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THE IMPACT OF INDIVIDUAL DIFFERENCES ON ATTITUDES AND ATTITUDE CHANGE

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In this chapter, social psychology's major research findings regarding the role of individual differences on attitudes and attitude change are presented. We describe specific dimensions along which people differ (personality, motivations, chronic attitudes, and naïve theories) and analyze these dimensions in terms of their impact on attitudes and persuasion and the processes by which they have their effects. The review is divided into four main sections.

First, we begin by describing some individual differences that are particularly relevant to the attitudes people hold. In this initial section, we also provide some important definitions of concepts including attitudes, attitude structure, and attitude strength. Furthermore, we explain the distinction between implicit and explicit measures of attitudes and describe how individual differences relevant to both of these can be useful in predicting behavior separately and also in combination.

In the second section, we describe the fundamental psychological processes by which any variable relevant to individual differences can exert its effects on attitudes and attitude change. These particular processes are important because they constitute a finite set that allow understanding of current as well as future individual difference variables. We also specify the circumstances under which each of these processes is most likely to operate.

The third section addresses individual differences in the motives that govern human thought and action. We use motives as an organizing scheme to discuss a number of individual differences because of their pivotal role in determining social behavior. These motives serve mostly as a practical guide to organize the growing number and variety of specific individual differences relevant to attitudes and attitude change. The primary function of this structure is to highlight some core similarities across the diversity of individual differences that have been examined in the persuasion literature. Although we rely on this motivational framework to organize the chapter, other organizational frameworks could certainly have been used such as organizing individual differences around the Big Five personality dimensions (Costa & McCrae, 1985; Digman, 1990; Wiggins, 1996). The structure of the second and third sections is similar to our previous review of personality and persuasion (see Briñol & Petty, 2005), but rather than reiterating all findings addressed there, we focus on updates and innovations with respect to the variables covered. Individual differences in nonmotivational variables, such as demographic, ability, and cultural factors are also relevant for attitudes and persuasion. We attend to those individual difference variables in the present review mostly with regard to matching procedures (e.g., targeting persuasive messages to a person's cultural values or to gender identity).

Finally, in the fourth section, we cover how individual difference variables can work not only in isolation, but in combination with situational variables. As was the case when analyzing individual

difference variables separately, a consideration of the psychological processes underlying attitude change is also essential when considering person and situation together. As we illustrate in this section, matching an individual's personality to one or more aspects of the situation (e.g., the message content or frame; the message source) can influence persuasion through the same key processes addressed in the prior sections of this review. This final section constitutes a novel advance over our previous review on individual differences in persuasion.

Part I: Individual Differences in Attitudes and Attitude Strength

We begin by reviewing some individual differences with respect to the valence, strength, and underlying structure of people's attitudes. Attitudes refer to general evaluations individuals have regarding people (including themselves), places, objects, and issues. Attitudes can be assessed in many ways and are important because of their influence on people's choices and actions. After a long tradition of assessing attitudes using people's responses to self-report measures (e.g., Is sour cream good or bad?), more recent work has also assessed attitude change with measures that tap into people's more automatic evaluations. Techniques that assess automatic evaluative associations without directly asking people to report their attitudes are often referred to as *implicit measures* and assessments that tap more deliberative and acknowledged evaluations are referred to as *explicit measures* (Gawronski & Payne, 2010; Petty, Fazio, & Briñol, 2009; Wittenbrink & Schwarz, 2007). Implicit and explicit measures of attitudes are useful in predicting behavior separately and also in combination, and therefore, we will refer to this distinction where relevant throughout this review (see Gawronski & Brannon, this volume).

In addition to their valence, attitudes can also vary in their *strength*, with strong attitudes being those that come to mind easily, influence thought and behavior, persist over time, and resist change (Petty & Krosnick, 1995). Thus, it is important to note that, although an attitude is best conceptualized as a relatively enduring construct with a stored representation, an attitude can also change over time (cf., Schwarz & Bohner, 2001). In the present review, we refer to individual difference variables not only as they relate to the valence of attitudes formed but also with regard to their stability and change.

Finally, attitudes can vary in their underlying structure or bases. For example, some people may tend to base their attitudes more on emotion rather than cognition (Huskinson & Haddock, 2004; Rocklage & Fazio, 2014; See, Petty, & Fabrigar, 2008) or on ambivalent versus univalent information (DeMotta, Chao, & Kramer, 2016; Haddock et al., 2017; Reich & Wheeler, 2016). Other people may hold many attitudes that are linked to moral principles (Day, Fiske, Downing, & Trail, 2014; Feinberg & Willer, 2015) and general values (Blankenship, Wegener, & Murray, 2015; Jost, 2017; Maio, Rakizel, Cheung, & Rees, 2009) whereas others do not. Next, we review some individual differences in the valence, strength, and bases of people's attitudes.

Attitude Valence

One of the most fundamental individual differences with respect to attitudes is whether people tend to form positive or negative evaluations across a variety of attitude objects. Some work has documented dispositional tendencies to hold positive or negative evaluations, and these dispositions predict the valence of novel attitudes, along with other outcomes such as job satisfaction and employee turnover (e.g., Judge, Locke, Durham, & Kluger, 1998). Two measurement devices have been offered. First, based on Weitz's (1952) early demonstration that evaluations of 44 relatively neutral objects could predict novel attitudes, Judge and Bretz (1993) introduced a shorter and more modern version of Weitz's measure focusing on 25 objects that were presumed to be relatively neutral (e.g., modern art). The measure, called the Neutral Objects Satisfaction Questionnaire (NOSQ) requires

participants to rate these objects on a 3-point satisfaction scale (1 = dissatisfied, 2 = neutral, 3 = satisfied). The logic of using relatively neutral objects to assess individual differences in the propensity to be positive or negative is that, if an object is largely neutral, evaluative reactions to it should reflect primarily dispositional rather than situational influences.

In an alternative assessment method, Hepler and Albarracín (2013) introduced the Dispositional Attitude Scale (DAS) in which participants report their attitudes towards each of 16 different objects that aimed to include a mix of both relatively positive (e.g., bicycles) and negative (e.g., receiving criticism) objects. Ratings are made on a 7-point scale anchored at 1 (*extremely unfavorable*) and 7 (*extremely favorable*). Hepler and Albarracín (2013) showed that dispositional attitude valence generalized from the average scores obtained on these items to the formation of attitudes toward new topics. Both the NOSQ and DAS use attitude ratings toward one set of objects to predict attitudes toward other issues and objects, and research shows that both measures are effective and interchangeable methods of accomplishing their intended purpose (Eschelman, Bowling, & Judge, 2015).

Attitude Strength

Although there are many possible indicators of attitude strength (see Petty & Krosnick, 1995), two of the most studied are attitude confidence and attitude stability. We discuss each in turn.

Attitude Confidence

People are more willing to act on attitudes in which they have confidence. Indeed, research shows that attitudes associated with high certainty tend to predict behavioral intentions and behavior better than attitudes associated with doubt (see Rucker, Tormala, Petty, & Briñol, 2014, for a review). Just as confidence moderates the relationship between attitudes and behavior, it also moderates the link between thoughts and attitudes such that thoughts held with high confidence are more likely to contribute to attitudes than those held with doubt (Briñol & Petty, 2009). Thus, confidence is an important construct in the attitudes domain. Most of the studies examining the origins of both attitude and thought confidence have focused on manipulating situational factors that affect confidence or simply measuring confidence with respect to particular attitude objects.

Recently, however, DeMarree, Petty, and Briñol (2017) introduced the notion that, just as there are dispositional differences in attitude valence that can predict the valence of a variety of novel attitude objects as just reviewed (Hepler & Albarracín, 2013; Judge & Bretz, 1993), so too are there dispositional differences in attitude and thought confidence that can predict confidence in attitudes and attitude-relevant thoughts toward a variety of novel objects. To assess dispositional differences in attitude-relevant certainty, participants in this research were asked to report their attitudes towards different objects (e.g., playing chess, public speaking, rugby, taxes) and to report their certainty in each evaluation. In this research, DeMarree and colleagues (2017) replicated previous research by showing that individual differences in dispositional attitude valence predicted the valence of a novel attitude object. More uniquely, this research also showed that collective certainty in unrelated attitudes was related to certainty in attitudes and thoughts toward novel attitude objects. Attitude and thought certainty were also related to self-reports of dispositional self-confidence.

In short, DeMarree and colleagues (2017) showed that individual differences in attitude confidence as assessed with average attitude confidence across a diversity of issues as well as trait self-confidence could be used to predict confidence in unrelated attitudes and attitude-relevant thoughts. One innovation of this research is that it introduces the possibility of making predictions about whose attitudes will be more likely to guide behavior and whose thoughts will be more likely to contribute to attitudes. Importantly, these effects of individual differences in confidence were independent of the effects of other constructs that have been shown to have the potential

to moderate the extent to which people rely on mental constructs, such as self-esteem (Rosenberg, 1965, 1979); narcissism (Raskin & Terry, 1988); self-concept clarity (Campbell et al., 1996; Lodi-Smith & DeMarree, 2018); self-efficacy (Chen, Gully, & Eden, 2001); judgmental self-doubt (Mirels et al., 2002); defusion (Naragon-Gainey & DeMarree, 2017-a; 2017b); and need for cognition (Cacioppo & Petty, 1982).

Attitude Stability

As evidenced by the work on attitude strength (Petty & Krosnick, 1995), it is clear that some attitudes fluctuate over time whereas others remain fairly stable. Prior research has documented several features of attitudes that predict their temporal stability (e.g., Luttrell, Petty, & Briñol, 2016). Importantly, there are also individual differences in the tendency to have stable attitudes. For example, those high in need for cognition (Cacioppo & Petty, 1982), because of their extensive thinking about issues, are predicted to have attitudes with greater temporal stability over time (Cárdaba, Briñol, Horcajo, & Petty, 2013). Similarly, those with dispositional high confidence in their attitudes (DeMarree et al., 2017) should tend to have more stable attitudes, though this prediction has not yet been examined empirically.

In addition to predictors of actual temporal stability, it is noteworthy that people have theories regarding their own attitude stability as well as those of others. For example, individuals who score high on the Implicit Theories of Attitude Stability scale (Petrocelli, Clarkson, Tormala, & Hendrix, 2010) see people's attitudes as unchanging entities. Such beliefs can affect how confident people are in their attitudes, which should have implications for subsequent persuasion. Just as people can have beliefs about the extent to which attitudes fluctuate, there are also more general individual differences in the extent to which people see their personality as stable (entity theorists) or as changeable (incremental theorists; see Dweck, Chiu, & Hong, 1995). These naïve theories about stability and change can be measured and are associated with actual changes in people's attitudes both over time as well as with how people respond to persuasive treatments (John & Park, 2016; Kwon & Nayanakuppam, 2015). In a recent example, Akhtar and Wheeler (2016) showed that people who have entity theories are more certain of their attitudes than are people with an incremental theory, and people with greater attitude certainty are more willing to try to persuade others (when the naïve entity theory focuses on the self) but less likely to persuade others (when the naïve entity theory focuses on others).

