

Psychological Processes Underlying Persuasion

A Social Psychological Approach

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Persuasion is everywhere, playing an essential role in politics, religion, psychotherapy, education, and day-to-day social interactions. Social influence through persuasion is also the most prevalent as well as the most civil means of social control available to governments and to individuals. Given that people attempt to persuade others (and are themselves targets of persuasion), they have learned something about how persuasion works through trial and error. Indeed, individuals in certain professions such as law and sales are likely to have developed their own naïve theories of persuasion.

In contrast to this intuitive persuasion knowledge (Friestad and Wright, 1995), scholars in disciplines like psychology, communications, marketing and advertising have systematically studied persuasion for many years. Formal discussions of principles of persuasion can be traced to the ancient Greeks (e.g. Aristotle's *Rhetoric*) with an additional flourishing during the Italian Renaissance (e.g. Quintilian's *Institutio Oratoria*; see McGuire, 1985). It was not until the current century, however, that ideas about persuasion were systematically linked to empirical observations. Early work ranged from content analyses of political propaganda to case studies of the ebb and flow of public opinion. In contrast to the mostly correlational approaches adopted subsequently in sociology and political science, the psychological approach has been largely experimental (Petty, Priester and Briñol, 2002).

In this article, we review a contemporary social psychological perspective on persuasion with an emphasis on explicating the *psychological processes* that underlie successful attitude change. In describing the basic mechanisms underlying persuasion, we provide a brief overview of social psychology's historical contribution to this area of research; outline a general framework for studying the key processes of persuasion; explain the key psychological processes underlying attitude change; and discuss the relationship between different variables and attitude change processes and their implications for attitude strength.

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Historical overview: learning processes

In the typical situation in which persuasion is possible, a person or a group of people (i.e. the recipient or audience) receives an intervention (e.g. a persuasive communication) from another individual or group (i.e. the source) in a particular setting (i.e. the context). Successful persuasion is said to occur when the recipients' attitudes are modified in the desired direction. Although one can attempt to persuade others to adopt different beliefs, emotions, attitudes or behaviors, persuasion research has focused on attitude change (i.e. change in people's general evaluations of issues, people or objects) because emotions, beliefs and behavioral tendencies are determinants of people's general evaluations (Zanna and Rempel, 1988), and these evaluations in turn can influence how people act (e.g. approach or avoid), feel (e.g. happy or sad) and think (e.g. agree or disagree; see Maio and Olson, 2000).

Over the past 50 years, researchers have developed numerous theories of attitude change and models of knowledge-attitude-behavior relationships (see reviews by Eagly and Chaiken, 1993; Petty and Wegener, 1998a). One of the earliest seemingly reasonable assumptions in theories of persuasion was that effective influence required a sequence of steps leading to absorption of the content of a message (e.g. exposure, attention, comprehension, learning, retention; see McGuire, 1985). However, the available research evidence shows that message learning can occur in the absence of attitude change and that attitudes can change without learning of the specific information in the communication (Petty and Cacioppo, 1981; Petty et al., 2002). Cognitive response theory (Greenwald, 1968; Petty, Ostrom and Brock, 1987) was developed explicitly to account for the low correlation between message learning and persuasion observed in many studies, and for the processes responsible for yielding to messages. In contrast to the traditional learning view, the cognitive response approach contended that when people were thinking about the message 'on-line' (see Hastie and Park, 1986), persuasion depends on the extent to which individuals articulate and rehearse their own idiosyncratic thoughts to the information presented. That is, the external information was merely a stimulus for a person's own thoughts, which in turn determined the extent of influence. According to this framework, an appeal that elicits issue-relevant thoughts that are primarily favorable toward a particular recommendation produce agreement, whereas an appeal that elicits issue-relevant thoughts that are predominantly unfavorable toward the recommendation is less effective in achieving attitude change.

