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What Do I Think About Who I Am? Metacognition and the Self-Concept

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INTRODUCTION

The self-concept plays an important role in how people think about and act in their social worlds (Baumeister, 1998). A person's self-concept is a representation of his or her own characteristics, including traits, identities, relationships, and goals (DeMarree, Petty, & Briñol, 2007a; Swann & Bosson, 2010), and is inextricably tied to his or her other mental representations (Greenwald & Pratkanis, 1984). Because of the importance that self-views are thought to play in human cognition, it is crucial for psychologists to understand the nature, origins, and consequences of these self-views.

In this chapter, we focus on the role of metacognitive processes in advancing psychologists' understanding of the self. In so doing, we address some of the most important questions relating to the self. Do a person's self-views matter and, if so, when, why, and how? Where do self-views come from? Is the self the same across cultures? How are self-views maintained? Metacognitive factors offer novel insight into these questions and others.

Metacognition refers to people's thoughts about their thoughts or thought processes (Dunlosky & Metcalfe, 2009; Petty, Briñol, Tormala, & Wegener, 2007; see also Briñol & DeMarree, Chapter 1, this volume). The first-order thoughts (primary thoughts) that are the focus of the current chapter are related to a person's self-concept or self-evaluation (e.g., I am shy; I am a good person), whereas the second-order thoughts (secondary thoughts) are reflections upon these primary thoughts (e.g., "I'm not really sure how shy or how good a person I am."). In this chapter, we discuss how secondary cognitions can influence the strength of a person's self-conceptions, the very nature of the self-concept, and how the nature and

operation of these secondary cognitions can vary across cultures, as well as metacognitive processes related to defending self-views.

SELF-STRENGTH

People's beliefs about themselves vary in a number of important ways: Some self-beliefs are very consequential (e.g., they predict people's behavior and thought patterns), whereas others are not. Some self-beliefs are long-lasting and resistant to change, whereas others are unstable and easily shifted. These characteristics represent the strength of a person's self-views. Strong self-views, like strong attitudes (Petty & Krosnick, 1995; Visser & Holbrook, Chapter 2, this volume), are resistant to change, stable over time, and predictive of behavior and thoughts (DeMarree, Petty, & Briñol, 2007b; Krosnick & Petty, 1995). A number of properties of self-views predict their strength, including several metacognitive variables.

Although much of the research on self-strength has used concepts also studied in the attitudes literature, such as certainty and importance (for reviews, see Petty & Krosnick, 1995; Visser, Bizer, & Krosnick, 2006), some unique strength variables (e.g., self-concept clarity) have been examined primarily by self researchers. In this section, we briefly introduce several metacognitive self-strength variables and discuss the consequences of each. Before proceeding, we should note that the term "strength" does not necessarily connote a positive quality (DeMarree et al., 2007b). For example, someone with "strong" low self-esteem is likely to see the world in a much more pessimistic way than someone with "weak" low self-esteem, potentially opening that person up to depression and other negative outcomes. In other words, strength refers to the durability and impact of the primary cognition (i.e., self-view), which can itself be adaptive or maladaptive to the individual.

Certainty

Metacognitive certainty refers to the extent to which a person is convinced of a belief and views the belief as valid (DeMarree et al., 2007a; Gross, Holtz, & Miller, 1995; Petty et al., 2007). Applied to the self, two people might each believe that they are outgoing (primary thought). However, one of these people might be convinced that this belief is correct, whereas the other person might hold some reservations about the validity of this belief (both secondary thoughts).

When a person holds a self-view with high rather than low certainty, the self-view tends to be more predictive of behavior (e.g., Swann & Ely, 1984) and information processing (e.g., Pelham & Swann, 1989), more stable over time (e.g., Pelham, 1991), and more resistant to change (e.g., Swann & Ely, 1984; for a review, see DeMarree et al., 2007a). For example, Swann and Ely (1984) found that participants who were certain (relative to uncertain) of their level of extraversion behaved more consistently with these self-beliefs during an interaction. Furthermore, when participants interacted with someone whose expectations about their level of extraversion countered their self-beliefs, those low (but not high) in certainty changed their behavior to align with their partner's expectations.