Basis of Attitudes

People's attitudes can be based on a number of underlying factors. For example, people differ in the extent to which they take into consideration behavioral information in forming their attitudes, as illustrated by research on individual differences in *locomotion* (Kruglanski, Pierro, & Higgins, 2016) and *embodiment* (Briñol, Petty, Santos, & Mello, 2018; see Harmon-Jones, Armstrong, & Olson, this volume; Schwarz & Lee, this volume).

Beyond behavioral components, one important and classic distinction is whether attitudes are based more on emotion or cognition (Zanna & Rempel, 1988). A number of studies have shown that it is possible to determine if a given attitude is based on emotion, cognition, or a combination of the two. This can be done, for example, by seeing if a global measure of people's attitudes (e.g., how good-bad people rate an object) correlates more highly with their ratings of a battery of emotion-relevant qualities (e.g., how happy-sad the object makes them feel) or cognition-relevant qualities (e.g., how useful-useless the object seems; see Crites, Fabrigar, & Petty, 1994). Individuals differ in the underlying cognitive versus affective structural basis of their attitudes and those differences have been shown to have important consequences. For example, it is generally more effective to change attitudes that

are based on emotion with emotional persuasive messages rather than with more cognitive or rational ones, with the reverse tending to hold for attitudes based primarily on cognition (Edwards, 1990; Fabrigar & Petty, 1999; see Johnson, Wolf, Maio, & Smith-McLallen, this volume).

Just as individual attitudes can be based more on affect or cognition, so too do some people tend to base their attitudes primarily on affect or cognition. This has been assessed by examining the extent to which affect versus cognitive measures predict a person's attitudes better across diverse attitude objects (e.g., Huskinson & Haddock, 2004; Aquino, Haddock, Maio, & Alparone, 2016). Other research has used the need for cognition (Cacioppo & Petty, 1982) and the need for affect (Maio & Esses, 2001) scales to examine this. In one study, for instance, Haddock, Maio, Arnold, and Huskinson (2008) found that higher levels of the need for affect predicted greater persuasion in response to an affective but not a cognitive based appeal, whereas higher levels of need for cognition predicted greater persuasion in response to a cognitive but not an affective appeal. This suggests that these scales can be used to tap into individual differences in the affective versus cognitive bases of attitudes (see Maio & Haddock, 2015, for a review).

Independent of individual differences in the extent to which attitudes actually are based on affect or cognition, people also differ in their *perceptions* of the basis of their attitudes. This has been assessed by simply asking people about the extent to which they believe that their attitudes are cognitively or affectively based (See, Petty, & Fabrigar, 2008). Importantly, these self-perceptions of attitude bases (called meta-bases) tend to be uncorrelated with structural bases and predict persuasion independent of the structural basis of a person's attitude. Furthermore, structural and meta-bases predict some different outcomes. For example, in one study (See, Fabrigar, & Petty, 2013), more affective structural bases of attitudes predicted faster reading time for affective than cognitive information whereas more cognitive structural bases predicted faster reading time for cognitive than affective information. This was presumed to reflect the greater processing efficiency that is possible when information is matched to one's structural basis. This same study observed that more affective meta-bases predicted slower reading time for affective than cognitive information whereas more cognitive meta-bases predicted slower reading time for cognitive than affective information. This was presumed to reflect the greater interest in processing that occurs when information is matched to one's meta-basis.

Part II: Fundamental Processes of Attitude Change

In specifying the underlying processes of attitude change that we will use to understand the impact of individual differences, we rely on the mechanisms specified by the elaboration likelihood model of persuasion (ELM; Petty & Cacioppo, 1986; Petty & Wegener, 1999; Petty & Briñol, 2012). That is, according to the ELM, individual differences, like other variables in persuasion settings, can influence attitudes by affecting a finite set of processes. That is, in the ELM, variables can: (a) determine the amount of issue-relevant thinking that occurs, (b) bias the thinking that occurs, (c) affect what people think about their own thoughts (metacognition), (d) be examined as pieces of evidence or arguments, and (e) serve as simple cues that produce influence in the absence of much issue-relevant thinking. The ELM specifies the antecedents and consequences of each of these processes, making clear predictions about when and for whom each of these processes is more likely to operate in changing attitudes.

Of course, there are other multi-process persuasion theories that might have been used as organizing frameworks for our review, including, for example, the *heuristic-systematic model* (HSM, Chaiken, Liberman, & Eagly, 1989; see Johnson et al., this volume, and Johnson, Maio, & Smith-McLallen, 2005, for a review of some of these theories). We rely on the ELM primarily because it has guided numerous studies of individual differences and is comprehensive in outlining the multiple processes by which variables can impact persuasion. Next, we describe how the fundamental processes of change are relevant to individual difference variables.

Amount of Thinking

One of the most important and fundamental ways in which variables, including individual differences, can influence attitudes is by affecting the amount of thinking in which people engage when making an evaluation. This effect is most likely to occur when thinking is not already constrained to be high or low by other variables, such as when there is neither high distraction which reduces the ability to think (Petty, Wells, & Brock, 1976) nor high personal relevance which increases the motivation to think (Petty & Cacioppo, 1979). The more motivated and able people are to think about a message, the more their attitudes are determined by their valenced thoughts in response to the message (Petty, Ostrom, & Brock, 1981). Increased thinking can result in more attitude change if the arguments presented are strong, and people therefore generate more favorable thoughts as thinking increases. Alternatively, increased thinking can result in less attitude change if the arguments presented are weak, and people therefore generate more unfavorable thoughts as thinking increases. As we discuss shortly, not only can individual difference variables like the need for cognition (Cacioppo & Petty, 1982) affect the amount of thinking that occurs, but individual differences can also determine what information is viewed as compelling versus specious. For example, people high in self-monitoring value information based on the image it conveys more than people low in this trait (Evans & Clark, 2012; Snyder & DeBono, 1985). Importantly, according to the ELM, the more an attitude is formed on the basis of effortful information processing, the more it should be well articulated and bolstered by supporting information, and as a consequence, it should exhibit the properties of strong attitudes (Petty & Krosnick, 1995). That is, the more an attitude change is based on more thinking, the more it should persist over time, resist counterpersuasion attempts, and guide behavior (see Petty, Haugtvedt, & Smith, 1995, for a review).

Type or Direction of Thinking

A second mechanism by which individual difference can influence attitudes is by affecting not the amount, but the direction of the thinking that takes place. This mechanism is most likely when thinking is already set to be high by other variables in the situation (e.g., high personal relevance of the message; Petty & Cacioppo, 1979). Perhaps the most extensively explored direction that thinking can take is whether it is aimed at supporting or derogating the content of the information provided (Cacioppo, Harkins, & Petty, 1981). Individual differences can motivate or enable people to either increase the likelihood of generating favorable thoughts or the likelihood of generating unfavorable thoughts. For example, optimists are more likely to generate favorable thoughts to a message whereas pessimists are more likely to do the opposite (Geers, Handley, & McLarney, 2003; Geers, Wellman, & Fowler, 2013). This is potentially important because attitude change is a function of the number and valence of thoughts that come to mind when elaboration is high. Such thoughts can either be about attributes of the attitude object or emotions and behaviors experienced.

The distinction between amount and direction of thinking suggests that some individual differences are more likely to be associated with enhancing relatively objective (undirected) thinking whereas others are more likely to enhance biased (directed) thinking. For example, with respect to motives, the need to know is likely to be associated with extensive and largely objective elaboration since the motive to understand is relatively independent of the content. In contrast, the need for self-worth could focus information processing activity in a particular direction if one side or the other reflected more favorably on the self. Other individual differences that reflect motives such as consistency and social approval might also guide information processing in a particular direction.

Metacognition

Third, individual differences can influence attitude change by affecting what people think about their own thoughts. That is, in addition to affecting the number of thoughts, and the valence of thoughts when the amount of thinking is set to be high, variables can also affect metacognitive features of the thoughts that are generated such as how much confidence people have in them, how much they like them, or how biasing they are perceived to be. Confidence in thoughts is important because, when thoughts are held with greater confidence, people are more likely to use them in forming their judgments (Petty, Briñol, & Tormala, 2002). In contrast, if people doubt the validity of their thoughts, the thoughts will not have an impact on judgments. Earlier we noted that individual differences in attitude and thought confidence have been identified (DeMarree et al., 2017).

If people believe that their thoughts are biasing in some way, they can adjust their judgments in a direction opposite to the implication of the thoughts (correction processes; Wegener & Petty, 1997; Wilson & Brekke, 1994). These metacognitive features of thoughts are most impactful when the amount of thinking is high because it is only in such situations that people have a substantial number of issue-relevant thoughts with the potential to shape attitudes. Also, the conditions that foster high thinking in terms of the generation of thoughts, such as the personal importance of the topic, are likely also to foster caring about the usefulness of the thoughts generated.

Serving as Arguments

Next, when the amount of thinking is high, variables can serve as arguments. When thinking is high, people assess the relevance of *all* of the information in the context and that comes to mind in order to determine the merits of the attitude object under consideration. That is, people examine source, message, recipient, and contextual information as possible arguments or reasons for favoring or disfavoring the attitude object. Here, the same variable (e.g., source expertise, one's mood) that served as a simple cue when thinking was low or affected the extent of processing when thinking was unconstrained or biased thoughts or affected confidence in them when thinking was high can itself be scrutinized as to whether or not it provides a meaningful and logic argument or reason for changing one's attitude or adopting the advocated position. For example, whereas an attractive source might increase persuasion under low elaboration purely because people have a positive association with attractive individuals, under high-elaboration conditions, people scrutinize whether the attractiveness of the source is relevant to the advocacy. Under high-thinking conditions, an attractive source will exert little impact when people view the attractiveness as irrelevant to the merits of the advocacy. However, when the attractiveness is relevant, such as if the source is advertising a beauty product, then physically attractive sources could be more persuasive than unattractive sources by serving as a cogent argument (i.e., providing visual evidence; Petty & Cacioppo, 1984).

As noted earlier, individuals can vary in what type of information serves as persuasive evidence for any given attitude object. Of relevance here is that individual differences could serve as an argument for some advocacy. For example, as we describe later, attractiveness can serve as an argument for individuals high in self-monitoring but not for those low in self-monitoring (DeBono & Harnish, 1988). As another example, if one's gender or social role was made salient, a person might think, "As a mother, I should support this because it is good for families." In another example, a person's perceived sense of power might serve as a compelling argument when the judgment is whether the person should apply or be hired as a football coach—a position where leadership potential and dominance, a correlate of power, might be valued traits—but not as a food critic, where power might be viewed as insignificant. As we describe next, when used as a simple cue when thinking is low, however, individual differences in feelings of power could be equally effective in both of these situations simply because of its positive valence.