Although the cognitive response approach provided important insights into the persuasion process, it focused only on those situations in which people were active processors of the information provided to them. The theory did not account very well for persuasion that was obtained in situations where people were not actively thinking about the message content. In fact, persuasion was thought to be unlikely in such situations. Yet, numerous studies have shown that attitudes can be changed when the likelihood of extensive thinking is low. The Elaboration Likelihood Model of persuasion (ELM; Petty and Cacioppo, 1981) was proposed to correct this deficit in the cognitive response approach by arguing that persuasion can occur when thinking is high or low, but the processes and consequences of persuasion are different in each situation (see Petty and Cacioppo, 1986; Petty and Wegener, 1999).

The ELM is an early example of what became an explosion of dual process and dual system theories that distinguished thoughtful from non-thoughtful determinants of judgment (see Chaiken and Trope, 1999). In the ELM, thoughtful persuasion was referred to as following the *central route*, whereas low-thought persuasion was said to follow the *peripheral route*. Furthermore, the ELM postulates that any persuasion variable (i.e. source, message, recipient or context) can influence attitudes by affecting one of the key processes of persuasion.

Fundamental processes underlying attitude change

In this section, we describe the fundamental processes by which any communication variable can influence persuasion. By the term *variable* we refer to any aspect of the source (e.g. credibility), message (e.g. number of arguments), recipient (e.g. mood), or context (e.g. presence of distraction) that can vary in a given persuasion situation. The number of potential variables relevant to persuasion is endless, so we will just mention some that have received the most research attention. According to the ELM, any variable can influence attitude change by affecting a finite set of processes.¹ That is, as we explain in more detail next, variables affect persuasion by influencing the amount of thinking, the direction of thinking, structural features of thoughts, or serving as substantive arguments or simple cues.

Amount of thinking

One of the most fundamental things that a variable can do to influence attitudes is to affect the amount of thinking a person does about a persuasive communication. The more motivated and able people are to think about a message, the more their attitudes are determined by their valenced thoughts to the message as postulated by the cognitive response approach (see Petty et al., 1981). Also, attitudes based on high amounts of thinking are postulated to be stronger than attitudes based on little thought. That is, such attitudes are more accessible, stable, resistant to counter-messages and predictive of behavior (see Petty, Haugtvedt and Smith, 1995). Thus, it is fundamental to consider the amount of thinking that underlies attitude change because the overall goal of most persuasive messages is to induce attitude change that has these features. A large number of variables have been examined that can influence attitude change by affecting people's general *motivation* and *ability* to think about a message (see, e.g., Petty and Wegener, 1998a, for a review). For example, by increasing the personal relevance of a message, people become motivated to scrutinize the evidence more carefully such that if the evidence is found to be strong, more persuasion results, but if the evidence is found to be weak, less persuasion occurs (Petty and Cacioppo, 1979a). In contrast, distraction in the situation reduces one's ability to process a message to the extent that distraction reduces persuasion if the arguments are strong (since favorable thoughts are disrupted), but increases persuasion if the arguments are weak (since unfavorable thoughts are disrupted; Petty, Wells and Brock, 1976).

Type or direction of thinking

When motivation and ability to think are high, people will be engaged in careful thought about a message, but that thinking can be biased by other variables in the persuasion setting. Most importantly, variables can motivate or enable people to either support or derogate the content of the information provided. This is important, of course, because attitude change is a function of the number and valence of thoughts that come to mind when elaboration is high (see reviews by Eagly and Chaiken, 1993; Petty and Cacioppo, 1986). Some features of the persuasion situation (e.g. the subjective cogency of the arguments used in a message, recipient's mood, reactance motives) increase the likelihood of favorable thoughts being elicited, but others increase the likelihood of unfavorable thoughts coming to mind. One of the most powerful factors that produce a bias is the position the message takes. In general, any time a message takes a position opposed to one's attitudes, or values, or identity, people will be biased against it. And, when a message takes a position in favor of one's views, people will be biased in favor of it. Nevertheless, if the likelihood of thinking is high, some variables are capable of producing thinking that is biased against one's favored position or biased in favor of a disliked position (e.g. instilling reactance; see Petty and Cacioppo, 1979b).