In addition to affecting specific self-views (e.g., beliefs about one's intelligence or attractiveness), certainty has also been found to influence the strength of the thoughts on which these self-views might be based. For example, Briñol and Petty (2003, Study 4) had participants list either three strengths or three weaknesses about themselves using either their dominant or their nondominant hand. Briñol and Petty argued that thoughts written with a person's nondominant hand are more difficult to express and appear shaky and unclear, both of which lower participants' confidence in the thoughts listed, even though the thoughts themselves should be similar (both of these predictions were confirmed by manipulation checks). People who wrote with their dominant hands ultimately evinced self-perceptions congruent with the valence of the thoughts listed (e.g., lower self-esteem if they wrote about their weaknesses), whereas those who wrote with their nondominant hands did not (Briñol & Petty, 2003; see also Briñol, Petty, & Wagner, 2009). Thus, metacognitive confidence in self-relevant thoughts appears to affect the strength of these *thoughts* in much the same way that confidence affects the strength of self-views and attitudes.

Importance

Importance refers to the psychological significance that a person attaches to a given self-view or attitude (e.g., Boninger, Krosnick, Berent, & Fabrigar, 1995; DeMarree et al., 2007b). That is, it is the metacognitive assessment that a self-view (e.g., I am a talented jet-skier) is psychologically meaningful (e.g., it is important to me to be a talented jet-skier). Like certainty, importance has been studied extensively in both the self and the attitudes literatures.

As the importance of self-views increases, their strength also increases. Importantly held self-views, relative to self-views held with low importance, are more stable over time (Pelham, 1991) and more resistant to change (Eisenstadt & Leippe, 1994). They are also more predictive of a person's thoughts and judgments than self-views held with low importance (Pelham & Swann, 1989). For example, in the consumer domain, Aaker (1999) has found that people prefer brands with "personalities" that match their own (e.g., exciting, sophisticated) over brands that do not match—especially when the specific personality dimension is important to their self-concept (for further discussion of metacognition in the consumer domain, see Rucker & Tormala, Chapter 16, this volume).

Self-Concept Clarity

The self-concept clarity (SCC) scale (Campbell et al., 1996) measures the confidence, consistency, and stability of the self-concept and self-evaluation (e.g., "In general, I have a clear sense of who I am and what I am" or "My beliefs about myself often conflict with one another" [reversed]). In a sense, all of a person's self-knowledge represents the primary cognition in this case, whereas clarity is the secondary cognition. The SCC scale was developed to explain differences in the self-conceptions of individuals high and low in self-esteem; the rationale is that the self-conceptions of individuals with high self-esteem are clearer than those of individuals with low

self-esteem (Campbell, 1990; Campbell et al., 1996). Because of this initial focus, most of the research on SCC has examined its relationships to mental health and adjustment (e.g., Bigler, Neimeyer, & Brown, 2001; Vartanian, 2009).

However, some research has also examined strength consequences of self-concept clarity. For example, the SCC scale predicts the stability of self-descriptions over a 4-month period (Campbell et al., 1996) as well as greater day-to-day stability of self-esteem (Kernis, Paradise, Whitaker, Wheatman, & Goldman, 2000). Furthermore, when people encounter negative life events, higher SCC is associated with decreased fluctuations of self-esteem assessed with an implicit measure (DeHart & Pelham, 2007). In addition, because unclear self-views are not useful in guiding judgment and behavior, people with low SCC are more prone to seek out potentially self-informative social comparisons (Butzer & Kuiper, 2006).

Although research on SCC has generated considerable interest in the strength of individuals' self-views, some caution should be exercised when considering clarity findings. First, is clarity truly associated with self-esteem, or are these relationships an artifact of the overly high self-esteem scores found in study samples? Because the self-esteem distribution in college student samples typically lies well above the midpoint of self-esteem scales, self-esteem level becomes confounded with self-esteem extremity. It is possible that people with very low self-esteem (who are underrepresented in these samples) are just as high in self-concept clarity as their counterparts with very high self-esteem. This is important because research on attitudes indicates that extremity itself is associated with strength consequences (Fazio & Zanna, 1978).

