# Persuasion

## From Single to Multiple to Metacognitive Processes

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ABSTRACT—*This article provides a brief overview of major developments in the history of contemporary persuasion theory. The first intuitive and empirical approaches to persuasion were guided by main-effect questions (e.g., are experts more persuasive than nonexperts?). Furthermore, researchers focused on only one process by which variables (e.g., emotion, source credibility) would have an impact (e.g., emotion affected attitudes by classical conditioning). As data began to accumulate, so many new theories and effects were uncovered that the discipline faced collapse from the numerous inconsistencies evident. In response to the reigning confusion of the previous era, contemporary multiprocess theories were proposed (e.g., the elaboration likelihood model). According to these more integrative approaches, any one variable could affect attitudes by different processes in different situations and thereby sometimes produce opposite effects. Finally, we describe the role of a recently discovered new contributor to persuasion: self-validation. Unlike previous mechanisms that focus on primary cognition, this new process emphasizes secondary or meta-cognition.*

Persuasion is everywhere, playing an essential role in politics, religion, psychotherapy, education, and day-to-day social interactions. Given that people attempt to influence others and are also targets of influence, they have learned something about how persuasion works thorough trial and error. In contrast to this intuitive persuasion knowledge and the advice available from many popular books on the subject, scholars in disciplines such as psychology, communications, political science, marketing, and advertising have systematically studied persuasion for many years.

In this article, we review a contemporary social psychological perspective on persuasion with an emphasis on explicating the psychological processes that account for how variables such as credible sources, a person's emotions, and others produce atti-

tude change. In describing the basic mechanisms underlying persuasion, we will provide a brief overview of social psychology's historical contribution to this area of research, describe the evolution from main effect and single processes approaches to contemporary multiprocess and system theories, outline a general framework that articulates the key processes of persuasion, and highlight a recently discovered new mechanism of persuasion—called *self-validation*—that ties together the operation of a diverse set of variables.

We use the term *persuasion* quite broadly to refer to any procedure with the potential to change someone's mind. Although persuasion can be used to change many things such as a person's specific beliefs (e.g., that wine is good for one's health), the most common target of persuasion in the psychological literature is a person's *attitudes*. Attitudes refer to general evaluations people have regarding other people, places, objects, and issues. Attitudes are studied as the primary object of influence because of their presumed guiding influence on choice and action. That is, all things being equal, people will decide to buy the product they like the most, attend the university they evaluate most favorably, and vote for the candidate they approve of most strongly.

## EARLIEST IDEAS ABOUT PERSUASION

Scholarly speculation about persuasion has a long history and has gone through a number of distinct eras (see Petty, 1997). As with many phenomena, the first phase involved asking simple main effect questions about single variables. This approach is evident beginning with the ancient Greeks (e.g., Aristotle's *Rhetoric*) and continuing through the *Oratoria* from the Italian Renaissance (see McGuire, 1969). These early approaches to persuasion attempted to answer several questions. Are experts more persuasive than nonexperts? Is it better to present people with logical arguments or with appeals based on emotion? Is fear a good emotional tool or is it counterproductive? Humans have a longstanding curiosity about such questions, and contemporary scholars continue to study these issues as well.

Modern-day behavioral experiments on persuasion were initiated in the early 1900s (see Murphy, Murphy, & Newcomb, 1937). These initial empirical approaches were often guided by

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the same main-effect type questions that inspired the early philosophers. According to the main-effect view, any one variable (e.g., an expert source, a happy emotional state) was likely to have just one effect on persuasion—either enhancing or reducing it. Early theories of persuasion also suggested that there was likely only one mechanism or process responsible for whichever outcome was produced. For example, a happy emotion might increase persuasion because of classical conditioning.

One of the earliest and influential general theories of persuasion in the modern era was based on learning theory principles (Hovland, Janis, & Kelley, 1953). Briefly described, this "Yale" approach held that anything that facilitated attending to, comprehending, and learning the contents of a persuasive message would be good for attitude change and that anything that would disrupt those learning processes would be bad. For example, distracting someone from the message was predicted to reduce persuasion because it would interfere with learning the message. Similarly, according to this theory, providing a person with a credible source would be good because it would motivate people to learn the message.

Although the single effect and single process assumptions provided a reasonable beginning to the field, it was not long before complications arose. First, any one variable (e.g., an expert source, fear) was shown to be good for persuasion in some studies but was found to be detrimental in others. Also, there was no compelling support for a single mechanism by which persuasion worked. Finally, researchers have struggled for decades to determine why attitude changes sometimes seemed to be relatively durable and impactful (e.g., guiding behavior) but were rather transitory and inconsequential at other times (e.g., Fazio, 1986). Thus, theories evolved to account for multiple effects, processes, and consequences.