Structural features of thoughts

The structural features of thoughts refer to dimensions of thoughts other than direction (favorable or unfavorable) and amount (high or low). Although there are several important structural features of thoughts, such as how quickly the thoughts come to mind, in this section we highlight metacognitive aspects of thinking, or thoughts about one's thoughts (for a review on this topic, see, Petty, Briñol et al., 2007). When the amount of thinking is high, variables can affect metacognitive features of the thoughts that are generated such as how much confidence people have in their thoughts or how biasing they are. According to what we have called the self-validation hypothesis, confidence in thoughts is important because when people have greater confidence in the validity of their thoughts, these thoughts are more likely to be used in forming judgments (Petty, Briñol and Tormala, 2002). On the other hand, if people doubt the validity of their thoughts, the thoughts will not have an impact on judgments. This may be one reason why some communication campaigns are unsuccessful. That is, they may produce the appropriate favorable thoughts, but these thoughts may not be held with sufficient confidence to affect judgments. Shortly, we will describe a number of variables that have an impact on thought confidence (for a review, see Briñol and Petty, 2004).

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. Thus, individual and situational differences in the extent of thinking moderate these structural effects.

Serving as arguments

When thinking is high, people assess the relevance of *all* of the information in the context that comes to mind in order to determine the merits of the attitude object under consideration. That is, when thinking is high, people examine source, message, recipient, contextual and internally generated information – as possible arguments or reasons for favoring or disfavoring the attitude object. Individuals vary in their assessment of what type of information serves as persuasive evidence for any given attitude object.

Serving as cues

In contrast to all of the roles that variables can serve when the likelihood of thinking is high, when conditions do not foster thinking, variables influence attitudes by serving as simple cues. That is, under low thinking conditions, attitudes are influenced by a variety of low-effort processes such as mere association (Cacioppo et al., 1992) or reliance on simple heuristics (Chaiken, 1987). This is important because it suggests that attitude change does not always require effortful evaluation of the information. Instead, when a person's motivation or ability to process the issue-relevant information is low, persuasion can occur by a peripheral route in which processes invoked by simple cues in the persuasion context influence attitudes. Although peripheral ways to change attitudes can be very powerful in the short term, research has shown that attitude changes based on peripheral cues tend to be less accessible, enduring and resistant to subsequent attacking messages than attitudes based on careful processing of message arguments (see Petty et al., 1995, for a review).

The influence of communication variables on persuasion

The ELM model (Petty and Cacioppo, 1981) identifies the key processes just reviewed and highlights their role in producing attitude changes that are consequential or not (see Petty and Cacioppo, 1986; Petty and Wegener, 1999). It postulates that any communication variable (i.e. whether source, message, recipient or context) influences attitudes by affecting one of the key processes of persuasion. As noted earlier, understanding the process by which variables can produce persuasion is important because different persuasion outcomes for the same variable are possible, and because the process by which an attitude is formed or changed is consequential for the strength of the attitude. Thus, analyzing the processes informs us of both the immediate and long-term consequences for persuasion. A few examples should help to clarify the multiple roles that any variable can have in different situations.

Roles of source factors

Consider first the multiple processes by which source factors, such as expertise or attractiveness, can have an impact on persuasion. In various studies, source factors have been found to influence persuasion by serving as a peripheral cue when the likelihood of thinking was low. For example, when the personal relevance of a message was low, highly expert sources produced more persuasion than sources of low expertise regardless of the quality of the arguments they presented (Petty, Cacioppo and Goldman, 1981; see also Chaiken, 1980).

On the other hand, in several studies in which the elaboration likelihood was moderate, the source factors of expertise and attractiveness affected how much thinking people did about the message (Heesacker, Petty and Cacioppo, 1983; Moore, Hausknecht and Thamodaran, 1986; Puckett et al., 1983). For example, Priester and Petty (1995) demonstrated that people process messages more carefully when they come from a source whose trustworthiness is in doubt rather than from one who is clearly trustworthy. The extent to which participants processed the message information was assessed by examining the extent to which the quality of the arguments made a difference in post-message attitudes (Petty, Wells and Brock, 1976). For people to be differently affected by strong and weak persuasive messages, they have to carefully attend to and think about the content of the information (see Petty and Cacioppo, 1986 for an extended discussion of this technique).²

When the likelihood of thinking is very high, source factors take on other roles. For example, if a source factor is relevant to the merits of a message, it can serve as a persuasive argument. Thus, an attractive endorser might provide persuasive visual evidence for the effectiveness of a beauty product (Petty and Cacioppo, 1984a). Another role that sources can play is biasing information processing. In one study Chaiken and Maheswaran (1994) demonstrated such a biasing effect. When recipients under high elaboration conditions received an ambiguous message (i.e. not clearly strong or weak), expertise of the source significantly affected the valence of the cognitive responses generated (i.e. expertise-biased message processing). When the likelihood of thinking was low (i.e. the message was on an unimportant topic), expertise did not affect message-relevant thoughts and simply acted as a persuasion cue.