Use of Cues

Finally, under relatively low-thinking conditions (e.g., high distraction, low personal relevance), individual differences can influence attitude change by serving as a simple cue, affecting the selection of cues, or by having an impact on what cues would be more effective. For example, if one's high level of self-esteem led a person to reject all messages as not worthy, one's high self-esteem is serving as a simple rejection cue. Or, if the need to know is high but people are unable to process a message for some reason (e.g., distraction, noise), they are likely to look for cues related to knowing and accuracy, such as source credibility rather than source attractiveness. In contrast, social rather than knowledge cues would likely have a greater impact when the need for social inclusion is high.

Summary

In sum, the ELM postulates that any communication variable can influence attitudes by affecting one of the key processes of persuasion just described. That is, any of the innumerable ways in which individuals differ can serve as an issue-relevant argument, or a peripheral cue, or affect the motivation or ability to think about the message, bias the nature of the thoughts that come to mind, or affect structural properties of the thoughts such as how much confidence people have in them. As noted, the ELM specifies that some of these processes are most likely to operate when thinking is low, some operate when thinking is high, and others operate when thinking is unconstrained to be either high or low. The ELM also articulates the consequences associated with high- versus low-elaboration attitude change (e.g., degree of resistance to counterpersuasion). As noted earlier, although we focus on the ELM as an organizing theory, there are other frameworks that also emphasize multiple processes, such as the HSM (Chaiken et al., 1989). Though developed independently, these two theories explain similar phenomena with somewhat different language (see Eagly & Chaiken, 1993; Petty & Wegener, 1999, for further discussion, and see Briñol & Petty, 2012, for a historical review).

Part III: Individual Differences in Motives Impact Persuasion Processes

In accord with the initial classification of attitude-relevant individual difference variables by Briñol and Petty (2005), the present review also organizes our presentation according to four core motives: (a) knowledge, (b) consistency, (c) self-worth, and (d) social approval. The precise distinctions among the motives are, of course, somewhat arbitrary and overlapping, but they capture much of the current thinking about motivation in the field (Fiske, 2004). The motives we have selected have the advantage of being broad, basic, and precise and more fundamental to the nature of human desire than particular specific motives that are the result of relatively specific situations. The extent to which these motives are chronically or temporarily activated not only can vary from individual to individual, but also can vary within the same individual from situation to situation. Yet, in the main, this chapter examines individual rather than situational differences in those motives (i.e., we examine motives as traits rather than states).

We use the motives as a practical guide to organize the growing number and variety of specific individual difference variables relevant to attitudes and persuasion. The main function of our organizing structure is to facilitate access to the diversity of individual differences that have been examined. By using this motivational framework to organize the chapter, we do not mean to imply that a particular individual difference was originally designed to assess a specific motive. In fact, due to the overlap among the motives, some of the individual differences described under one motive could plausibly be discussed under a different motive. Finally, it is worth noting that the focus of our analysis is on examining the impact of individual differences on attitude change and attitude strength, not on the particular attitudinal positions that individuals hold, though there are some clear

findings here such as when ideological liberals are more likely to take liberal stances on a variety of issues than ideological conservatives (e.g., see Jost, Glaser, Kruglanski, & Sulloway, 2003; Ludeke & Rasmussen, 2016).

In this part of the chapter, we explain how particular individual differences falling under the four motives can influence attitude change with a focus on the psychological processes outlined in the previous section of the chapter. We first consider the impact of each motive as a whole and then we examine research on some prominent individual differences related to the motive. In providing this review, we aim to minimize redundancy with our earlier review (Briñol & Petty, 2005).

Individual Differences Relevant to the Need for Knowledge

Motives to understand the social world (i.e., the need for knowledge) are related to a wide variety of social influence phenomena. For example, partly because of their greater wisdom and partly because they control our rewards and punishments, legitimate authorities are often very influential message sources (e.g., Cialdini, 1993). This is particularly clear for people with strong authoritarian beliefs, as was demonstrated in the Milgram conformity experiments (Milgram, 1974) and in a variety of other studies (Ditto, Moore, Hilton, & Kalish, 1995).

The need for knowledge can influence persuasion processes in a variety of ways. Most notably, the need to know may require that people carefully process whatever information might be relevant in order to form an adaptive attitude and thus gain predictability and control over the social environment. Thus, the need to know can influence attitude change and attitude strength by affecting the amount of information processing that occurs (Chaiken & Maheswaran, 1994). In addition, when the need to know is high, people would tend to assess the validity of their own thoughts by using information related to the credibility of the source or other indicators of accuracy (Briñol, Petty, & Tormala, 2004). If the need to know is high but people are unable to process for whatever reason (e.g., distraction, noise), they are likely to look for cues related to knowing and accuracy, such as source credibility and legitimacy (Petty, Cacioppo, & Goldman, 1981).

Briñol and Petty (2005) described the specific individual difference measures related to the need to know and their influence on attitude change and strength through these psychological processes. Those measures included the *need to evaluate* (NE; Jarvis & Petty, 1996), which refers to individual differences in people's tendencies to engage in evaluative thought. People who are high in their NE tend to assess whether things are good or bad and are more likely to form attitudes toward everything around them. That is, people high in the NE are more likely to form an opinion during message processing whereas those low in NE must construct an attitude when it is needed (Tormala & Petty, 2001). As a result, people high in their NE tend to have more accessible (stronger) attitudes than those low in this trait (Hermans, Houwer, & Eelen, 2001). Those high in NE also tend to be more likely to act on their opinions than those low in NE and are also less likely to report "no opinion" to items in responding to surveys (Bizer et al., 2004; Federico & Schneider, 2007).

The *need for closure* (Webster & Kruglanski, 1994) refers to the desire for a definitive answer on some topic as opposed to confusion and ambiguity. In general, the need for closure appears to function similar to other treatments of open and closed-mindedness (Price, Ottati, Wilson, & Kim, 2015). Being high in need for closure has been shown to reduce the extent of information processing, to magnify primacy effects, to increase reliance on theory-driven versus data-driven processing, and also to enhance reliance on initial anchors and primes (see Kruglanski & Webster, 1996, for a review). Paradoxically, despite their reliance on less information, Kruglanski and Fishman (2009) stated that individuals high (vs. low) in need for closure report greater confidence in their judgments.

Another construct relevant to this motive is *causal uncertainty* (CU; Weary & Edwards, 1994), which is defined as uncertainty about one's ability to identify and understand the causal conditions

for social events. Individuals high in CU are motivated to resolve feelings of uncertainty by gaining a more accurate understanding of causal relations in the social world. For that reason, high scores on CU have been found to be related to enhanced social information processing and information search (Weary, Tobin, & Edwards, 2010). People high in this trait are also more likely to correct their judgments when a bias is salient and unwanted (Vaughn & Weary, 2003). Additional research has shown that casual uncertainty can affect attitude change by influencing the extent to which individuals elaborate on messages, especially when presented by experts on important topics using causal arguments (Tobin & Raymundo, 2009).

In addition to these well-established measures in the literature on attitudes, the need to know could also be related to a variety of other measures that have appeared more recently, such as the Open-Minded Cognition scale (Price, Ottati, Wilson, & Kim, 2015). Open-Minded individuals attend to a variety of viewpoints, consider competing perspectives, and tend to elaborate objectively on information, whereas Closed-Minded individuals process in a more biased fashion, looking for evidence that reinforces the individual's prior attitudes. Although there are some other scales that could plausibly relate to the need to know, without question, the Need for Cognition scale is the individual difference measure most relevant to the need to know that has received the most attention within the domain of attitudes and persuasion. Therefore, we describe that construct and its effects in more detail.

Need for Cognition

As Cacioppo and Petty (1982) conceptualized it, the need for cognition (NC) refers to the tendency for people to vary in the extent to which they engage in and enjoy effortful cognitive activities. Some individuals have relatively little motivation for cognitively effortful tasks and are described as being low in NC. Other individuals consistently engage in and enjoy cognitively challenging activities and are referred to as being high in NC. For people high in NC, thinking satisfies a motive and is enjoyable. For people low in NC, thinking can be a chore that is engaged in mostly when some incentive or justification is present.

The available evidence indicates that as NC increases, people are more likely to think about a wide variety of things including their own thoughts (for reviews, see Cacioppo, Petty, Feinstein, & Jarvis, 1996; Petty, Briñol, Loersch, & McCaslin, 2009). As evident from prior reviews, the enhanced thinking resulting from high NC often produces more consequential (e.g., enduring) judgments (Haugtvedt & Petty, 1992) and can sometimes provide protection from common judgmental biases (Carnevale, Inbar, & Lerner, 2011). At other times, however, enhanced thinking can exacerbate a bias or even reverse it (e.g., if over-correction for a perceived bias occurs; e.g., Petty, DeMarree, Briñol, Horcajo, & Strathman, 2008).

We begin our review of this construct with a brief description of the NC construct and its role in fostering high versus low thinking processes in attitude formation and change. Then, we turn to the role of NC in metacognitive processes relevant to persuasion. We describe the role of NC in both individual and group persuasion.

First, consistent with the idea that NC is associated with effortful thinking, people high in NC tend to form attitudes on the basis of an effortful analysis of the quality of the relevant information in a persuasive message (e.g., discriminating between strong and weak arguments; Luttrell, Petty, & Xu, 2017; discriminating between diagnostic vs. non-diagnostic information; Chang, 2007). Indeed, the impact of need for cognition on persuasive message processing is one of the most replicated NC findings (see meta-analysis by Carpenter, 2015), including a large-scale pre-registered replication (Ebersole, Alaei, Atherton, & Nosek, 2017). In contrast, absent any incentive to the contrary, low NC individuals are more reliant on variables that can serve as simple cues to form an evaluation such as the attractiveness or credibility of the message source (Haugtvedt, Petty, & Cacioppo, 1992).

They are also more likely to use their own emotional states as a simple cue (Briñol, Petty, & Barden, 2007; Petty, Schumann, Richman, & Strathman, 1993).

Importantly, even low NC individuals can be motivated to scrutinize the message arguments and eschew reliance on cues if situational circumstances are motivating—such as when the message is of high personal relevance (Axsom, Yates, & Chaiken, 1987); when there is some doubt or uncertainty regarding the communication or it is surprising in some way (Priester, Dholakia, & Fleming, 2004; Smith & Petty, 1996); when the media through which they receive the information is entertaining or engaging (e.g., when it uses comic-strips, Stephan & Brockner, 2007); when the message matches some aspect of the recipient's self-concept (Evans & Petty, 2003); and when the message includes emotional contents (Vidrine, Simmons, & Brandon, 2007). These effects occur because high and low NC individuals do not differ much in their ability to think, but primarily in their motivation to do so. When strong arguments are presented, increasing thinking enhances persuasion, but when weak arguments are presented, increasing thinking diminishes persuasion. Just as low NC individuals can be motivated to increase their thinking, the normally extensive thinking of high NC individuals can be undermined when a message is framed as being for those who do not like to think (Wheeler, Petty, & Bizer, 2005), or when the message is framed as being very simple to process (See, Petty, & Evans, 2009), or when the thinking is demanded rather than spontaneous (Lassiter, Apple, & Slaw, 1996; Leone & Ensley, 1986).