Another concern is whether the SCC scale is tapping a new construct or several existing constructs. Inspection of the items reveals some conceptual overlap with the attitude strength construct of subjective (felt) ambivalence, as well as certainty (see Visser & Holbrook, Chapter 2, this volume). Specifically, items such as "My beliefs about myself often conflict with one another" seem to represent the conflict and confusion typically captured by measures of subjective ambivalence (see Priester & Petty, 1996), whereas items such as "In general, I have a clear sense of who I am and what I am" seem more consistent with measures of certainty (see Petrocelli, Tormala, & Rucker, 2007). Finally, SCC is a general assessment of the perceived strength of the self, but might be less useful in predicting the strength of a specific self-view (e.g., it might not predict the stability of one's self-perceived attractiveness).

In sum, clear self-concepts tend to be more stable than unclear self-concepts. Similarly to confidence and importance, SCC predicts stability over time and resistance to change. Although some precautions should be noted when this scale is used, it provides a useful tool for examining the global strength of the self.

Other Variables Associated With Strength

As described previously, metacognitive variables such as certainty, importance, and clarity are associated with strength consequences. However, some nonmetacognitive variables are also associated with strength. For example, the accessibility (DeMarree, Petty, & Strunk, 2010) and objective ambivalence (DeMarree,

Morrison, Wheeler, & Petty, 2011; Riketta & Ziegler, 2007) of self-views have been found to predict strength outcomes (e.g., resistance to change) over and above metacognitive strength variables. Research on attitudes suggests that the many variables associated with strength might be distinct constructs (Krosnick & Petty, 1995) and that they might exert their influence via different psychological processes (Visser et al., 2006) or produce different outcomes (Visser, Krosnick, & Simmons, 2003). For example, accessibility and certainty might both increase the likelihood that a self-view will predict behavior, generally speaking.

However, they might do so in different situations (e.g., moderating the effects of attitudes in spontaneous versus deliberative situations, respectively; Fazio & Towles-Schwen, 1999; Petty et al., 2007) or via different psychological mechanisms (e.g., by affecting hypothesis generation versus validation, respectively; see Kruglanski, 1990). For example, a person whose high self-esteem is accessible might be more likely than someone whose high self-esteem is inaccessible to generate automatically and then test the hypothesis that ambiguous self-information is positive. However, if he or she is being thoughtful, this person might further consider whether his or her initial inclination (that this self-information was positive) is valid or not—something that might be affected by certainty in self-esteem, rather than accessibility. Because of the complexity of potential strength effects in both the attitudes and self domains (DeMarree et al., 2007b), we recommend measuring multiple indicators of strength to lend insight into why and under what conditions specific strength variables will produce specific consequences.

IMPLICIT THEORIES AND THE SELF

The discussion of self-strength focused on metacognitive judgments about the content of specific self-views (e.g., certainty in one's level of extraversion, importance of being intelligent); however, another important type of metacognition involves implicit theories about how the self operates in general. Implicit theories can refer to many different constructs, including our beliefs about how much we have changed (see Schryer & Ross, Chapter 8, this volume) or how we will react to future events (Wilson & Gilbert, 2005). One heavily researched area on implicit theories is Dweck and colleagues' work on self-theories (e.g., Dweck, Chiu, & Hong, 1995).

Self-Theories

Dweck describes two distinct types of self-theories. Entity theorists believe that people's self-attributes are fixed and stable, whereas incremental theorists believe that people's self-attributes are malleable and can be changed through experience and effort. These differences in beliefs have a wide range of implications for self-relevant processes. For example, people with incremental (versus entity) theories of intelligence tend to blame failure on their lack of effort (versus ability), seek out tasks that allow them to improve (versus demonstrate) their abilities, and exert additional effort following failure (Dweck et al., 1995). As a result of these differences

in how entity and incremental theorists approach ability-relevant tasks, differences in the trajectory of scholastic performance have been documented, with incremental theorists demonstrating a positive (improving) trajectory and entity theorists demonstrating a negative (declining) trajectory over time (Blackwell, Trzesniewski, & Dweck, 2007).

Other implicit theories that can be applied to the self-concept include cultural beliefs about the inevitability of memory loss in old age (Levy & Langer, 1994), stereotypes about gender differences in mathematical ability (e.g., Steele & Ambady, 2006), and self-efficacy, or one's confidence in his or her ability to accomplish particular tasks (Bandura, 1982). Thus, people's metacognitive beliefs about how the self operates can have important consequences for performance and motivation.