Finally, under high elaboration conditions, source factors have been found to influence persuasion by affecting the confidence people have in the validity of the thoughts they have in response to the message. In an initial demonstration, Briñol, Petty and Tormala (2004) exposed participants to strong arguments in favor of the benefits of phosphate detergents. Following receipt of the message, participants learned that the source of the information was either a government consumer agency (high credibility) or a major phosphate manufacturer (low credibility). The self-validation reasoning is that when thoughts are generated in response to accurate information (high credibility), people can be relatively confident in their thoughts. Although participants in both high and low credibility conditions generated equally favorable thoughts in response to the strong arguments, participants exposed to the high (vs low) credibility source had more confidence in their thoughts, relied on them more, and were therefore more persuaded by the message.

In a follow-up study, Tormala, Briñol and Petty (2006a) predicted and found that because of the self-validation role for sources, a high credibility source can lead to either more or less persuasion than a low credibility source depending on the nature of people's thoughts towards the persuasive message. In two experiments, Tormala et al. (2006a) presented recipients with either a strong or a weak persuasive message promoting *Confrin*, a new pain relief product, and then revealed information about the source (i.e. either from a federal agency that conducts research on medical products or from a class report written by a 14-year-old student). When the message was strong, high source credibility led to more favorable attitudes than low source credibility because of greater reliance on the positive thoughts. However, when the message was weak and participants generated mostly unfavorable thoughts, the effect of credibility was reversed.³ That is, high source credibility produced less favorable attitudes than did low source credibility because participants exposed to the more credible source had more confidence in their unfavorable thoughts towards the weak message.

Finally, Tormala, Briñol and Petty (2007) identified a limiting condition on the self-validation effect for sources, in addition to the previously mentioned one regarding elaboration (i.e. self-validation effects should be most likely when people are actively engaged in message processing). Tormala et al. (2007) demonstrated that source credibility affects thought confidence only when the source information follows, rather than precedes, the persuasive message. When source information precedes a message, it biases the generation of thoughts, consistent with past research (Chaiken and Maheswaran, 1994). Thus, our findings on self-validation argue that research on persuasion can benefit from considering the timing of the key manipulations as placement of the independent variable in the sequence of persuasion stimuli can have an impact on the mechanism by which it operates.

Roles of message factors

Think about the number of arguments that a persuasive message contains. This variable serves as a simple peripheral cue when people are either unmotivated or unable to think about the information (Petty and Cacioppo, 1984b). That is, people might simply count the arguments in a message and agree more when more information is presented – regardless of the cogency of that information. When motivation and ability are high, however, the informational items in a message are not simply counted as cues; instead the information is processed for its quality. Then, when the number of items in a message serves as a cue (low elaboration conditions), adding weak reasons in support of a position enhances persuasion, but when the items in a message are processed as arguments, adding weak reasons reduces persuasion (Alba and Marmorstein, 1987; Friedrich et al., 1996; Petty and Cacioppo, 1984b).

The mere number of arguments is only one of the message factors that can influence persuasion by serving in different roles in different situations (for a review, see Petty and Wegener, 1998a; see also Petty and Briñol, 2002). To take one more example, consider the effects of matching or tailoring the message to some characteristic of the message recipient. One of the best strategies that can increase the effectiveness

of any communication in changing attitudes consists of altering the arguments contained in the message to match the particular concerns of the message recipient. There are a variety of ways in which a message can be matched with the needs, interests and characteristics of the individual (e.g. their personality, their identity, etc.; see Briñol and Petty, 2005, 2006; Petty, Wheeler and Bizer, 2000). The most common finding is that matching increases persuasion. As any other variable, matching messages with personality can influence persuasion by different processes depending on the likelihood of thinking (e.g. serving as a cue when elaboration is low, biasing the thoughts when elaboration is high, and so forth).