## DUALITY IN EARLY THEORIES OF PERSUASION

As studies on persuasion accumulated and the single effect, process, and consequence assumptions were challenged, theories of influence became more complex. Researchers either modified the early theories or developed new ones to account for the emerging data. One recurring theme involved an underlying duality in persuasion processes. The idea that there are two fundamental types of persuasion can be traced at least to Aristotle, who highlighted a distinction between persuasion involving emotion (passion) versus persuasion involving reason. Furthermore, the notion of an underlying duality in judgment and behavior (e.g., acting or deciding based on one's first impulse versus a more deliberative consideration) is a recurrent theme in psychology since Freud (1923/1962; see Carver, 2005, for a review). So it is not surprising that a duality emerged in persuasion theory as well.

Perhaps the most important initial example of this duality in persuasion theory was in the Hovland group's eventual distinction between persuasion based on learning simple aug-

menting or discounting cues versus persuasion based on learning the message arguments (e.g., Kelman & Hovland, 1953). The key idea was that, separate from the impact of learning the substantive arguments in a persuasive message (the initial focus of their theory), various simple cues (such as high or low credibility sources) could independently augment (or discount) the amount of influence that took place based on the message alone. These orthogonal cue and argument-learning effects were thought to operate simultaneously. That is, people could learn to associate both simple cues and complex arguments with a message conclusion. Furthermore, the impact of each on acceptance of the message conclusion was unique, and because each type of learning was independent, each type of learning had its own forgetting curve.

The duality in this theory was primarily one of content: cues versus arguments. The same fundamental process (learning) operated on each content, though learning simple cues would presumably require less cognitive effort than would learning complex message arguments. Nevertheless, separating cue learning from argument learning and making them both independent contributors to persuasion has allowed the theory to explain some novel persuasion phenomena such as how variables could affect persuasion in the absence of affecting message learning (which was not possible in the original theory) and how initial resistance to a message could change over time into acceptance, such as when people forget a negative message source faster than they forget favorable message arguments (the sleeper effect; see Weiss, 1953).

In another influential early framework, Kelman (1958) introduced a process distinction that was tied to particular content. Specifically, Kelman distinguished between two kinds of persuasion: *internalization* (acceptance of the message arguments) versus *identification* (agreeing because one likes the message source). In Kelman's framework, certain variables (e.g., high source expertise) induced agreement because they enhanced acceptance of the message arguments, whereas other variables (e.g., high source attractiveness), when paired with the same message, induced agreement because of identification with the message source. In both cases, the attitude change was real; in the former case, the change would persist in the absence of the source, whereas in the latter case, attitude change depended on one's continued liking of the source.[1]

The distinction that Kelman (1958) introduced had some parallels to Hovland and colleagues' earlier cue versus arguments distinction; however, rather than being a content distinction to which the same process (learning) was applied, Kelman argued that there were two different processes (accepting arguments, liking sources) tied to different sets of content. That is, some variables (source expertise) were associated

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[1]Kelman (1958) also distinguished *compliance* as a form of influence in which there is no internal change and the individual is merely going along with a powerful other.

with one process (internalization of arguments), but other variables (source attractiveness) were associated with another process (identification with the source). This theory was important because it suggested that attitude changes that were the same in terms of the amount of change induced could be quite different in other ways. Specifically, the attitude change produced by an expert source was likely to persist even if one forgot who the source was because the change was tied to the acceptance of the arguments rather than to the source per se. Changes produced by an attractive source, however, would not persist if the source was forgotten because the change was tied to identification with the source rather than acceptance of the arguments.[2]

## A PERIOD OF CONFUSION AND EARLY MULTIPROCESS THEORIES

From the 1950s through the 1980s, scientific research on persuasion exploded. Indeed, so many conflicting new theories and effects had emerged that reviewers of the literature eventually bemoaned the "reigning confusion" in the area (Sherif, 1977, p. 370). Indeed, the field faced collapse (or at least disinterest) because of the numerous inconsistencies that were evident. It seemed that whatever effect some initial investigation showed (e.g., highly credible sources are more persuasive than low credibility sources), some subsequent study eventually found the opposite effect (see Petty, 1997). Furthermore, there was an explosion of theories proposing new mechanisms to account for the same variables.