Perceived Origin of Self-Related Thoughts

Although we have focused our discussion on one type of implicit self-relevant theory, it is worth noting that metacognitive theories can apply to the self in many different ways. For example, they can refer to the origin of self-knowledge and abilities, such as whether a person knows that his or her liking of a restaurant comes from his or her own personal experience or through secondhand information (e.g., a friend's recommendation). They can also refer to whether or not a particular thought is attributed to the self, such as when information active in memory does not have a clear origin (e.g., because it is subliminally primed; see Wheeler & DeMarree, 2009).

When a concept is active in memory and a person does not know why, he or she might try to explain where this thought came from and, in so doing, might mistakenly (or correctly) attribute the thought to the self. In the case of priming, when the prime-activated content is attributed to the self, it can impact self-evaluations and corresponding behavior (Wheeler & DeMarree, 2009). Factors that increase the likelihood that mental contents of ambiguous origin will be perceived as stemming from the self include self-ambiguity (DeMarree et al., 2011; Morrison, DeMarree, Wheeler, & Petty, 2010), self-focused attention (DeMarree & Loersch, 2009), or a combination of these factors (Wheeler, Morrison, DeMarree, & Petty, 2008). For example, people who have ambivalent self-conceptions (e.g., people who view themselves as both aggressive and peaceful) are more likely to change in response to a relevant prime (e.g., African American stereotype) because the self-concept is less clear and people mistakenly attribute the activated mental contents as stemming from the self. In this case, the primary cognition is the one activated by the prime and the secondary cognition is the explanation of its origin.

Of course, if other targets are available, applicable, ambiguous, and salient, the activated mental contents could appear to stem from these other targets (see, for example, Smeesters, Wheeler, & Kay, 2010). This, in turn, can have implications for the self (e.g., "If I am primed with an extremely intelligent person such as Einstein, any activated intelligence will be attributed to that person, so I might view myself as less intelligent by comparison"; see Dijksterhuis et al., 1998; Wheeler & DeMarree, 2009; Wheeler, DeMarree, & Petty, 2007).

CULTURE AND SELF-RELATED METACOGNITION

People's cultural environments have profound influence over the ways that they think about themselves (e.g., Markus & Kitayama, 1991; Spencer-Rodgers & Peng, 2005). For example, people from societies that construe the self in an interdependent fashion (e.g., East Asia) see themselves as inherently interconnected to others, whereas people from societies that construe the self in an independent manner (e.g., North America) see themselves as distinct from others (Markus & Kitayama, 1991). Cultural differences in how the self is defined and in how the self operates in relation to the social environment have a number of implications for self-relevant metacognitive processes. We highlight several of these implications next.

Changes in Primary Cognition of Interest

In many cultures—particularly Western cultures that see the self as an independent entity—global individual differences often provide a meaningful level of analysis to study a person's behavior. For example, a person might be extraverted across a wide range of social settings. However, in many non-Western cultures, a person's traits might instead be constrained to more specific role relationships. This means that a person might be extraverted when with Fred, but introverted when with Diane. Indeed, research has shown that East Asians tend to describe themselves more in terms of their social roles and identities than do North Americans, whereas North Americans tend to describe themselves more in terms of abstract traits (e.g., intelligent, kind) than do their East Asian counterparts (Bond & Cheung, 1983; Rhee, Uleman, Lee, & Roman, 1995).

These cultural differences in how people define themselves might determine what the most relevant primary cognitions are when considering metacognitive processes, such as those that produce strength. For someone whose global self-beliefs are most relevant (e.g., "I am an extravert."), the certainty or importance of this belief might moderate the extent to which this belief predicts future behavior, such as resistance to change (Swann & Ely, 1984). However, for people who define themselves by their social roles and identities, the strength of global self-beliefs (e.g., "I am certain that I am an extravert.") might not help to predict behavior. Instead, the certainty or importance of the more specific, contextually dependent self-beliefs (e.g., "I am certain that I am an extravert when I am with Fred"; see DeMarree et al., 2007a, for further discussion) or the strength of beliefs about one's social relationships rather than individual characteristics (e.g., "I am certain that I fit in with my peer group"; Morrison, Johnson, & Wheeler, in press) might be most relevant.

