & Krosnick, J. A. (2006). Exploring the latent structure of strength-related attitude attributes. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 38, pp. 1–67). San Diego, CA: Academic Press.
- Wallace, L. E., Patton, K. M., Luttrell, A., Sawicki, V., Fabrigar, L. R., Teeny, J. T., . . . Wegener, D. T. (2017). *Ambivalence attenuates the relation between knowledge and attitude-behavior consistency*. Manuscript under review.
- Wegener, D. T., Kelly, J. R., Wallace, L. E., & Sawicki, V. (2014). Public opinions of biofuels: Attitude strength and willingness to use biofuels. *Biofuels*, 5(3), 249–259.
- Wegener, D. T., & Petty, R. E. (1997). The flexible correction model: The role of naive theories of bias in bias correction. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 29, pp. 141–208). San Diego, CA: Academic Press.
- Wegener, D. T., Petty, R. E., Smoak, N. D., & Fabrigar, L. R. (2004). Multiple routes to resisting attitude change. In E. S. Knowles & J. A. Linn (Eds.), *Resistance and persuasion* (pp. 13–38). Mahwah, NJ: Lawrence Erlbaum Associates.
- 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: Lawrence Erlbaum Associates.
- Wilson, T. D., Kraft, D., & Dunn, D. S. (1989). The disruptive effects of explaining attitudes: The moderating effect of knowledge about the attitude object. *Journal of Experimental Social Psychology*, 25, 379–400.
- Wilson, T. D., Lindsey, S., & Schooler, T. Y. (2000). A model of dual attitudes. *Psychological Review*, 107, 101–126.
- Wood, W. (1982). The retrieval of attitude-relevant information from memory: Effects on susceptibility to persuasion and on intrinsic motivation. *Journal of Personality and Social Psychology*, 42, 798–810.

- Wood, W., & Kallgren, C. A. (1988). Communicator attributes and persuasion: Attitude-relevant information in memory. *Personality and Social Psychology Bulletin*, *14*, 172–182.
- Wood, W., Kallgren, C. A., & Preisler, R. M. (1985). Access to attitude-relevant information in memory as a determinant of persuasion: The role of message attributes. *Journal of Experimental Social Psychology*, *21*, 73–85.
- Wood, W., Rhodes, N., & Biek, M. (1995). Working knowledge and attitude strength: An information-processing analysis. In R. E. Petty & J. A. Krosnick (Eds.), *Attitude strength: Antecedents and consequences* (pp. 283–313). Mahwah, NJ: Lawrence Erlbaum Associates.
- Wright, J. C., Cullum, J., & Schwab, N. (2008). The cognitive and affective dimensions of moral conviction: Implications for attitudinal and behavioral measures of interpersonal tolerance. *Personality and Social Psychology Bulletin*, *34*, 1461–1476.
- Zanna, M. P., & Rempel, J. K. (1988). Attitudes: A new look at an old concept. In D. Bar-Tal & A. W. Kruglanski (Eds.), *The social psychology of knowledge* (pp. 315–334). Cambridge, UK: Cambridge University Press.
- Ziegler, R., Hagen, B., & Diehl, M. (2012). Relationship between job satisfaction and job performance: Job ambivalence as a moderator. *Journal of Applied Social Psychology*, *42*, 2019–2040.