Second, since individuals high (vs. low) in NC typically engage in more thinking, they also tend to have stronger attitudes (i.e., attitudes that are more accessible in memory, persistent over time, resistant to change, and influential in determining subsequent behavior and information-processing; e.g., Haugtvedt & Petty, 1992). People higher in NC also tend to be aware of these strength consequences. In one recent illustration, Cárdena, Briñol, Horcajo, and Petty (2013) classified individuals with respect to their NC and then exposed them to a persuasive message composed of compelling arguments in favor of a minority group or with a control message. Subsequently, attitudes toward the stigmatized group were assessed along with some attitude strength indicators. The results showed that even though the compelling message produced the same reduction in prejudice across levels of NC, those higher in NC stated that their attitudes were more resistant to change (see also Wegener, Clark, & Petty, 2006).

Additionally, because individuals high (vs. low) in NC engage in more thinking, they tend to form stronger automatic associations among attitude objects (Briñol, Petty, & McCaslin, 2009) and to generalize their changes to other beliefs related to the attitude object (e.g., Murphy et al., 2005). However, if high NC individuals are told that they based their attitudes on simple cues rather than a careful assessment of the message arguments, they feel conflicted about their attitudes which can undermine attitude strength (Tormala & DeSensi, 2008).

A third important finding with respect to NC is that individuals high in NC not only tend to generate more thoughts than those low in NC, but they are also more likely to think about their thoughts and thought processes (i.e., engage in metacognition; Briñol & DeMarree, 2012; Petty et al., 2007). For example, following thought generation in response to a persuasive message, individuals high in NC are more likely to evaluate their thoughts for validity, a process called *self-validation* (Petty, Briñol, & Tormala, 2002). As noted earlier, when thoughts are seen as valid or people feel good about them, the thoughts are used in forming judgments, but when the thoughts are not seen as valid or people feel bad about them, they are not. A number of variables have been shown to affect thought confidence and pleasantness, and subsequent reliance on thoughts more for individuals high than low in NC including whether message recipients were nodding rather than shaking their heads during thought generation (Briñol & Petty, 2003); experiencing ease rather than difficulty in thought generation (Gandarillas, Briñol, Petty, & Díaz, 2018; Tormala, Petty, & Briñol, 2002; Tormala et al., 2007); or feeling happy rather than sad after generating thoughts (Briñol, Petty, & Barden, 2007; Clore & Schnall, this volume). Thought confidence has also been increased

more for high than low NC individuals if, following thought generation messages, recipients learned that the source was high rather than low in credibility (Briñol, Petty, & Tormala, 2004); were made to feel powerful rather than powerless (Briñol, Petty, Valle, Rucker, & Becerra, 2007); or were led to believe that their thoughts were shared by similar rather than dissimilar others (Petty et al., 2002). In the domain of attitude change, enhanced thought confidence can increase persuasion when thoughts are favorable toward the proposal but decrease it when thoughts are mostly unfavorable.

Not only do high NC individuals think about the thoughts that they have generated to a message more than low NC individuals, but they also think about the process by which they either changed their attitudes or resisted change. When people high in NC change their attitudes, they become more confident of their new opinions if they believe that they have thought a lot about the issue (Barden & Petty, 2008) and have considered both sides of the issue rather than just one side (Rucker, Petty, & Briñol, 2008). In contrast, if people have resisted persuasion, they can become more confident in their original attitude if they are impressed with their resistance. For example, if individuals high in NC think they have resisted strong arguments, they become more confident than if they think they have resisted weak ones (Petty, Tormala, & Rucker, 2004; Tormala & Petty, 2004).

Research shows that individuals high in need for cognition are more likely to engage in biased information processing which can produce the same attitudinal effects as observed for low need for cognition individuals relying on simple peripheral cues. For example, Petty et al. (1993) demonstrated how low and high NC individuals can show similar attitude outcomes that are mediated differently. In one study, participants viewed a series of commercials, the critical one being for a pen. Participants' incidental emotion was manipulated by embedding the commercial in a television program that invoked either a positive or a neutral affective state. Both high and low NC participants developed more favorable attitudes toward the pen when they were happy. However, the effect of emotion on attitudes was mediated by the favorability of the thoughts generated in response to the message for those high in NC (i.e., emotion biased thought production), but not for those low in NC (i.e., a direct effect of emotion on attitudes was obtained consistent with emotion serving as a simple cue). Because the mechanism underlying persuasion is consequential for the strength of the attitude developed, even if low and high NC individuals show the same extent of attitude change in a given situation, the consequences (e.g., persistence) of this persuasion can differ.

Another difference between people high versus low in their NC is that the former individuals are more likely to correct their judgments for any perceived judgmental biases that might be operating (Wegener & Petty, 1997). For example, DeSteno et al. (2000) found that when an irrelevant source of emotion was made salient, people high in NC adjusted their judgments in a direction opposite to the perceived biasing impact of the emotion. If individuals high in NC overestimate the impact of their emotions (or any other potential biasing factor), they are likely to adjust their judgments in a direction opposite to the perceived bias, resulting in contrast or over-correction effects.

Need for cognition has also been related to a number of well-established attitudinal phenomena, such as the *sleeping effect*, which occurs when people are exposed to a very strong persuasive message counter to the person's initial attitude, but this strong message is subsequently discounted (e.g., claimed to be false). In this paradigm, people are not persuaded immediately after exposure to a communication associated with the discounting cue, but over time, the message becomes more persuasive. Priester, Wegener, Petty, and Fabrigar (1999) found that high (vs. low) NC individuals were more susceptible to the sleeping effect and suggested that this was because the persisting impact of the message for high NC individuals was evident even after the discounting cue was dissociated from the message. For low NC individuals, their minimal processing of the message led to a less enduring impact of the message when the discounting cue was forgotten (see Kumkale & Albarracín, 2004, for a review).

Finally, although most work on NC has examined its operation with respect to intrapersonal cognition and evaluations, some studies have shown that people who vary in NC also behave

differently in interpersonal contexts. For example, research suggests that those high in NC typically take a more involved role in dyads and other small group settings. Specifically, high NC individuals tend to enter discussions earlier, speak longer, and are perceived to be more active and persuasive than those low in NC (Briñol, Becerra, Díaz, Horcajo, Valle, & Gallardo, 2005, Shestowsky, Wegener, & Fabrigar, 1998).

In sum, a number of general conclusions emerge about NC in the domain of evaluation. First, the differences in the extent of thinking between high and low NC individuals can result in different outcomes in response to the same persuasive treatment. For example, if people experience happiness (versus sadness) *after* receiving a weak persuasive message, the happiness would induce more persuasion for low NC individuals by serving as a simple positive cue, but would lead to less persuasion for high NC individuals by instilling more confidence in their negative thoughts. Second, even when high and low NC individuals show the same outcome, the underlying processes and further consequences often differ (e.g., weaker attitudes for low than high NC individuals). Third, although the mechanisms usually differ, high and low NC individuals can both be susceptible to a variety of biases, regardless of the nature and the source of the biasing factor (e.g., priming, an anchor, a stereotype, or an emotional state; Petty et al., 2008). Finally, individual differences in NC are relevant not only for understanding how people process information as targets of influence, but also for how they behave as persuasive agents.

Individual Differences Relevant to the Need for Consistency

Briñol and Petty (2005) reviewed some of the classic measures in the literature on individual differences relevant to the motive for consistency including work on the *authoritarian personality* (Altemeyer, 1969) and *open versus closed belief systems* (Rokeach, 1954; Jost, 2017). Other relevant constructs in this category included the *preference for consistency* (PFC; Cialdini, Trost, & Newsom, 1995) scale that has been found to be useful in predicting individuals who would be more susceptible to influence effects based on cognitive consistency such as the foot-in-the-door technique (Guadagno, Asher, Demaine, & Cialdini, 2001); cognitive dissonance (Festinger, 1957); and attitudinal ambivalence (Newby-Clark, McGregor, & Zanna, (2002).

Other constructs that tap into individual differences in beliefs about ability and motivation to change or to resist change include the *Resistance to Persuasion Scale* (RPS; Briñol et al., 2004) and the *Defensive Confidence Scale* (DCS; Albarracín & Mitchell, 2004). For example, individuals who are high (vs. low) in defensive confidence are more likely to expose themselves to counterattitudinal information and, as a result, are potentially more likely to change, at least when receiving arguments that are strong (see also Albarracín, Wang, & Albarracín, 2012). The ability of these measures to predict outcomes relevant to attitudes and persuasion suggests that people have some insight into the stability and resistance of their attitudes. Indeed, people differ in their beliefs about many aspects of their attitudes, including beliefs about the extent to which they know what their attitudes are and how to change them and their beliefs about the desirability of those changes (see Briñol & Petty, 2012, for a review). People also differ in the extent to which they see persuasion as something good or bad. People who see persuasion as good are presumably not bothered by change, whereas people who see persuasion as something bad presumably have a preference for being consistent (see also Ludeke & Rasmussen, 2016).

To examine whether participants held different naïve theories about the meaning of persuasion, Briñol, Rucker, and Petty (2015) asked participants to express whether they agreed or disagreed with a series of statements like “attitude change is brainwashing,” or “most persuasion is propaganda.” Briñol, and colleagues (2015) found that individuals’ naïve theories about the meaning of persuasion influenced the likelihood they elaborated upon a persuasive proposal. Specifically, results showed that individuals who naturally held more negative views of persuasion were more inclined

to scrutinize the message carefully and thus showed a greater differentiation between weak and strong arguments than individuals who held less negative views of persuasion.

Currently available results on individual differences in the evaluation of persuasion were obtained under conditions in which the motivation and ability to process were not constrained by other variables to be especially high or low. Had the elaboration conditions differed, the results would likely change. For example, if participants were distracted and thus unable to think carefully, instead of increasing processing, participants may have used their different naïve theories about the meaning of persuasion as a simple cue. As such, participants with a more negative evaluation of persuasion might think, "I didn't get a chance to read that message, but I think persuasion is bad so I don't like the proposal." Alternatively, had participants been under high-elaboration conditions (e.g., the advocacy was of high personal relevance), their naïve theories about the meaning of persuasion may have led to biased processing. That is, participants with more negative views may have biased their thinking towards counterarguing, and if they find fault, less positive attitudes would result. Like any other variable, individual differences relevant to persuasion can operate differently depending on the circumstances.

One interesting question raised by this research concerns the malleability of naïve theories about persuasion. The available literature suggests that such beliefs are indeed malleable and can be quite context specific (Petrocelli et al., 2010; Rydell et al., 2006). For example, in one of the studies by Briñol and colleagues (2015), participants' beliefs about persuasion were experimentally manipulated. Specifically, in the "persuasion good" condition, participants were given the target word "persuasion" and were asked to choose the five best words to define persuasion from a list that included only positive words such as: communication, dialogue, and negotiation. In the "persuasion bad" condition, participants were given the same task but had to choose from a list of only negative words such as: brainwashing, manipulation, and propaganda. Using this simple procedure to make individuals' associations with persuasion to be good or bad, message elaboration was subsequently affected in the same manner as with the measured scale. That is, those who were induced to have momentarily negative associations about persuasion scrutinized the information presented in a message more carefully, which is similar to what happens when people are skeptical of and do not trust the message source (e.g., Priester & Petty, 1995).