For example, one of the variables that have been studied most with respect to matching message to person is self-monitoring (Snyder, 1974). This individual difference makes a distinction between high self-monitors, who are oriented toward social approval, and low self-monitors, who are more motivated to be consistent with their internal beliefs and values. 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 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 (see also DeBono, 1987; Lavine and Snyder, 1996; Snyder and DeBono, 1989).

But what are the mechanisms underlying the effectiveness of message matching? This is important to understand because of the strength properties that follow from different processes of persuasion. As noted earlier, research indicates that attitude changes based on high amounts of issue-relevant thought tend to show more persistence over time, resistance and influence in guiding behavior than changes based on little thought. According to the multiple roles notion outlined above, when thinking is set at a high level, matching could 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 and Snyder, 1996). In contrast, when the circumstances constrain the likelihood of elaboration to be very low, a match of message to person 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, 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'.

Furthermore, when thinking is not already constrained by other variables to be high or low, matching a message to a person could increase thinking about the message. For example, in one study, Petty and Wegener (1998b) gave 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 increased attention to message quality (see also DeBono and Harnish, 1988; Wheeler, Petty and Bizer, 2005).

Additionally, matching message contents and/or frames with personality types might influence attitude change by other mechanisms under other circumstances. For example, another possibility is that when a message is matched to the person, people might come to accept the message position simply because the message 'feels right' (Cesario, Grant and Higgins, 2004) or is easier to process (e.g. Lee and Aaker, 2004). These simple fluency experiences might influence attitudes under relatively low thinking conditions. Or, the processing fluency and/or the 'feeling right' experience might affect persuasion by influencing thought-confidence (e.g. Tormala, Petty and Briñol, 2002). In consonance with this view, Cesario et al. (2004) found more argument quality effects under fit than non-fit conditions. As described for other variables, we think that this metacognitive mechanism would be more likely to operate under relatively high elaboration conditions.

It is worth noting that most of the matching (or tailoring) literature has examined human characteristics, such as motives, personality and attitudes that are assessed by reliance on what people consciously and deliberately report about their self-concept. However, just as people can hold conscious, easily reportable self-conceptions, there can be less consciously held self-concept aspects as well (McClelland, 1985; Wilson et al., 2000). Thus, there might be other automatically accessible individual differences relevant to attitude change. Matching persuasive messages to those automatic aspects of the self-concept, and studying the combinatory effects associated with both explicit and implicit individual differences constitute important avenues for future research (e.g. Briñol, Petty and Wheeler, 2006; Wheeler et al., 2005).

Effects on recipients

Many recipients' variables are relevant for persuasion – they range from motives and abilities to individual differences in personality (see Briñol and Petty, 2005, for a review). For example, the kind of behavior in which the recipient is involved (e.g. head nodding vs head shaking) can have an impact on persuasion by different mechanisms (Briñol and Petty, 2003; Petty and Briñol, 2006). Similarly, the ease with which thoughts come to mind can influence attitude change through a variety of mechanisms (e.g. Tormala, Briñol and Petty 2006a; Tormala, Petty and Briñol, 2002). Another aspect that has been studied extensively in this domain is the mood of the target of persuasion. In consonance with the ELM, prior research has shown that a person's mood can serve in multiple roles (e.g. argument, cue; affecting direction and amount of processing; see Petty and Wegener, 1998a, for a review).

When elaboration is low, persuasion-relevant variables such as emotion have an impact on attitudes through relatively low effort peripheral processes (Petty, Schumann et al., 1993). That is, when people are unwilling or unable to scrutinize attitude-relevant information (i.e. low motivation and low ability) emotion is not

likely to influence persuasion by affecting amount or direction of thinking. A number of specific mechanisms have been proposed to explain the effects of emotion under these restricted elaboration conditions, including classical conditioning (Staa and Staats, 1958), use of emotion-based heuristics (e.g. 'I feel good, so I must like it' Chaiken, 1987) and misattribution of one's emotional state (Zillmann, 1983). In each case, however, the effect of emotion is direct such that positive states lead to more persuasion than negative ones.