Changes in Implicit Theories

Entity and Incremental Theories The greater cross-situational consistency of North Americans' self-descriptions relative to those of East Asians can have implications for implicit theories of the self. Given that North Americans tend to describe themselves in terms of general traits and characteristics regardless of

context, they should be more likely than East Asians to believe that the overall self-concept is fixed and stable. By contrast, because East Asians' self-descriptions tend to change according to specific roles and situations, they should be more likely than North Americans to believe that the overall self-concept is malleable.

Supporting this idea, research has shown that North Americans (compared to East Asians) more strongly endorse entity theories of various self-attributes, whereas East Asians (compared to North Americans) more strongly endorse incremental theories of these attributes (Heine et al., 2001). However, East Asians, to a greater extent than North Americans, believe that their social roles are immutable and that they must change themselves to adapt to these roles (Su et al., 1999). Thus, the direction and magnitude of cultural differences in implicit self-theories, much like spontaneous self-descriptions, may depend on how the "self" is defined (i.e., in terms of abstract traits versus social relationships).

Dialectical Thinking Another culture-relevant construct that involves implicit theories is dialectical thinking (Nisbett, Peng, Choi, & Norenzayan, 2001; Spencer-Rodgers & Peng, 2005). Dialectical thinking is a style of thought common in East Asian countries that is derived from the region's philosophical and religious history. Dialectical thinking includes several implicit theories about the nature of the world, including the self. Among these are the principle of contradiction, which holds that two opposing sides (e.g., good and evil) are inherently interconnected; the principle of change, which holds that the concepts used to define any object are likely to change over time; and the principle of holism, which holds that nothing can be understood independently of its context (Nisbett et al., 2001; Spencer-Rodgers & Peng, 2005).

Implicit theories that stem from dialectical thinking styles have a number of implications for the self. For example, people high in dialecticism are more likely to be comfortable with holding contradictory self-beliefs (e.g., believing that they are both introverted and extraverted) and to accept these self-beliefs as part of who they are. By contrast, upon recognizing inconsistencies such as these, people low in dialecticism might make attempts to change their self-beliefs to be more consistent with one another. This leads people high (versus low) in dialecticism to view the self as containing both positive and negative attributes (Spencer-Rodgers, Peng, Wang, & Hou, 2004) or as possessing inconsistent traits (Spencer-Rodgers, Boucher, Mori, Wang, & Peng, 2009).

In addition, as dialecticism increases, so too does variability in participants' spontaneous self-descriptions (e.g., "I am practical" may be juxtaposed with "I am a dreamer"; Spencer-Rodgers et al., 2009). That is, metacognitive beliefs about the nature of the self can vary across cultures and hence can affect the content of people's primary self-beliefs differentially. Another way to frame dialectical thinking is that, as dialectical thinking styles change, people's naïve theories about whether ambivalence is good or bad shift (cf. Briñol, Petty, & Tormala, 2006), with dialectical thinkers being more positive (or at least less negative) about ambivalence and, as such, more likely to rely on and less likely to change ambivalently held self-views. Thus, metacognitive processes have implications for understanding *both* the content and operation of self-knowledge.

METACOGNITION AND SELF-DEFENSE

One theme that pervades the literature on the self is that self-enhancement and self-protection can be powerful motives that guide a person's thought and behavior (Alicke & Sedikides, 2009; Sedikides, 1993; Sedikides & Gregg, 2008). People often seek to boost or restore self-views when their views are threatened. As with the research described before, metacognitive constructs are important to understanding how an individual responds to potential self-related threats, as well as how a person attempts to restore threatened self-views. Next, we discuss some examples of how metacognitive constructs are related to each of these processes.