Individual Differences Relevant to the Need for Self-Worth

Although there are individual and cultural differences in the extent to which a person possesses a positive self-view, most people tend to seek to foster and maintain a favorable view of themselves (Taylor & Brown, 1988). A wide variety of self-esteem maintenance tactics have been identified in the literature. These tactics highlight the importance of protecting a positive self-evaluation and have implications for attitudes and attitude change. These include motivated reasoning, self-affirmation, basking and blasting, compensatory self-enhancement, downward social comparison, self-handicapping, and defensive pessimism (e.g., Kunda, 1990; Steele, 1988). In our previous review, Briñol and Petty (2005) described a number of individual differences relevant to self-worth, such as *self-doubt* (Oleson, Poehlmann, Yost, Lynch, & Arkin, 2000) and *optimism* (Geers et al., 2003). Although there are many relevant measures, probably the most important construct regarding individual differences in self-worth is self-esteem. Therefore, we focus our attention on describing the implications of self-esteem for attitudes and persuasion.

Self-esteem

Self-esteem (SE) refers to the general evaluation that a person has for him or herself (Rosenberg, 1965). McGuire (1968) proposed that the relationship between SE and persuasion should be positive

when message reception processes dominate, but negative when yielding processes dominate. That is, recipients low in SE might have difficulty understanding the message; whereas those high in SE might tend not to yield to it. If both processes operate simultaneously, then one would expect a curvilinear relationship between SE and persuasion. A meta-analysis of the literature revealed evidence for this curvilinear relationship, with people of moderate SE tending to be more persuaded than those low or high in SE (Rhodes & Wood, 1992). Although the curvilinear finding is consistent with the predictions derived from McGuire's (1968) reception-yielding model of persuasion, research has tended not to assess the underlying mediating processes. Thus, the results may be due to other factors than those postulated.

As with any other individual difference variable, our view is that SE can play multiple roles in persuasion depending on the circumstances specified in this review. That is, according to the multiple roles ELM postulate articulated earlier, depending on the context, SE might serve as an issue-relevant argument, or a peripheral cue, or affect the motivation or ability to think about the message, bias the nature of the thoughts that come to mind, or affect how much confidence people have in their issue-relevant thoughts. When motivation and/or ability to process the information are relatively low, people can look at their SE to decide whether to accept or reject the persuasive message. Under these circumstances, high SE individuals might be more resistant to persuasion than low SE individuals because they would be more likely to reason that their own opinion was as good as or better than that of the source. Those low in SE would come to the opposite conclusion and thus be more likely to yield to influence, which is similar to McGuire's proposal for the yielding component in his reception-yielding theory. In accord with the ELM, reception and processing of the message arguments are not necessary for persuasion to occur under low thinking conditions so a low-effort yielding mechanism would be sufficient.

When elaboration is relatively high, SE can play a different role such as biasing the direction of the thoughts. Under high-thinking conditions, high SE individuals would be likely to engage in thinking that supported their initial attitudes but derogate alternative positions. Of course, as just noted, such an *endowment effect* (i.e., valuing one's own attitude over that of others; Kahneman, Knetsch, & Thaler, 1991; Chatterjee, Irmak, & Rose, 2013) for high SE individuals could also operate under low elaboration, but when SE operates as a positive cue, it would likely lead people to simply reject an opposing message rather than engaging in biased processing of it. If one's self-esteem is salient following rather than prior to thought generation, however, SE could influence persuasion by affecting the confidence people have in the validity of the thoughts they have generated in response to the message. In that case, high SE individuals would be more likely to rely on their thoughts when forming attitudes (DeMarree et al., 2017). In support of this notion, some relevant research has shown that people value their thoughts more if those thoughts are perceived as belonging to themselves rather than someone else, but only if they are relatively high rather than low in self-esteem (Briñol, Petty, Santos, & Mello, 2018; see also Harber, 2005).

Furthermore, when elaboration is high, if people were made aware of the potentially biasing impact of their own SE (either on information processing or on judgment), they might attempt to correct for this influence. Also, we speculate that SE might even serve as a message argument if it contains information central to the merits of the object as might be the case in some personal selling scenarios, such as job interviews (e.g., I should get the job because I'm the best!). Finally, when elaboration is not constrained to be low or high, SE can influence attitudes by affecting the extent of information processing, with low SE typically being associated with less elaboration than high SE. For example, low SE individuals might have little need to scrutinize the merits of a communication because they would believe that most people are more competent than they are and, thus, the message can be accepted on faith. A high SE person, however, would have the confidence to scrutinize the message. This view is consistent with the results of Skolnick and Heslin (1971) who found that argument quality was more important in determining the attitudes of high than low SE individuals.

moderated by scores on implicit SE (i.e., the link between the self and its valence). Horcajo et al. predicted and found that the false feedback increasing the self-vegetable linkage led to more favorable implicit attitudes toward vegetables, but only for those with relatively high implicit self-esteem.

Individual Differences Relevant to the Need for Social Inclusion

The need for social inclusion and approval is one of the most basic human motives and refers to the need for human connection, relatedness, belonging, caring, and attachment. Although the degree to which a person is interdependent and bound up with others, as compared with the degree to which the individual is independent and separate, can vary as a function of culture (Kitayama et al., 1997; see Shavitt, this volume), all individuals value to some extent being included by and approved of by others (e.g., Baumeister & Leary, 1995; Brewer, 1991). Groups exert influence on individual attitudes because other people provide an informational standard of comparison for evaluating people's own attitudes (social comparison function; Festinger, 1954) and because they provide social norms with which people comply in order to gain or maintain group acceptance (normative function; Deutsch & Gerard, 1955). Prior research has shown that the extent of processing of a message advocated by a majority or a minority source not only varies as a function of contextual factors, but also as a function of individual difference factors such as uncertainty orientation (Shuper & Sorrentino, 2004); construal level (Falomir, Mugny, Quiamzade, & Gabarrot, 2011); and need for uniqueness (Clarkson, Dugan, Crolic, & Rahinel, 2017).

Briñol and Petty (2005) covered individual differences in general motives toward collective versus individual orientation. The variables of interest included the *need for uniqueness* (Snyder & Fromkin, 1977); *individualism-collectivism* (Triandis, McCusker, & Hui, 1990); *field dependence* (Witkin, Lewis, Hertzman, Machover, Meissner, & Wapner, 1954); and *Machiavellianism* (Christie & Geis, 1970). In the domain of attitude change, these constructs have been found to produce mostly matching effects. As explained in more detail in the next section, matching occurs when a message is made to appeal to (match) some particular characteristic of an individual as often assessed with a personality inventory. For example, Han and Shavitt (1994) found that, compared to Koreans, Americans were more persuaded by advertisements emphasizing individualistic benefits. In contrast, ads emphasizing family or ingroup benefits were more persuasive for Koreans than for Americans. In the forthcoming section on matching effects, we note that matching can influence attitudes by all of the various mechanisms specified by the ELM.

Individual Differences in Attitudes Toward Stigmatized Groups

The strong need for social inclusion with one's ingroup is thought to be one reason people can develop negative attitudes toward outgroups, even when ingroup/outgroup status is defined by minimal criteria such as what color t-shirt one is randomly assigned to wear (Tajfel, 1970; see also Bergh, Akrami, Sidanius, & Sibley, 2016). Given the power of minimal groups to determine social attitudes, it is not surprising that social psychologists have developed numerous measures to assess individual differences in attitudes toward many actual social groups considered to be stigmatized in some way. These measures include the Pro-Black and Anti-Black Scales (Katz & Hass, 1988); the Heterosexual Attitudes toward Homosexuality Scale (Larsen, Reed, & Hoffman, 1980); and the Ambivalent Sexism Inventory (Glick & Fiske, 1996). As we have argued for other variables, individual differences in attitudes toward minority groups can influence attitude change through multiple processes depending on the elaboration likelihood. For example, under relatively low thinking conditions, high (vs. low) prejudiced individuals are more likely to reject, out of hand, persuasive messages originating from stigmatized sources. Of course, under high-thinking conditions, the same matching between a stigmatized source and a prejudiced person would operate through other processes.

Having described the multiple roles that SE could potentially play in persuasion, we next describe two additional lines of research that are relevant to SE and persuasion. Specifically, we examine how SE is consequential for attitudinal ambivalence and consistency effects. First, it is important to note that, although most research on self-esteem has examined this individual difference using explicit self-report measures (e.g., Rosenberg, 1965), more recent studies have assessed self-esteem with implicit or automatic measures (Cuyper, DeHouwer, Vastlelandt, Perugini, Pieters, Claes, & Hermans, 2017; see Gawronski & Brannon, this volume). Interestingly, these two ways of assessing SE do not typically correlate highly (Jordan, Logel, Spencer, Zanna, & Whitfield, 2009). When implicit and explicit measures of an attitude object are discrepant, this produces a state of implicit ambivalence (Petty et al., 2006) that is uncomfortable (Rydell et al., 2008) and leads to efforts to reduce the discomfort such as by processing information related to the discrepancy (Briñol et al., 2006; Johnson et al., 2017). In one study testing the notion that explicit-implicit discrepancies in self-esteem could lead to enhanced information processing of self-relevant information (Briñol et al., 2006, experiment 4), undergraduates' self-evaluations were assessed with both automatic (cf., Greenwald & Farnham, 2000) and deliberative (Rosenberg, 1965) SE measures. Then, the absolute value of the difference between the two standardized measures was calculated as the index of discrepancy. Next, participants were exposed to either a strong or weak message about eating vegetables that was framed as self-relevant or not. As predicted, this study revealed that, when the message was framed as self-relevant, the extent of explicit-implicit SE discrepancy interacted with argument quality to affect attitudes toward vegetables. The greater the discrepancy in SE, the more participants differentiated strong from weak arguments. However, when the same strong and weak messages were framed as irrelevant to the self (i.e., the message was said to be about the properties of vegetables rather than one's health), SE discrepancy did not interact with argument quality to predict attitudes. This suggests that explicit-implicit discrepancies in self-esteem do not lead to motivation to process all information—only when the discrepancy is salient. Furthermore, the direction of the discrepancy (i.e., was implicit SE greater or less than explicit) did not further moderate the results.