Under moderate elaboration conditions (i.e. when people are not constrained to either high or low elaboration), emotional states have been shown to impact persuasion by influencing the extent of processing that a persuasive message receives. Under these conditions of moderate elaboration (e.g. low motivation but high ability, moderate motivation and ability), a recipient's mood can be used to decide whether to think or not about the persuasive proposal. Most studies have compared happiness to sadness. According to Mackie and Worth (1989), happiness interferes with cognitive capacity as compared to a neutral state resulting in a decrease in elaborative processing (Mackie and Worth, 1989). According to the feelings-as-information viewpoint (Schwartz et al., 1991; Schwarz and Clore, 1983) sadness and other negative states indicate that the current environment is problematic, motivating a high level of effortful processing, whereas positive states indicate that the current environment is safe, indicating that a low level of cognitive effort is satisfactory. In a related argument, Tiedens and Linton (2001) suggested that sadness is typically associated with less confidence than happiness leading to more thinking in an effort to reduce uncertainty. According to the hedonic contingency view (Wegener, Petty and Smith, 1995), individuals in a happy mood wish to maintain this state and are thus highly sensitive to the hedonic implications of messages that they encounter. Because of this, they may be motivated to avoid processing information that might threaten their happiness (such as counter-attitudinal communications). Thus, there are several accounts related to both motivation and ability available to explain the typical finding that when thinking is unconstrained, happiness often leads to decreases in the extent of message processing compared to sadness. The end result of this decreased thinking is that the attitudes of people in a happy state tend to be less affected by the quality of the arguments in a message than are people in a sad state.

Finally, under high elaboration conditions, the impact of emotion works by different, more cognitively effortful processes. That is, when a person already has high motivation (e.g. the topic is personally relevant, such as having to take a comprehensive test for graduation in the near future) and ability (e.g. the message is relatively easy to understand and they have time to read it), affect is not likely to influence how much people elaborate. In these circumstances, people already are motivated and able to think about that information, so elaboration is not going to change as a function of transitory affect. In these thoughtful circumstances, of course, affect still can influence persuasion but it is likely to do so by affecting other processes. First, one's emotions can be scrutinized as a piece of evidence relevant to the merits of an attitude object (e.g. Martin, 2000). Second, according to the associative network theories, emotions can influence memory processes such that retrieval of emotionally congruent information is facilitated and emotionally incongruent information is inhibited.

mation is inhibited (Blaney, 1986; Bower, 1981; Clark and Isen, 1982). Because of this, under high thinking conditions emotions have been shown to bias the thoughts that come to mind about a persuasive message (Petty, Schumann et al., 1993), and has increased the perceived likelihood of emotionally congruent versus emotionally incongruent consequences (DeSteno et al., 2000; Wegener et al., 1994).

Finally, under high elaboration, recent research has shown that emotion can affect 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 and Linton, 2001). If emotion influences thought confidence, then people in a happy mood should be more reliant on their thoughts than people in a sad mood. In fact, Briñol, Petty and Barden (2007) found that when placed in a happy state following message processing, attitudes and behavioral intentions were more reliant on valenced thoughts to the presented arguments than when placed in a sad state following the message. Under high elaboration conditions (i.e. need for cognition) and when confidence follows rather than precedes one's thinking, we found that argument quality had a larger impact on attitudes for happy than sad participants.

This is a particularly interesting pattern because numerous prior studies on mood and persuasion that manipulated argument quality showed that argument quality effects are typically greater for sad than for happy individuals (e.g. Mackie and Worth, 1989). In this prior research, however, emotion was manipulated *prior to* the message and affected the extent of message processing (with sad people processing more than happy people). In our studies, emotion was manipulated *following* message-relevant thought when people are presumably interested in considering the validity of their thoughts. The opposite interactions of emotion with message quality are only explicable when considering the multiple mechanisms through which emotion can influence persuasion. Furthermore, Briñol, Petty and Barden (2007) found that when happiness or sadness followed message processing, but motivation to think was low, the emotional state served as a simple cue, with participants being more persuaded when they were induced to feel happy than sad regardless of argument quality. As noted earlier, given that emotion can influence persuasion by several means in different situations or for different people, it is essential to understand the underlying mechanism (i.e. does emotion serve as a cue, affect the extent of processing, or confidence in one's thoughts?) in order to predict whether happiness or sadness is superior for inducing persuasion and for the subsequent attitude strength consequences.