For example, whereas some theories proposed that an expert source could increase persuasion either by inducing a person to learn or internalize the message arguments (Kelman, 1958) or by serving as a simple augmenting cue in the absence of argument learning (Kelman & Hovland, 1953), competing theories proposed alternative mechanisms and outcomes for source expertise. For example, the influential theory of cognitive dissonance (Festinger, 1957) held that people show more long-term influence if they agree with a low- rather than high-expertise source because of the need to justify their dissonant action (see McGuire, 1985, for a review of this period).

One of the most important developments following the theories of the 1950s was *cognitive response theory* (Greenwald, 1968), which suggested that persuasion occurred not so much because people learned message arguments or source cues, but because they cognitively responded to them with either favorable or unfavorable thoughts. Thus, a person might learn an argument but still resist it by counterarguing or the person might not learn an argument but still succumb to it because of a favorable thought that was generated. In this framework, variables

like source credibility might enhance persuasion by leading people to be more favorable in their cognitive reactions to the message than if the source was not mentioned or was of low credibility. This idea harkened back to Solomon Asch (1948) who proposed that a message (e.g., "a little rebellion now and again is a good thing") from one source (e.g., Thomas Jefferson) might be interpreted in a more favorable way than same exact message from another source (e.g., Vladimir Lenin) and thus would lead to more agreement.

In addition to affecting persuasion by influencing the valence of thoughts that came to mind, early work on the cognitive response approach also emphasized how persuasion could be affected when variables influenced the number of thoughts of a particular valence that were generated (see Petty, Ostrom, & Brock, 1981, for a review). For example, if a person would normally be counterarguing a message, introducing some distraction could disrupt these negative thoughts, thus making the message more persuasive than it would have been if no distraction were present (Brock, 1967; Festinger & Maccoby, 1964). Alternatively, if a message would normally be eliciting many favorable thoughts, a distraction would disrupt these and the message would be less persuasive than it would have been without the distraction.

To test hypotheses about variables affecting the amount of thought, Petty, Wells, and Brock (1976) advocated varying the quality of the arguments in a message along with the particular variable of interest (e.g., distraction). If a variable increases information processing, it should enhance the impact of argument quality on one's attitude, but if the variable decreases processing, it should reduce the impact of message quality. When distraction (high vs. low) was crossed with argument quality (strong vs. weak) in a $2 \times 2$ factorial experiment, a statistical interaction was obtained on the attitude measure. The attitude data revealed that when the arguments were strong, high distraction reduced favorable thoughts and persuasion, but when the arguments were weak, high distraction instead reduced unfavorable thoughts and increased persuasion compared with the low-distraction condition.

Following the report of this study in 1976, researchers conducted similar experiments including an argument quality manipulation along with some variable of interest. These studies generally showed that many variables initially thought to have just one effect (i.e., either increasing or decreasing persuasion) could both increase and decrease persuasion depending on whether or not the variable was paired with a strong or weak message (see Eagly & Chaiken, 1993; Petty & Cacioppo, 1986, for reviews). For example, increasing personal relevance (Petty & Cacioppo, 1979) and even just including personal pronouns in a message (Burnkrant & Unnava, 1989) were found to increase message processing, thereby increasing persuasion for strong messages but decreasing persuasion for weak messages in comparison with results seen in low-relevance conditions. In other words, enhancing self-relevance led people's

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[2]Note that the Kelman and Hovland (1953) and Kelman (1958) theories were inconsistent with each other. Whereas Kelman and Hovland (1953) argued that expert sources served as simple cues that were not tied to learning or acceptance of the arguments, Kelman held that experts produce attitude change by inducing learning and accepting of message arguments (more in line with the original Hovland et al., 1953, learning model).

attitudes to be more affected by strong arguments versus weak arguments.

Other variables producing an interaction with argument quality include message repetition (Cacioppo & Petty, 1979), personal accountability (Petty & Cacioppo, 1979), emotion (Mackie & Worth, 1989), and source credibility (Heesacker, Petty, & Cacioppo, 1983; see Petty & Wegener, 1998, for a review of additional variables). Because so many variables were shown to both increase and decrease persuasion by affecting the likelihood of an individual thinking about the message, the field began to move away from asking the original, simple question of whether a variable was good or bad for persuasion and began to ask about moderators and mechanisms of these effects.[3]

## CONTEMPORARY DUAL ROUTE THEORIES

As researchers found more evidence that variables could produce multiple and opposite effects and that multiple processes could underlie these diverse outcomes, the time was ripe for new theories that could accommodate these findings. Thus, the 1980s saw the emergence of several such theories in social psychology generally and in the field of persuasion in particular. Most notably, the elaboration likelihood model (ELM; Petty & Cacioppo, 1981, 1986) and the heuristic-systematic model (HSM; Chaiken, Liberman, & Eagly, 1989) articulated multiple processes by which variables could affect attitudes in different situations.