Second, beyond implicit ambivalence, SE has also been studied in the domain of attitudes relevant to keeping consistency (balance) among mental representations (Heider, 1958; Greenwald et al., 2002). In research particularly relevant to persuasion, Horcajo, Briñol, and Petty (2010) showed that asking participants to think about persuasive messages can lead to associated changes not only on explicit measures but also on implicit measures presumably through a process of spreading activation guided by the attainment of psychological balance. In one study in this line of research, participants were asked to generate arguments in favor of or against including more vegetables in their diet, linking vegetables to either good or bad. Then, they completed an implicit measure (IAT) designed to assess the automatic link between vegetables and the self as well as a measure of implicit SE (IAT). Consistent with the idea of implicit balance (Greenwald et al., 2002), participants showed stronger automatic self-vegetable associations after thinking about the benefits (rather than the negative consequences) of consuming vegetables, and these effects were only apparent for those with high implicit SE (i.e., those who have stronger automatic associations between the self and good). For low implicit SE individuals, there was a nonsignificant tendency for stronger associations between self and vegetables after thinking about the negative consequences of consuming vegetables.

Horcajo and colleagues (2010) provided additional evidence for the implicit balance notion by demonstrating a dynamic relationship among the three concepts under examination (i.e., self, vegetables, and attitudes). Specifically, participants first received false feedback about their self-concept to increase or decrease the perceived linkage between the self-concept and vegetables. That is, after completing a self-vegetable IAT, they were led to believe that their self-concept was strongly associated with either vegetables or animals. Then, the impact of this induction was assessed on an implicit measure of attitudes toward vegetables (i.e., the link between vegetables and its valence), as

Research on group identity (conducted with group-irrelevant topics) has found that individuals tend to be less persuaded by an outgroup than by an ingroup member overall (Mackie, Worth, & Asuncion, 1990). Importantly, Fleming and Petty (2000) reported that individual differences in the level of identification with the ingroup moderates this cue effect, with more extreme attitudes reported for those high in identification with the ingroup (as measured by the identity subscale of the Collective SE scale; Luhtanen & Crocker, 1992; see also Gómez et al., 2011). Individual differences in prejudice and group identity can also affect attitudes under relatively high-elaboration conditions, but the process would be different such as by biasing thinking (Fleming & Petty, 2000). Furthermore, we speculate that, under high-elaboration conditions, individual differences in prejudice might not only affect attitudes by influencing the direction of the thoughts, but also by impacting the confidence with which those thoughts are held. For example, if a message recipient learned that a message they just processed was written by a person toward whom they felt prejudice, this could lead to doubt in the thoughts generated much like when people learn after processing that a message came from a source low in credibility (Tormala, Briñol, & Petty, 2007).

When elaboration is not constrained to be low or high, individual differences in prejudice can affect attitude change by influencing how much thinking a minority source elicits. For example, Sheppard and Bodenhausen (1993) found that women processed a message from a homosexual source more than from a heterosexual source, though the reason was not clear. In a similar vein, White and Harkins (1994) found that message quality (i.e., strong vs. weak arguments) had a greater impact on the attitudes of Caucasian participants when the arguments were presented by a Black or Hispanic source than when presented by a White source. Petty, Fleming, and White (1999) demonstrated that the enhanced processing of stigmatized sources was moderated by individual differences in explicit prejudice toward those stigmatized groups. Specifically, Petty et al. (1999) found that source stigmatization increased message scrutiny only among those who were low in prejudice. Evidence of enhanced processing came from two studies in which participants who either were high or low in prejudice toward a stigmatized source's group were exposed to a persuasive communication attributed to a stigmatized (Black, Experiment 1; homosexual, Experiment 2) or non-stigmatized (White, Experiment 1; heterosexual, Experiment 2) source. In both studies, thoughts and attitudes of low-, but not high-, prejudiced individuals were more influenced by the quality of the arguments presented by a stigmatized than a non-stigmatized source. Petty et al. (1999) interpreted these findings as a case in which low-prejudice individuals scrutinize the message in order to watch out for their own possible prejudice and also for possible unfair treatment of the source by others. Taken together, these studies reveal that individual differences in prejudice can serve multiple roles in persuasion settings. Prejudice and group identity can serve as a peripheral cue under low elaboration, to bias thinking under high-elaboration conditions, and to affect the extent of thinking when it is not already constrained by other variables.

Recently, the notion of implicit ambivalence has been applied to the enhanced processing of stigmatized sources by individuals low in prejudice (Petty, Briñol, & Johnson, 2012). The notion of implicit ambivalence described earlier suggests that it is not *all* low-prejudiced individuals who would scrutinize information from or about Blacks, but mostly those who also tend to be high in automatic prejudice (i.e., they possess an implicit-explicit attitude discrepancy). As noted earlier, when discrepancies exist between explicit and implicit measures of attitudes, implicit ambivalence results, and people feel uncomfortable whenever this discrepancy is activated. This discomfort can motivate people to become vigilant information processors and might account for earlier studies showing that low-prejudiced White individuals are especially likely to scrutinize information from and about stigmatized individuals (Petty, et., 1999; Fleming, Petty & White, 2005). Notably, the implicit ambivalence hypothesis also makes a unique prediction that people whose explicit prejudice is high and their implicit is low should also feel discomfort due to this discrepancy and more carefully process information if the discrepancy is salient.

In a recent series of studies examining the implicit ambivalence account, Johnson, Petty, Briñol, and See (2017) measured explicit racial attitudes with the Katz and Hass (1988) anti-Black scale and implicit attitudes with the Black-White IAT (Greenwald et al., 1998). The results showed that, as the discrepancy in participants' implicit and explicit racial attitudes increased, they engaged in more processing of a message on a topic relevant to African Americans (e.g., advocating a program to hire more African American faculty at their university) and on a racially irrelevant topic if the source of the message was African American rather than White. Because the direction of the discrepancy did not further qualify the results, this means that, among participants who were relatively low in their explicit prejudice, it was primarily those who were relatively high in implicit prejudice who engaged in greater scrutiny, but among participants who were high in explicit prejudice, it was those who were low in implicit prejudice who engaged in the greatest scrutiny. This result suggests the parsimonious conclusion that the enhanced information processing with increasing implicit-explicit attitude discrepancies may result from the discomfort that accompanies implicit ambivalence (see Petty et al., 2006; Rydell et al., 2008).

This recent research also offers a unique perspective on various theories postulating that people are often motivated to correct for their internalized prejudice. According to several formulations (e.g., Dovidio & Gaertner, 2004; Dunton & Fazio, 1997), some White individuals have automatic negative reactions to Blacks but have egalitarian values or desires not to be prejudiced that cause them to discount their activated negativity and report positivity on explicit measures. This analysis assumes that the causal sequence is that people have pre-existing automatic attitudes that are negative, some pre-existing motive to control these reactions, and these interact to determine a *constructed* (and potentially false or socially desirable) deliberative positive attitude. Although this is perfectly plausible and certainly can occur, the studies described above suggest another possibility—that motives can follow from pre-existing positive and negative associations, with one of them negated. That is, some people may recognize that they have both existing positive and negative associations, with the latter being unwanted or at least not endorsed. Because they find the latter to be inappropriate or wrong, they develop a motive to control these negative reactions. Conversely, some individuals may have an automatic positive association, and reject that in an attempt to form a more accurate or correct impression, and thus endorse a relatively more negative evaluation. Thus, rather than a positive constructed explicit attitude following from the interaction of negative automatic attitudes and a motive to control them, it could be that a motive to control negative reactions follows from the presence of both positive and negative associations to a minority group with one of the two being rejected while the oppositely valenced association is endorsed. Based on this possibility, future research should explore the role of motives to inhibit prejudice and how these motives potentially fit with the implicit ambivalence framework. Dovidio, Schellhaas, and Pearson (Volume 2) offer additional suggestions.

Individual Differences in Motivations to Control for Prejudice

As just noted, there are not only individual differences in evaluations of minority groups, but also differences between people in their chronic motivations to control for prejudice toward these groups. Among these measures, are the Motivation to Control Prejudiced Reactions scale (Dunton & Fazio, 1997); the Internal and External Motivation to Respond without Prejudice scale (Plant & Devine, 1998); and the Humanitarianism-Egalitarianism and Protestant Ethic Scales (Katz & Hass, 1988). These instruments are effective in predicting differences in public and private endorsement of stereotypes as well as motivation to correct one's social judgments.

Contemporary models that consider the interplay between relatively automatic and controlled processes involved in prejudice (e.g., Devine, Monteith, Zuwerink, & Elliot, 1991; Dovidio, 2001; Fazio, 1990) are consonant with the ELM notion that some of these processes are more or less likely

to occur than others depending on the motivation and ability to elaborate. For example, when elaboration likelihood is relatively low, instead of gathering additional information, individuals motivated to correct for prejudice might rely on heuristics and peripheral cues. Under such circumstances, these individuals might correct simply by activating their heuristic-belief "I am an egalitarian person" (Moskowitz, Gollwitzer, Wasel, & Schaal, 1999). At the other extreme of the continuum, when elaboration likelihood is relatively high, motivation to correct for prejudice might influence attitudes by biasing the direction of the thoughts. Consistent with this idea, when low-prejudice individuals were highly motivated to correct for the generation of prejudice-related responses, their thoughts and attitudes have been found to be non-stereotypic (Monteith, 1993). As we described for other variables so far, when the likelihood of thinking is high, individual differences in the motive to control for prejudice might influence attitudes also by inducing correction processes. Indeed, some research suggests that people who are high in their motivation to control prejudice can more easily be trained to modify their implicit negative reactions toward Blacks (Johnson, Kopp, & Petty, 2018). As described earlier, for a person to correct for the activation of prejudice or a stereotype, he or she must believe that a bias is operating, be motivated to make corrections, and have naïve theories about the direction and magnitude of the biasing effect of stereotypes on responses (Wegener & Petty, 1997). There is ample evidence in the domain of prejudice that can be easily interpreted as a case of correction for unintended effects of activated stereotypes on attitudes under high-elaboration conditions (e.g., Devine et al., 1991; Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Dovidio et al., Volume 2). However, when such corrections become highly practiced, as they might for individuals high in their chronic motive to control prejudice, they can be executed automatically (Maddux et al., 2005).

Summary

The large number of individual difference constructs examined in persuasion have been organized into several meaningful categories of variables that can influence attitudes through several different processes articulated by the ELM. This structural frame relied on four basic and widely used motives of human nature: knowledge, consistency, self-worth, and social approval (e.g., Fiske, 2004; see also Earl & Hall, this volume). The main psychological processes by which specific individual difference variables within those four motives can influence attitude change are by the variable (a) serving as evidence for a proposal, (b) affecting the extent of thinking about the issue, (c) affecting the direction of thinking (biasing thoughts), (d) influencing the type of metacognitions that accompany thinking, and (e) impacting the selection and use of simple judgment cues and strategies.

By grouping into meaningful categories both the wide variety of individual differences studied and the underlying psychological processes of persuasion, we aimed to provide a useful guide to organize and facilitate access to key findings in this literature. Individual differences in non-motivational variables, such as demographic, ability, and cultural factors have been considered elsewhere (Briñol & Petty, 2005; see also Shavitt, this volume). A notable feature of the literature reviewed so far is that individual differences variables have been studied in isolation. In the remainder of this chapter, we examine how individual differences can interact with aspects of the situation to influence persuasion by the same psychological processes that guided our earlier discussion.