Summary and conclusion

We now know that persuasion is a complex, though explicable process. By understanding the basic mechanisms of attitude change, we now know that the extent and nature of a person's thoughts towards external information are often more important than the information itself, and that the thoughts people generate towards social information determine judgments only to the extent that people have confidence in them.

In the present article, the main psychological processes by which variables in the persuasion setting can influence attitude change were described. Briefly mentioned those mechanisms are that persuasion variables can: (a) affect the amount of information processing; (b) bias the thoughts that are generated or (c) bias one's confidence in those thoughts (or other structural features); (d) serve as persuasive arguments or evidence or (e) affect attitudes by serving as simple cues and heuristics. Notably, any given variable, whether part of the source, message, recipient or context, is capable of serving in these roles. By grouping the persuasion processes into meaningful categories, we aimed to provide a useful guide to organize and facilitate access to key findings in this literature, and to maximize the chances of designing effective research and interventions.

This article has argued for the importance of focusing on the study of the psychological process underlying persuasion. That is important for a number of reasons. First, as described for numerous variables, different persuasion outcomes for the same variable are possible when operating through different mechanisms (e.g. high credible sources or recipients in happy mood have been found to increase or decrease persuasion in different situations). Second, even when two different processes result in the same extent of persuasion, the consequences of this persuasion can differ. Attitudes changed through low elaboration processes (e.g. heuristics) are less stable, resistant and predictive of behavior than when the same amount of change is produced by these variables via high thinking processes (e.g. biasing the thoughts generated). A final contribution of our review has been to specify under what circumstances the different processes are more likely to influence our judgments, such as when variables precede or follow thought generation, and when the extent of thinking is relatively low, medium or high.

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Notes

1. Although other social psychologists have proposed different ways to classify the basic processes underlying social judgment (e.g. Kruglanski and Thompson, 1999), we believe that the finite set of processes outlined here is the most useful approach to distinguish the qualitatively different steps that can be involved in producing a judgment under different conditions (for an extended discussion, see Petty and Briñol, in press).
2. The *argument quality technique* is a procedure designed to assess mechanisms relevant to persuasion, such as the extent of information processing. In this procedure, participants are exposed to a message containing either strong or weak arguments. This manipulation was originally designed to assess the extent to which people thought about the content of the message (Petty and Cacioppo, 1986). The arguments are often pre-tested to produce the appropriate pattern of cognitive responding. That is, the strong arguments elicited mostly favorable thoughts and the weak arguments elicited mostly unfavorable thoughts when people were instructed to think carefully about them. It

is important to note that both the strong and weak arguments argue *in favor* of the proposal, but the strong arguments provided more compelling reasons than did the weak arguments. This manipulation should be clearly distinguished from other forms of message variations, such as arguing either in favor of or against the proposal. Because the argument manipulation is used to assess how much thinking people are doing about the message, all arguments need to argue for the same position – but only with high or low convincingness. Because both sets of arguments are in favor of the issue, they may be equally persuasive if people don't think about their implications. Individuals not thinking about the message carefully may respond simply to the number of arguments presented, or their initial gut reaction to the proposal (e.g. Petty and Cacioppo, 1984b; see Petty and Wegener, 1998a). The more attention paid to the information provided, however, the greater the difference in subsequent attitudes to strong versus weak arguments. In this approach to argument quality manipulations, the variable of interest (e.g. source credibility) precedes the reception of the message.

3. In addition to using argument quality to assess the extent of thinking (see note 2), it has been used in the self-validation paradigm to affect the valence of the thoughts. When used in the self-validation paradigm, the variable of interest (e.g. source credibility) typically follows the message presentation so that it cannot affect the extent of thinking about the message.

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