What was unique about these theories in comparison with the earlier duality approaches is that the new theories did not confound content and process. Recall that in Hovland's learning framework, certain variables (e.g., trustworthy sources) served as augmenting cues, whereas other variables served as message arguments. In Kelman's theory, certain variables (expert sources) induced persuasion because of internalization of arguments, whereas other variables (attractive sources) induced persuasion because of identification with the source. Thus, in these theories, particular content mapped onto particular processes. In the new theories, any one variable (e.g., an expert source or one's emotions) could induce persuasion by multiple processes.

The ELM explicitly incorporated a multiple-roles postulate (Petty & Cacioppo, 1986) to account for the fact that any given

content variable could induce attitude change through multiple processes. Although the ELM is probably best known for its central and peripheral routes to persuasion—a metatheoretical idea that some persuasion processes (e.g., expectancy-value logic) operate when the likelihood of thinking is high (central route), whereas other processes (e.g., evaluative conditioning) operate when the likelihood of thinking is low (peripheral route)—perhaps the most powerful aspect of the theory is the specification of a small number of mechanisms by which any given variable can produce attitude change. That is, not only did the ELM take the various existing theories of persuasion and organize them under the central and peripheral routes, but it also took the multitude of processes by which variables could impact attitudes that were articulated in prior research and theory and organized them into a finite set, specifying when they operated.

For example, whereas Hovland and colleagues distinguished between variables that served as arguments versus those that served as cues and assumed that both processes invariably operated simultaneously, the ELM held that any one variable could impact attitudes by serving as an argument or as a cue depending on the person's motivation and ability to think carefully about the merits of an appeal. So when motivation and ability to think were low, positively valenced variables such as source attractiveness or one's state of happiness would be used as simple cues leading to more persuasion regardless of the other substantive information with which they were paired. Research has pointed to numerous variables that can serve as simple cues and several specific mechanisms by which these variables (as cues) can affect attitudes. For example, different low-effort mechanisms capable of producing attitude change with relatively little processing include evaluative conditioning, identification with the source, and use of heuristics.

Simple cues that can affect attitudes when the motivation and ability to think are low include bodily movements such as head nodding (e.g., Tom, Pettersen, Lau, Burton, & Cook, 1991) and arm flexion (e.g., Cacioppo, Priester, & Berntson, 1993), source variables such as expertise (Chaiken, 1980; Petty, Cacioppo, & Goldman, 1981), message variables such as the mere number (Petty & Cacioppo, 1984) or length (Wood, Kallgren, & Preisler, 1985) of arguments included in a message, and recipient variables such as induced emotional states (Petty, Schumann, Richman, & Strathman, 1993).

According to the ELM, however, these variables do not invariably serve as simple cues under the peripheral route. These same variables can serve in other roles when motivation and ability to think are high. For example, when people are motivated and able to think, these same simple variables can be processed as arguments and analyzed for their evidentiary value. When analyzed as evidence (rather than serving as simple cues), these variables could help or hinder persuasion. For example, an attractive source (which can serve as a simple positive cue when the ability to think is low) would be

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[3]Subsequent research showed that variables that were initially thought to either increase or decrease message processing were also capable of both increasing and decreasing message processing depending on other variables. For example, in one study, the use of rhetorical questions in a message enhanced thinking when it would ordinarily have been low but disrupted thinking when it ordinarily would have been high. Specifically, Petty, Cacioppo, and Heesacker (1981) found that when a message was on a topic of low personal relevance (i.e., low-thinking conditions), the use of rhetorical questions in the message increased the impact of argument quality on attitudes more than when those questions were absent. However, when the message was on a topic of high personal relevance (i.e., high-thinking conditions), the use of rhetorical questions decreased the impact of argument quality more than when those questions were absent (see also Baker & Petty, 1994; S.M. Smith & Petty, 1996).

analyzed for its relevance and cogency when the ability to think is high. Thus, an attractive person who was the source of information about a beauty product might be persuasive by providing visual evidence for the effectiveness of the product. If so, source attractiveness would serve as a strong argument leading to favorable thoughts. If the same source was a spokesperson for a new mortgage company, however, when the ability to think is high, a careful analysis would likely lead to rejection of attractiveness as a relevant or cogent consideration, though it might be effective as a cue when the ability to think is low. The important point is that, in the ELM, the same variable that is analyzed as a cue when thinking is low can serve in other roles (e.g., as an argument) when thinking is high (Petty, 1997; see also Pierro, Mannetti, Kruglanski, & Sleeth-Keppler, 2004).