Part IV: Matching Different Variables

It is important to note that individual difference variables can be studied not only in isolation but also in combination with other variables. In particular, recipient variables can interact with source, message, and context variables to produce unique effects. For example, earlier in this chapter, we saw how research had considered how people who tend to chronically form attitudes on the basis

of affect or cognition reacted to messages that had an affective or cognitive focus (i.e., individual difference in attitude basis matched to a message type). Similarly, we saw that studies have examined how people who vary in their level of explicit or implicit racial prejudice react to information presented by a Black or a White communicator (i.e., individual differences in prejudice matched to a source type).

There are many examples in the literature of matching to personality variables. For example, in one study, messages were matched to the Big 5 personality dimensions, and it produced an increase in persuasion. Specifically, Hirsh, Kang, and Bodenhausen (2012) personalized persuasive appeals and found more attitude change for matching arguments to each of the Big 5 dimensions than mismatching (e.g., using words related to openness was more persuasive for those with higher scores on openness to experience; using words related to extroversion was more persuasive for extroverts than introverts, and so forth). For an additional example using the Big 5 in the domain of attitude changes through evaluative conditioning, see Vogel, Hütter, and Gebauer (2017).

In addition to the Big 5, the individual difference variables that have been matched to particular messages or sources in persuasion paradigms include: need for cognition (See, Petty, & Evans, 2009); sensation seeking (Palmgreen, Stephenson, Evertt, Baseheart, & Francies, 2002); independent versus interdependent self-construals (Lee, Aaker, & Gardner, 2000); extraversion (Wheeler et al., 2005); ideal versus ought self-guides (DeMarree, Wheeler, Briñol, & Petty, 2014; Evans & Petty, 2003); one's political ideology (Feinberg & Willer, 2015; Kidwell, Farmer, & Hardesty, 2013; Wolsko, Ariceaga, & Sieden, 2016; Ludeke & Rasmussen, 2016); dominance versus submission (Moon, 2002); sensitization versus repression (DeBono & Snyder, 1992); locus of control (Williams-Piehota, Schneider, Pizarro, Mowad, & Salovey, 2004); rational versus experiential cognitive style (Pacini & Epstein, 1999); stage of change (Prochaska, DiClemente, & Norcross, 1992); self-schemas (Brock, Brannon, & Bridgwater, 1990), and individual differences in construal level (Cesario et al., 2004; Fujita, Eyal, Chaiken, Trope, & Liberman, 2008).

In addition to personality variables, a persuasive appeal can be matched to individual differences in socio-demographic variables. For example, research has shown that matching the gender of the message source to that of the recipient can increase the persuasiveness of the message (see Fleming & Petty, 2000). Matching to the interests of one's age can also influence persuasion. For instance, Huhman and colleagues (2010) examined the effectiveness of exercise advertisements in order to persuade children to be more physically active. For half of the sample, children, ages 9–10, the ads matched the children's interests (e.g., jumping on a trampoline), whereas for the other half of the children, ages 11–13, the ads did not. After a year of broadcasting this message on national television, the younger children liked and engaged in physical activity to a greater extent than did the older ones (see also Pratkanis & Gilner, 2005). Beyond gender and age, Herek and colleagues (1998) conducted an investigation on cultural matching in which it was found that messages matching a participant's specific ethnic identity were more effective in influencing the evaluation of an HIV-related message than were multicultural messages (for reviews on different types of matching, see Petty, Wheeler, & Bizer, 2000; Maio & Haddock, 2015; Salovey & Wegener, 2003).

Although space does not allow us to provide a comprehensive review of all personality matching studies, in this section, we provide some illustrative examples of how matching individual differences to other aspects of the persuasive situation can influence attitudes via the mechanisms specified by the ELM. In considering research on matching, it is important to note that a source or message that matches with one aspect of a person might mismatch with another aspect (e.g., McCann, 2011). The effect on persuasion is likely to depend on which matching aspect has more relative accessibility, importance, and confidence. In any case, when variables match some aspect of oneself, according to the ELM, the match produces attitude change by one of several discrete processes that we have already articulated. That is, matching can influence attitudes by serving as a peripheral cue when elaboration is low, by biasing thoughts, serving as an argument, or affecting thought validation

when elaboration is high, and by affecting the amount of information processing when elaboration is not constrained by other variables. As our key example of multiple roles for matching variables to individual differences, we focus on the personality trait of self-monitoring (Snyder, 1974). We do so because, to date, this individual difference has been studied with regard to more possible roles than any other individual difference measure.

Self-Monitoring

High self-monitors are oriented toward social approval whereas low self-monitors are more motivated to be consistent with their internal beliefs and values (i.e., self-consistency; Snyder, 1979). For example, recent research has shown that individuals with low (vs. high) scores in self-monitoring are more likely to rely on their attitudes as guides to their behavior (Paredes et al., 2015). Much research on self-monitoring has shown that messages can be made more effective by matching the message to a person's self-monitoring status. For example, in one early study, Snyder and DeBono (1985) exposed high and low self-monitors to advertisements for a variety of products that contained arguments appealing either to the social-adjustment function (i.e., describing the social image that consumers could gain from the use of the product) or to the value-expressive function (i.e., presenting content regarding the intrinsic quality or merit of the product). They found that high self-monitors were more influenced by ads with image content than ads with quality content. In contrast, the attitudes of low-self monitors were more vulnerable to messages that made appeals to values or quality. As reviewed above, many studies followed this one by showing that matching a message to an individual difference can enhance persuasion.

However, as emphasized in our review, according to the ELM, matching messages to people can influence attitudes by one of several processes. For example, when the circumstances constrain the likelihood of elaboration to be very low, a match of message to a person characteristic is more likely to influence attitudes by serving as a simple cue (e.g., DeBono, 1987). That is, even when the content of the message is not processed carefully, if a source simply asserted that the arguments are consistent with a person's values, a low self-monitor may be more inclined to agree than a high self-monitor by reasoning, "if it links to my values, it must be good." In contrast, when thinking is set at a high level, then matching can bias the direction of thinking. Indeed, some research suggests that high self-monitors are more motivated to generate favorable thoughts to messages that make an appeal to image rather than an appeal to values (e.g., Lavine & Snyder, 1996). Matching a message to self-monitoring status is likely to work by biasing thoughts when matching becomes salient before (rather than after) thinking and when arguments are relatively ambiguous and thus open to multiple interpretations (Chaiken & Maheswaran, 1994).

Beyond serving as a cue when thinking is low or biasing thoughts under high-elaboration conditions, matching can influence attitude change by other mechanisms under other circumstances. For example, when thinking is not already constrained by other variables to be high or low, matching a message to a person can increase thinking about the message. If this were the mechanism, matching would only enhance persuasion if the arguments were strong but could have the opposite effect if the arguments were weak. In one study relevant to self-monitoring, Petty and Wegener (1998) matched or mismatched messages that were strong or weak to individuals who differed in their self-monitoring. In this research, high and low self-monitors read image (e.g., how good a product makes you look) or quality (e.g., how efficient a product is) appeals that contained either strong (e.g., beauty or efficacy that last) or weak arguments (e.g., momentary beauty or efficacy). The cogency of the arguments had a larger effect on attitudes when the message matched rather than mismatched the person's self-monitoring status indicating that matching enhanced processing of the message arguments. Once again, matching affects elaboration when thinking is not already constrained by other variables, and therefore, it is free to vary.

Matching can not only influence elaboration under unconstrained thinking conditions, but also affect validation processes when people are motivated and able to think about their thoughts and the matching becomes salient after thought generation. For example, Evans and Clark (2012) matched individuals who varied in their scores on the self-monitoring scale to whether a communication source was high in either expertise or attractiveness. Prior research on self-monitoring had shown that people high in self-monitoring are particularly interested in image-related information and thus are drawn to attractive sources whereas people low in this trait are particularly influenced by quality or merit information and are particularly drawn to expert sources (DeBono & Harnish, 1988). The critical result of the Evans and Clark study was that high self-monitors relied on their thoughts to the message more when they learned after processing it that the source was attractive rather than expert, but low self-monitors relied on their thoughts to the message more when they learned the source was expert rather than attractive. Thus, when message recipients learned about the message source after they had processed a message, matching the source to the recipient type increased thought use.

In summary, the accumulated research suggests that matching of a message to some characteristic of the recipient can influence attitudes by serving multiple roles depending on the circumstances. Consistent with the ELM, the psychological processes mediating the effects of matching on attitude change fall into a finite set that operate at different points along an elaboration continuum.

Matching Can Impact Thinking: New Directions

As noted, one of the processes by which matching can influence persuasion is by affecting the amount of thinking about the message, especially when elaboration is unconstrained and is free to vary. Although the impact of matching on increasing message processing has been shown for a good number of individual difference variables, there are numerous other kinds of matching that could be explored. For example, in much persuasion research, it is assumed that the dominant motivation of people in dealing with a persuasive message is to form an accurate view of the world (e.g., those high in need for cognition). However, other goals are possible such as when people try to process messages with the goal of being entertained and transported away from themselves (e.g., those high in transportation; Green et al., 2004; Green & Brock, 2000). One could make the straightforward prediction that high versus low need for cognition would increase elaboration (i.e., argument quality effect on attitudes) especially in situations that match the dominant motive of those high in NC (i.e., in situations that facilitate an epistemic or accuracy mindset). However, high versus low need for cognition might decrease elaboration in hedonic situations and mindsets. This prediction is consistent with previous research showing that including cartoons, jokes, and other rhetorical features in a persuasive communication can increase elaboration for individuals low in need for cognition but disrupt elaboration for those high in need for cognition (Cline & Kellaris, 1999; Hagtvedt, 2015; Khan & Tormala, 2012; Petty, Cacioppo, & Heesacker, 1981; Zhang, 1996a; 1996b).

In addition to exploring new kinds of matching, future research should also consider additional moderators of matching effects. For example, research suggests that, when a persuasive message takes a surprising position, it elicits more information processing than when the position is expected (Baker & Petty, 1994; Maheswaran & Chaiken, 1991; Ziegler, 2010). This effect might especially be true for individuals with strong feelings of knowing, and with a sense of epistemic authority (such as those scoring high in dogmatism and narcissism), and perhaps for individuals with high need for consistency, high need for closure, and low tolerance to uncertainty. That is, those with a chronic sense of knowing or high need for consistency might be especially rattled by messages that are surprising in some way leading to more scrutiny in order to restore the sense of knowing and consistency.

New research should also explore instances in which matching might lead to decreased rather than increased information processing. As one example, consider the possibility that different people

might tend to focus on different appraisals when experiencing the very same psychological situation. For instance, the emotion of anger tends to be associated with both a feeling of certainty and a feeling of unpleasantness (Moors, Ellsworth, Scherer, & Frijda, 2013; Tiedens & Linton, 2001). Appraisals related to *certainty* might be especially salient for individuals for whom the knowledge motive is salient (e.g., those high in their need for cognition) whereas appraisals relevant to *pleasantness* might be especially salient for other individuals (e.g., those high in their need for affect). Individuals high in need for cognition might ask themselves how certain/doubtful does this emotional experience make me feel? In contrast, individuals high in need for affect might ask themselves instead how pleasant/unpleasant does this emotional experience makes me feel? Similarly, appraisals related to certainty might be especially salient for individuals high in their prevention-focus whereas appraisals relevant to pleasantness might be especially salient for individuals high in their promotion-focus (Leonardelli, Lakin, & Arkin, 2007).