Contingencies of Worth

One area of research examines the idea that one's self-esteem is often contingent on situational factors. Such contingencies involve the perception (the secondary cognition) that a person's self-esteem (the primary cognition) depends on a specific event, outcome, or perception (e.g., academic performance, social acceptance). Contingencies have been studied in several forms, including contingencies in global self-evaluation (e.g., Kernis, 2003; Kernis & Goldman, 2006; Leary & Baumeister, 2000) as well as in specific domains (e.g., athleticism, intelligence; Crocker, Karpinski, Quinn, & Chase, 2003; Crocker & Wolfe, 2001). Individuals who are contingent in a given domain view attaining success in that domain as critical to their global self-worth (Crocker & Wolfe, 2001). That is, they have metacognitive knowledge about how success or failure in a domain will impact their self-evaluation. This knowledge is assessed using self-report items such as "My self-esteem is influenced by my academic performance" (academic competence contingency) or "My self-esteem would suffer if I did something unethical" (virtue contingency) (Crocker, Luhtanen, Cooper, & Bouvrette, 2003).

Such contingencies lead people to approach and engage in activities that are likely to offer success while they avoid those that will produce failure (Crocker & Knight, 2005; Crocker & Park, 2004; Crocker & Wolfe, 2001). In addition, when faced with success or failure, contingent individuals experience increases or decreases in their state self-evaluation and will often engage in defensive processes to restore feelings of worth (Crocker & Knight, 2005; Crocker & Wolfe, 2001). For example, when interviewed about negative life events (e.g., instances in which they had engaged in self-destructive behaviors), contingent individuals were more verbally defensive during the interview than were noncontingent individuals (Kernis, Lakey, & Heppner, 2008).

In many respects, contingencies of self-worth are similar to the concept of importance discussed before. Recall that importance can refer to the centrality of a specific self-view or attitude to one's overall self-concept. In the case of academic contingencies, for example, individuals might feel that it is important for them to have an extremely high level of intelligence. Thus, their perceived level of intelligence would function as a primary cognition, whereas the importance (contingency) they place on their intelligence would function as a secondary cognition. Research on attitudes has shown that as attitude importance increases, so too

do selective exposure and processing of information relevant to the attitude (e.g., Holbrook, Berent, Krosnick, Visser, & Boninger, 2005; Visser et al., 2003). That is, people with highly important attitudes seek and think more about information that is consistent rather than inconsistent with their attitudes (Holbrook et al., 2005). In research on the self, this might be analogous to contingent individuals approaching and engaging more in activities that are likely to offer success relative to failure (see Crocker & Knight, 2005; Crocker & Wolfe, 2001).

In addition, when attacked, important attitudes produce more defensive thoughts (e.g., counterarguing the attacking message), negative affective reactions, and feelings of irritation than do unimportant attitudes, thus leading to increased resistance to change (Zuwerink & Devine, 1996). Similarly, when inconsistent information in a contingent domain is unavoidable (e.g., a person experiences failure), contingent individuals often experience negative affective states (e.g., Crocker, Sommers, & Luhtanen, 2002) and respond in a defensive manner (Kernis et al., 2008). Thus, much as negative affect can motivate people to reduce inconsistency between their thoughts, feelings, or behaviors (Festinger, 1957; Higgins, 1987, 1997), the negative affect created by a threat to an important attitude or a contingent self-view can initiate similar processes. Because these negative affective reactions appear to motivate self-defense, such reactions could ultimately lead contingent individuals to be more resistant than noncontingent individuals to self-change at the trait level—an idea that has yet to be tested.

By combining perspectives on contingencies of worth and attitude importance, we may be able to gain insight into the mechanisms by which we maintain our evaluations. At the very least, research in these domains shows how a metacognitive judgment about a self-view (“My self-esteem is contingent on my ability in this domain.”) or attitude (“This attitude is important to who I am.”) can have important consequences for a person’s day-to-day life.

Compensatory Confidence

The preceding discussion of contingencies of worth centered on people’s reactions to success or failure in contingent domains and on the ways in which people may seek to restore or maintain their self-evaluations (e.g., when their self-esteem level is threatened by failure). However, people may also experience and react against threats to their self-certainty (for a review of self-related certainty and doubt, see Arkin, Oleson, & Carroll, 2010). Just as individuals, at least in Western cultures, are motivated to have high self-esteem, so too are they motivated to maintain a consistent, coherent, and confident self-concept (Aronson, 1969; Swann, Rentfrow, & Guinn, 2003). As such, when people are induced to feel uncertain about the self, they often compensate by claiming certainty in other areas of their lives—in other words, by claiming the level of certainty that they wish to attain.