The ELM also holds that, in addition to serving as arguments and cues, variables can influence persuasion by affecting the amount and the direction of thinking. Notably, the ELM holds that the same variables that can be processed as arguments or as cues can sometimes determine how much thinking occurs or the valence of that thinking. As stated above, according to the ELM, variables are most likely to be processed as cues under conditions in which thinking is constrained to be low and to be processed as arguments under conditions in which thinking is high. However, under conditions in which the extent of thinking is not constrained at all, these same variables can affect the amount of thinking that occurs. When variables increase the amount of thinking, attitudes tend to polarize in the direction of the dominant thought to a message, and the opposite happens when variables decease thinking. Thus, when the dominant thoughts to a message are favorable, increasing thinking enhances persuasion, but when the dominant thoughts are unfavorable, increasing thinking reduces persuasion. A long list of variables has been shown to affect the amount of thinking and some (e.g., personal relevance) were mentioned earlier in this article.

Finally, according to the ELM, if conditions encourage thinking, then variables can impart some bias to the ongoing processing. That is, when motivation and ability to think are high and people are effortfully processing a proposal, thinking can be biased by motivational and ability factors. Many variables have been shown to bias thinking in such situations. These variables include one's own accessible attitudes (Fazio & Williams, 1986), one's emotions (Petty et al., 1993), the credibility of the source (Chaiken & Maheswaran, 1994), and others. Variables are most likely to bias thoughts when people are already interested in thinking and the message is somewhat ambiguous (i.e., the information can be interpreted in multiple ways; cf., Asch, 1948). The clearer the message is, the less likely it is that biased thinking will occur.

In sum, contemporary multiprocess theories such as the ELM and HSM hold that persuasion can occur under conditions when thinking is high or low, but the mechanisms involved in attitude change in these situations can be quite different.[4] Again, it is important to note that these theories view content and process as orthogonal. That is, any one variable (i.e., whether source, message, recipient, or context) can affect attitudes by different processes in different situations.[5] Since its inception, the ELM has described four fundamental processes by which any given variable can affect attitudes depending on the elaboration likelihood: (a) serving as a simple cue under conditions in which thinking is low, (b) serving as a piece of substantive evidence (i.e., an argument), (c) biasing the ongoing thinking when processing is high, and (d) affecting the extent (amount) of information processing when thinking is unconstrained.

As just one example of the multiple roles that a variable can play in persuasion depending on the extent of thinking likely in the situation, consider how a person's emotions can impact evaluative judgments according to the ELM. First, when thinking is constrained, emotions, like many other variables, tend to serve as simple associative cues and produce evaluations consistent with their valence (e.g., Petty et al., 1993). That is, the emotion simply becomes associated with the attitude object or serves as input for an "affect heuristic" (cf., Forgas, 1995; Slovic, Finucane, Peters, & Macgregor, 2002). Under conditions in which the ability to think is low, positive emotions should lead to more favorable attitudes than should negative emotions.

When the likelihood of thinking is not constrained by other variables, then emotions can affect the extent of thinking. For example, people may think about messages more when in a sad state rather than a happy one because sadness signals a problem to be solved (Schwarz, Bless, & Bohner, 1991) or because it conveys a sense of uncertainty (Tiedens & Linton, 2001). If sadness increases thinking over happiness, then sadness should increase persuasion to strong arguments but should reduce persuasion for weak arguments. When sadness increases persuasion to strong arguments by fostering thinking about them, the impact is opposite to the effect sadness has on persuasion when it serves as a simple cue.

When thinking is high, one's feelings are examined as arguments. That is, one can ask if one's emotional reaction provides evidence as to the desirability of the object under consideration. Rather than having an effect that is simply transferred from its valence, the impact is more complex. Thus, the more frightened one is by a scary movie, the more positively one might rate the movie because fear is a desirable feature of this type of enter-

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[4]It is also possible for the same process to operate under high- and low-thinking conditions while also varying in degree (see Kruglanski & Thompson, 1999; Petty & Wegener, 1999).