These differences in appraisals can be important because appraisals are critical in understanding how incidental emotions influence persuasion by affecting elaboration. We have recently proposed a *differential appraisals hypothesis* arguing that whether complex emotions such as anger, disgust, surprise, and awe lead to more or less thinking about the persuasive message can depend on the kind of appraisal that is highlighted (Briñol, Petty, Stavvaki, Lamprinakos, Wganer, & Díaz, 2018; Petty & Briñol, 2015). Briefly, if an individual focuses on the confidence that accompanies an emotion (e.g., because they are high in need for cognition or high in prevention-focus), they may feel certain about their own views and avoid processing new information. In these circumstances, complex emotions such as anger and disgust that link to certainty appraisals would be associated with reduced argument quality effects compared to emotions such as surprise or awe that link to doubt appraisals (e.g., Bodenhausen, Sheppard, & Kramer, 1994; Moons & Mackie, 2007). On the other hand, if individuals were focused on the unpleasantness of the emotion (e.g., because they are high in need for affect, or high in promotion-focus) and came to view their current opinions negatively (rather than more confidently), then they would elaborate information more extensively. In these circumstances, anger and disgust would lead to enhanced argument quality effects relative to surprise and awe (e.g., Tiedens & Linton, 2001).

In closing this section, it is important to point out one more time that, in addition to affecting elaboration when thinking is not constrained, matching can influence attitudes by different mechanisms under other circumstances. As described throughout this chapter, matching can influence attitudes by serving multiple roles depending on the circumstances (for additional reviews on matching, see, e.g., Avnet, Laufer, & Higgins, 2013; Briñol & Petty, 2006; Maio & Haddock, 2015; Salovey & Wegener, 2003; Teeny et al., 2017).

Matching to Generate Arguments

All of the research reviewed so far on matching has examined how matching a source or message to one's personality can influence response to externally generated messages. One new avenue for exploring matching is its relation to argument generation rather than reception (Teeny et al., 2017). Just as prior research has shown that matching can influence the number and the content of thoughts people generate in response to persuasive messages generated by others, matching can also influence the thoughts consumers themselves generate in the absence of persuasive messages. Shavitt, Lowrey, and Han (1992) conducted the first research on this subject. These researchers presented high and low self-monitors with consumer products that could be ambiguously categorized as either utilitarian or social identity based (e.g., watches and sunglasses). Participants were then asked to generate and design ads that would "explicitly appeal to themselves." Paralleling prior matching effects, low self-monitors constructed ads composed mostly of utilitarian arguments, whereas high-self monitors made ads composed mostly of social identity arguments (see also Shavitt, Nelson, & Yuan, 1997).

Of course, matching can influence self-persuasion for many other individual difference variables beyond self-monitoring. For example, Resch and Lord (2011) found that, when participants high in need for cognition used epistemic strategies (like reinterpreting thoughts, and other cognitively demanding methods; Maio & Thomas, 2007), it resulted in greater self-persuasion. Similarly, when participants high in self-control used teleological strategies (a task requiring self-control to maintain active thought suppression; Tangney, Baumeister, & Boone, 2004), it resulted in greater self-persuasion. Together, these studies suggest that people tend to generate arguments that match their own personality or cognitive style and this can be effective in producing self-persuasion.

Correcting for Matching

People might or might not be aware of matching procedures and matching effects. When they are aware that matching is taking place, they might appreciate the effort of others to personalize their communications to accommodate them or might dislike the matching approach. If people are made aware of the potential bias induced by matching and they do not want it to occur, they may be prone to correct for it. For example, if a person recognizes that an ad is being specifically matched to him or her to increase persuasion, s/he may intentionally correct in the direction opposite to the appeal's presumed intention. In one study examining this possibility, Cesario, Grant and Higgins (2004) manipulated whether or not a persuasive appeal for an after-school program matched the individual's strategy for goal pursuit (i.e., either promotion-focused or prevention-focused) and whether or not the individuals were made aware of the biasing effects of matched messages. Although the researchers found the typical positive effect for matching for the naïve participants, once they were made aware of the effect by highlighting the source for their feelings of "rightness" (i.e., the matching of the message, not the message itself), participants corrected for their bias and actually found the *mismatched* message more persuasive.

Furthermore, other research has revealed that personalized messages may not always be more effective. At least, favorable personalization effects are subject to moderation by external factors (as meta-analyzed in Noar et al., 2007). For example, when people do not see a legitimate reason for why their personal information was used in a highly personalized message, message effectiveness drops (White, Zahay, Thorbjørnsen, & Shavitt, 2008) as would be expected from correction processes. Similarly, highly personalized messages may not generate desirable responses from individuals who possess interdependent or collectivist tendencies (Li, Kalyanaraman, & Du, 2011; Kramer, Spolter-Weisfeld, & Thakkar, 2007; see Shavitt, this volume). Moreover, when people anticipate feelings of regret associated with personalized products and appeals, they may select standard ones instead (Syam, Krishnamurthy, & Hess, 2008).

Summary and Conclusions

In this chapter, we have focused on the processes by which individual differences can influence attitudes and persuasion. In our previous review of this topic (Briñol & Petty, 2005), we highlighted the classic findings for many individual differences variables. Our goal here was not to reiterate these findings, but to expand them in several ways. Thus, we introduced a new section on the role of individual differences relevant to attitudes and attitude strength (e.g., attitude confidence, attitude stability). This new section also highlighted the distinction between affective versus cognitive basis of attitudes, and between implicit and explicit measures of attitudes, and described how individual differences are relevant to those distinctions.

Another novel aspect that received attention in the present review is the idea that specific variables can interact with each other in affecting persuasion processes and outcomes. To highlight this interplay, the present review explored the multiple roles by which matching to personality could

influence persuasion. Importantly, matching can influence attitudes by the same fundamental processes described throughout this review where individual differences were examined in isolation rather than in combination with other variables. That is, the main psychological processes by which any variable, regardless of whether it operates in isolation or in combination, can influence attitude change are by the variable (a) serving as evidence or an argument for a proposal, (b) affecting the extent of thinking about the issue, (c) influencing the direction of thinking, (d) impacting the meta-cognitions that accompany thinking, and (e) determining the selection and use of simple judgmental cues and heuristics. We have also noted that matching individual differences to situational factors is not only important in determining responses to receiving persuasive messages, but is also relevant within the realm of self-persuasion.

Our review of the literature on individual differences and persuasion was structured in a framework that relied on four basic motives of human nature: knowledge, consistency, self-worth, and social approval. The current review provided illustrations of the relatively new developments in persuasion for each of these motives. Of course, one could also consider additional human motives relevant to attitudes and persuasion. For example, people differ in their dispositional "sense of power" (Anderson, John, & Keltner, 2012) as well as their desire or need for power (McClelland, 1975). As noted, individual differences in feelings of power are important because the power associated with, or experienced by, the source or the recipient of a message affects individuals' evaluative judgments through the same key processes described in this review. Also importantly, as was the case with other constructs described throughout this review (e.g., self-esteem, prejudiced attitudes, shyness), feelings of power can also vary within the same individual as a function of whether it is assessed with an explicit or an implicit measure, and discrepancies between those assessments can be consequential (Brunstein, Schultheiss, & Grässmann, 1998). As described throughout, explicit-implicit discrepancies in power can lead individuals to a state of implicit ambivalence associated with increased information processing and subsequent attitude change (at least when the message involves power in some way, Briñol et al., 2006; Johnson et al., 2017). Also feelings of power can be important to persuasion because matching the power of the source and the recipient can be consequential for how people communicate or process persuasive arguments with respect to their valence, but also what they consider to be an argument, and what kinds of arguments are valued (Rucker & Galinski, 2009).

As is the case with the other motives covered in this review, the meaning that people associate with feelings of power can vary across individuals. For most people in most situations, possessing power would have a positive association (e.g., confidence, agency, control, mastery). As might be expected from the positive meaning of power, research suggests that those who possess power often strive to defend and maintain it (Mead & Maner, 2012) whereas those who lack power often strive to obtain it (Rucker & Galinsky, 2008). However, the meaning associated with power can vary across individuals, situations, and cultures. For example, power can be associated for some individuals with corruption and harassment and therefore be perceived as undesirable or could be associated for others with compassion and helping others rather than dominating them (Chen, Langner, & Mendoza-Denton, 2009; Chen, Lee-Chai, & Bargh, 2001). Similarly, power can be perceived to be legitimate or illegitimate (Lammers, Galinsky, Gordijn, & Otten, 2008) or stable versus unstable (Sligte, de Dreu, & Nijstad, 2011). These individual differences in associations with power can have important consequences for attitudes and persuasion. For example, when serving as a simple cue under low thinking conditions, power affects attitudes and judgments in accord with its positive or negative connotation for the target of influence and thus can *either* increase or decrease persuasion depending on whether the source or the recipient is more powerful, the meaning of power ascribed (see Briñol, Petty, Durso, & Rucker, 2017, for a review on the multiple processes by which power affects persuasion).

We have relied on motives as an organizing scheme in this review because of their importance in guiding social behavior. Of course, individual differences in non-motivational variables, such as

demographic, ability, and cultural factors are also relevant for attitudes and persuasion. Although we have made some specific mentions of those variables in the present review (e.g., matching persuasive messages to cultural values, to gender identity, or to the Big 5), we dedicated more attention to these factors in our previous review (Briñol & Petty, 2005), with an emphasis on subjective perceptions and naïve meanings that often accompany these variables.

One aspect of both personality and persuasion process that we have highlighted in this review is the role of confidence. As described, individual differences in trait self-confidence predict the correspondence between attitudes and behavior (attitude strength) and between attitudes and relevant thoughts (self-validation). Moreover, felt confidence that comes from other sources (not just individual differences) is a fundamental determinant of thought use and thus persuasion (Briñol & Petty, 2009). Just as thoughts and attitudes held with certainty are more predictive of various judgments and behaviors (see DeMarree, Petty, & Briñol, 2007), one could argue that considering confidence is important in order to understand the functioning and stability of individual differences and, therefore, relevant for identifying the most valid self-relevant dimensions to which persuasive treatments should be matched. In accord with this notion, recent research has demonstrated that personality inventories are especially predictive the greater the confidence that people have in their responses to them. For example, need for cognition scores were more stable over time, and need to evaluate scores were more predictive of behavior when people reported having confidence in their responses to those scales (Shoots-Reinhard, Petty, DeMarree, & Rucker, 2015). Thus, the predictive utility of the individual differences reviewed in this chapter might be increased by including measures of confidence in those scales.

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