Self-uncertainty can be manipulated in many ways, including having participants reflect upon a personal dilemma (McGregor, Zanna, Holmes, & Spencer, 2001), having participants write about the aspects of their lives that make them uncertain (Hogg, Sherman, Dierselhuis, Maitner, & Moffitt, 2007), or giving participants bogus feedback that their personality traits are inconsistent (Stapel &

Tesser, 2001). These inductions of doubt ironically lead people to report greater conviction in their political attitudes (McGregor et al., 2001), identify more strongly with important social groups (e.g., nationality, political party; Hogg et al., 2007), express opinions that they consider to be self-defining (i.e., minority opinions, Morrison & Wheeler, 2010; Morrison, Wheeler, & Miller, 2011), and claim that their material possessions reflect "who they are" (Morrison & Johnson, 2011). These defensive responses to self-uncertainty emerge independently of any differences in mood or state self-esteem triggered by the uncertainty manipulation (McGregor et al., 2001).

People can also be made to feel uncertain about their specific self-attributes, in addition to their overall self-concept. The consequences of these two types of self-uncertainty largely parallel one another. Specifically, both types of uncertainty lead people to exhibit defensive cognitions and behaviors, in an attempt to appear as certain as they would like to be. For example, in a recent set of experiments (Gao, Wheeler, & Shiv, 2009), participants used either their dominant or nondominant hands to write about three instances in which they had demonstrated a particular trait (e.g., intelligence). Participants in the nondominant (relative to dominant) hand condition reported less confidence that they possessed that trait, similarly to participants in the Briñol and Petty (2003) study described earlier. However, participants who had been induced to doubt a specific self-view (versus control participants) were also more likely to select a product that symbolized this self-view (e.g., a palm pilot in the case of intelligence). Ironically, then, participants were most likely to exhibit behavior consistent with their "shaken" self-views. Such behavior (i.e., the product choices) produced subsequent increases in confidence in the self-view; participants who were not given the opportunity to select these products did not exhibit increases in confidence (for a related discussion, see DeMarree et al., 2007a).

Thus, although uncertainty about the self—in general or in relation to specific traits—can produce temporary drops in confidence, it may ultimately trigger a greater (perhaps inauthentic) sense of conviction, so long as people are provided with a means of restoring their confidence in their threatened self-concept. Future research should investigate additional conditions under which uncertainty manipulations produce feelings of doubt versus defensive confidence. For example, it may be that self-uncertainty leads people to report greater conviction only after some time has elapsed (see McGregor & Marigold, 2003; McGregor et al., 2001), similarly to the delayed effects of other types of threat (e.g., mortality salience; Pyszczynski, Greenberg, & Solomon, 1999).

In addition, it is possible that some variables (e.g., social consensus information, repeated experience) are especially likely to produce genuine confidence, whereas other sources (e.g., one's desire to be confident or appear confident to others) are especially likely to produce compensatory or defensive confidence (see DeMarree et al., 2007a). This raises further questions about whether "genuine" and "compensatory" confidence have similar effects on thoughts and behaviors and whether people are aware of the authenticity of their confidence (which is a metacognition about confidence itself). To date, no research has examined these questions.

One important aspect of the research reviewed in this section is that a person's metacognitions are subject to some of the same basic principles that their

primary cognitions are. That is, much like a person might have a desired level of self-esteem, so too might they have a desired level of certainty in that self-esteem (or any other judgment; e.g., Chaiken, Liberman, & Eagly, 1989). As such, people can engage in the regulation of self-related certainty or other metacognitions, and this certainty regulation can in turn affect the operation of a primary cognition.

CONCLUSION

In this chapter, we have reviewed some of the ways that metacognition and metacognitive processes have produced novel insight into the content and operation of the self. We have discussed how metacognitive variables and processes can help determine which self-views predict behavior and thought and are stable over time (i.e., are strong), explain differences in people's beliefs about how the self operates, vary across cultures, and predict and result from self-defensive processes. In each of these cases, it is important to consider not only people's self-characteristics per se, which might predict their judgments and behaviors, but also what they think about these characteristics and the very nature of their self-concepts.

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