[5]The separation of content and process in the ELM and HSM has not always been appreciated (e.g., see Kruglanski, Erb, Pierro, Mannetti, & Chun, 2006). This misunderstanding might stem from confusing the more recent theories with earlier ones that did in fact have this confound (see Petty & Wegener, 1999; Petty, Wheeler, & Bizer, 1999, for extended discussion). For example, in Kelman's (1958) approach, internalization was referred to as stemming from a message "content orientation," whereas identification stemmed from a "source orientation" (e.g., see Kelman & Eagly, 1965, p. 76).

tainment (Martin, Ward, Achee, & Wyer, 1993). To be effective as an argument, the emotion should be attributed to the stimulus under consideration and should not be incidental. If the emotion is salient but is not attributed to the object under consideration, then it might be viewed as a biasing factor, and people might attempt to remove any inappropriate influence by correcting for it based on their naive theory of the expected biasing effect (Wegener & Petty, 1997). Finally, independent of the impact of emotion when people are considering it explicitly, an experienced emotion can bias the ongoing thoughts people have about an object (Petty et al., 1993). For example, positive consequences seem more likely when people are in a happy state rather than a sad one (DeSteno, Petty, Wegener, & Rucker, 2000; for a complete review of the multiple mechanisms by which emotions can affect attitudes, see Petty, Fabrigar, & Wegener, 2003).

Notably, just as is the case for emotion, research has shown that numerous other variables can affect attitudes by serving in these same four roles. Thus, the expertise of the message source can serve as a simple cue when the likelihood of thinking is low (Petty, Cacioppo, & Goldman, 1981), can be analyzed as an argument (Kruglanski et al., 2005) and bias the nature of the thoughts (Chaiken & Maheeswaran, 1994) when the likelihood of thinking is high, and can affect the extent of thinking when thinking is unconstrained (DeBono & Harnish, 1988).

According to the ELM, understanding the four fundamental processes by which diverse variables such as emotion and credibility can produce attitude change is important for several reasons. First, it brings integration to the literature by showing how just a small number of processes can account for the mechanisms by which diverse variables operate. That is, the specification of these four processes and the conditions under which they operate provides an overarching conceptual umbrella that ties together a seemingly unrelated set of variables. Second, understanding these processes allows one to predict the direction of the persuasion effect. Third, understanding the process by which change occurs is important for predicting whether the new attitudes formed are consequential or not. Specifically, research supports the ELM postulate that the more issue-relevant cognitive activity that goes into an attitude change, the more durable the new attitude is and the more impact it has on other judgments and behaviors (see Petty, Haugtvedt, & Smith, 1995, for a review).

## A NEW PROCESS IN PERSUASION: THE SELF-VALIDATION HYPOTHESIS

Recently, we proposed and documented a fifth mechanism through which variables can work. This new mechanism also appears to have considerable integrative potential. Unlike the previous roles, which focus on primary or first-order cognition, this new process emphasizes secondary or metacognition. Primary thoughts are those that occur at a direct level of cognition

and involve our initial associations of some object with some attribute or feeling. Following a primary thought, people can also generate other thoughts that occur at a second level, involving reflections on the first-level thoughts.

Metacognition refers to these second-order thoughts (i.e., our thoughts about our thoughts or thought processes; Petty, Briñol, Tormala, & Wegener, 2007). In recent years, metacognition has assumed a prominent role not only in the domain of social psychology (Jost, Kruglanski, & Nelson, 1998), but also in memory research (Koriat & Goldsmith, 1996), clinical practice (Beck & Greenberg, 1994), and advertising (Friestad & Wright, 1995). Indeed, metacognition has been touted as one of the top 100 topics in psychological research (Nelson, 1992).

One of the most essential dimensions of metacognitive thought consists of the degree of confidence people place in their thoughts, ranging from extreme certainty to extreme doubt in their validity. Thus, two people might have the same thought in response to a persuasive message, but one person might have considerably greater confidence in that thought than the other person. Confidence in a thought is important because the greater the confidence, the greater its impact on judgment. This idea is referred to as the *self-validation hypothesis* (Petty, Briñol, & Tormala, 2002), which is the notion that generating thoughts is not sufficient for them to have an impact on judgments—one must also have confidence in them. According to this hypothesis, not only can variables affect the number and valence of thoughts, they can also affect thought confidence.

The self-validation hypothesis makes a number of straightforward predictions. First, it suggests that just as assessing attitude confidence has been very useful in determining which attitudes guide behavior (e.g., Fazio & Zanna, 1978), so too would assessing thought confidence be useful in determining which thoughts generated toward a persuasive communication or issue predict attitudes. In line with this reasoning, Petty et al. (2002) found that attitude–thought correlations increased as measured thought confidence increased. Subsequent research has shown that direct manipulations of thought confidence have a similar impact. For example, in one study, participants were asked to think about situations in which they experienced confidence or doubt right after they generated positive or negative thoughts toward a persuasive message (Petty et al., 2002). When positive thoughts had been generated toward the message, experiencing confidence following thought generation led to more persuasion, but when unfavorable thoughts had been generated toward the message, experiencing confidence led to less persuasion. That is, manipulated confidence affected reliance on one's thoughts.

An important aspect of the self-validation hypothesis is that it provides a completely new mechanism by which a large number of traditionally studied variables can have an impact on persuasion. For example, consider the impact of emotion in persuasion situations. We have already demonstrated that emotion can serve in the four roles outlined for variables in the ELM.

Recent research on the self-validation hypothesis has shown that emotion can also affect attitudes through a fifth mechanism: thought confidence. This possibility follows directly from the finding that emotional states can relate to confidence, with happy people being more certain and confident than sad individuals (Tiedens & Linton, 2001). If emotion influences thought confidence, then people in a happy state should be more reliant on their thoughts than are people in a sad state. This self-validation effect of emotion should be most likely to occur when people are concerned with evaluating their thoughts, such as when personal relevance is high and when the emotion is experienced at the point when people are evaluating their thoughts (i.e., when emotion is felt following thought generation rather than prior to it).

In research testing a self-validation role for emotion, Briñol, Petty, and Barden (2007) had participants read a persuasive message composed of either strong or weak arguments about a new foster care program. The message was presented prior to receiving an emotion manipulation in which people were required to behave according to a happy or sad script (Velten, 1968). As predicted by the self-validation perspective, when participants received a strong message (and thoughts were thus mostly favorable), those who were asked to act as if they were happy following message processing were more persuaded than were those asked to act as if they were sad. This is because happy people relied more on their generated favorable thoughts than did sad individuals. However, when participants received a weak message on the same topic (and thoughts were mostly unfavorable), the effects of the emotion induction were reversed. Again, happy people relied more on their thoughts than did sad individuals, but agreement was reduced because the thoughts were unfavorable. Furthermore, in this research the effect of emotion on attitudes was mediated by the confidence people placed in their thoughts, with happy individuals expressing more thought confidence than those who were sad.

Of most importance for the multiple roles idea from the elaboration likelihood model, the self-validation effects for emotion in the Briñol, Petty, and Barden (2007) research were confined to individuals high in need for cognition (NC; i.e., those people who like to think; Cacioppo & Petty, 1982). In low NC people, emotions had a direct effect on attitudes unmediated by thought confidence. That is, for low-NC individuals, a good feeling after receiving the message acted as a simple cue leading to more positive attitudes when happy, regardless of argument quality. As noted earlier, this is consistent with prior research guided by the ELM suggesting that low-NC individuals are more likely to use their emotions as input to an affect heuristic (e.g., Petty et al., 1993).

Research has shown that this new self-validation mechanism can account for some already established persuasion outcomes by a different process than those previously postulated. It has also led to the discovery of new empirical outcomes, such as the discovery that people are sometimes more likely to be persuaded when shaking their heads than when they are nodding. Previous research had documented that people were more favorable to a message (Wells & Petty, 1980) or a consumer product (Tom et al., 1991) when they were asked to nod rather than shake their heads to it. However, Briñol and Petty (2003) found that if a message presented weak arguments on an important topic, those nodding their heads reported more confidence in their negative thoughts and thus were less favorable toward it than were those who were shaking their heads.

At this point, numerous variables have been shown to be susceptible to a self-validation analysis when conditions foster a high degree of thinking and concern about one's thoughts. In particular, people developed more confidence in their thoughts to a message and relied on them more if, following the message, they learned that the source was of high credibility (Briñol, Petty, & Tormala, 2004; Tormala, Briñol, & Petty, 2006), were made to feel powerful (Briñol, Petty, Valle, Rucker, & Becerra, 2007), experienced fluency in thought generation (Tormala, Petty, & Briñol, 2002), or affirmed an important value (Briñol, Petty, Gallardo, & DeMarree, 2007). Whether the manipulations of these self-validation studies involved a bodily response or some aspect of the source or recipient, or whether the cognitions were about oneself, others, or objects or were emotional or rational in nature, self-validation effects were apparent, suggesting that people often look for ways to validate whatever mental contents have been activated.

## DUAL SYSTEMS MODELS

Although the 1980s and 90s were dominated by theories such as the ELM and HSM that were commonly referred to as *dual process models* (see Chaiken & Trope, 1999) because of their dual modes of persuasion (i.e., attitude change based on high or low amounts of thought), the most recent century has brought an explosion of *dual systems theories of judgment*. These theories have much in common with the earlier dual process models in that there is typically an emphasis on controlled judgments that are made deliberatively with more thought versus those made more automatically with little thought (cf., Schneider & Shiffrin, 1977). The relatively automatic system has been referred to as the emotional system (Zajonc & Markus, 1982), impulsive system (Strack & Deutsch, 2004), intuitive system (Epstein, 2003), implicit system (Greenwald & Banaji, 1995), slow-learning system (E.R. Smith & DeCoster, 2000), or, more blandly, as System I (Kahneman, 2003) or System X (Lieberman, 2000). These systems are in contrast to the cognitive, reflective, rational, explicit, fast-learning System II/System Y.

Although some believe that the dual systems approaches are unique in postulating multiple processes under each system, we have seen that the so-called dual process models actually refer to more specific processes under the thoughtful and nonthoughtful routes. More uniquely, the dual systems models have an emphasis on the underlying mental architecture (e.g.,

memory systems; E.R. Smith & DeCoster, 2000) and/or specific brain structures (e.g., Liberman, 2000) that guide processing. Although relating processes to underlying brain structures is worthwhile, it is not clear that these new systems approaches go beyond the earlier models in accounting for how particular variables impact attitude change (see Petty & Briñol, 2006). That is, people can use any content input (one's attitude, one's emotions, a credible source, and so forth) in an intuitive/impulsive way (e.g., liking a message in a relatively effortless way if the position agrees with your attitude, if you feel happy, or if the source is credible), or the same variable can serve as input to a more deliberative/reflective process (e.g., having more confidence in and using your generated thoughts if they agree with your attitude, if you are happy, or if the source is credible).

## SUMMARY AND CONCLUSIONS

The first generation of persuasion research emphasized the idea that persuasion variables (e.g., distraction, emotion, source credibility) could increase or decrease persuasion through a single process. The first approaches to persuasion were guided by simple, main-effect questions that were framed as if there was only one correct answer or outcome for each of the variables studied. That is, whichever effect was obtained, there was just one explanation for the outcome or a single process by which this outcome was produced. As data began to accumulate, researchers recognized that the single-effect assumption was not viable and that persuasion could not be tied to a single process. This led to early ideas about a duality in persuasion (e.g., cues vs. arguments or internalization vs. identification).

The so-called dual process models became more sophisticated in a subsequent wave of research demonstrating that multiple effects for the same variable were possible, that any one effect could be caused by different processes, and that any one variable could operate differently in different situations. Prominent persuasion theories such as the ELM and HSM exemplified this new wave and explained how any one variable could increase or decrease persuasion and could do so in a finite number of ways.

Finally, we noted that the processes of persuasion have traditionally been specified at the primary level of cognition. A third wave of research has focused on metacognitive processes that can be important to the success of persuasive messages. Thus, just as some new research is articulating the low-thought automatic processes that contribute to attitudes and judgments (e.g., Dijksterhuis & Nordgren, 2006), at the other end of the thinking continuum, some research is focusing on people who are thinking about their thoughts.

It is clear why people want to know about persuasion effects, but why do we care about the processes leading to the effects? Understanding the processes by which variables produce persuasion is important for a number of reasons. First, if any one variable can affect attitudes by different processes, then different persuasion outcomes for the same variable are possible. For example, under circumstances in which thinking is constrained to be low, a happy state might lead to more persuasion than would a sad state because emotion serves as a simple cue, but under circumstances in which thinking is unconstrained, a happy state prior to a message might reduce processing of the strong arguments in a message and thereby reduce persuasion. Second, according to the ELM, the process by which an attitude is formed or changed is consequential for the strength of the attitude (Petty & Krosnick, 1995). Thus, even if two different processes result in the same extent of persuasion, the consequences of this persuasion can differ. For example, the same variable (e.g., happiness) can lead to the same outcome (more persuasion) by serving as a simple cue (under conditions in which thinking is low) or by biasing the generation of positive thoughts (under conditions in which thinking is high), but the latter attitude would be more consequential. Understanding the process by which change occurred is essential because, although those effects are similar on the surface, the underlying mechanisms that produce these effects are different, leading to differences in the strength of the judgments formed. Thus, focusing on the processes by which variables have their impact is important because it is informative about the immediate and long-term consequences of persuasion.

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