

A Metacognitive Model of Attitudes

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The Cohen and Reed model of attitudes provides a useful addition to the literature. This article relates their framework to a metacognitive model of attitudes suggesting that attitude objects are associated not only with positive and/or negative evaluative tags but also with validity tags. According to this model, an attitude can be described as univalent (either positive or negative associations exist), explicitly ambivalent (both positive and negative associations exist and are endorsed), or implicitly ambivalent (one evaluative association is endorsed, and the opposite exists but is rejected).

In their provocative article, Cohen and Reed (2006, in this issue) note that researchers recently have presented two challenges to the traditional view of attitudes. One asserts that attitudes are temporary constructions rather than memory-based entities (Schwarz and Bohner 2001), and the other contends that people can possess two independent attitudes (explicit and implicit) rather than one unified position (Greenwald and Banaji 1995; Wilson, Lindsey, and Schooler 2000). Cohen and Reed present a framework that accommodates these new developments. Their framework has much to offer, and I especially appreciated the metacognitive aspects of their model because it fits well with a metacognitive approach to attitudes that my colleagues and I have been developing (see Petty et al., forthcoming; Petty et al. 2006; Petty, Wheeler, and Tormala 2003).

In our metacognitive model, attitudes are conceived as object-evaluation links (also Fazio 1995) but with the addition of validation tags (see fig. 1). The model draws on work suggesting the independence of positive (approach) and negative (avoidance) tendencies (e.g., Cacioppo, Gardner, and Bernsten 1997), as well as research on cognitive negation (e.g., Gilbert 1991), attitude confidence (e.g., Gross, Holtz, and Miller 1995), and thought validation (e.g., Kruglanski 1980; Petty, Briñol, and Tormala 2002). The model recognizes that not only do people have quick evaluative associations to a wide variety of attitude objects (e.g., Bargh et al. 1992), but they also may consider whether these evaluative associations are valid reflections of their own personal assessment of the object. This validity checking is captured in Cohen and Reed's (2006, in this issue) notion of the representational sufficiency of an attitude. However, we believe that this check-

ing need not occur online but with rehearsal can stem from a prestored tag (cf. Kawakami et al. 2000).

Following the validity assessment, there are a variety of additional checks that people can make (given sufficient motivation and ability) to determine whether the attitude should be relied on to guide behavior. For example, Fabrigar et al. (2006) showed that people were more likely to use their attitudes as a guide to behavior when their attitudes were based on multiple consistent dimensions of knowledge rather than a single base even though there were no differences in attitude certainty. The idea is that when attitudes had multiple bases, people were more willing to extrapolate the utility of the attitude for a new situation than when the attitude was based on a single dimension. This finding is compatible with Cohen and Reed's (2006, in this issue) functional sufficiency idea.

A few examples of possible attitude structures suggested by the metacognitive model are presented in figure 1. The top panel represents a teenager whose friends smoke and who has mostly positive associations (a univalent attitude). The yes (or high confidence) tag may come about because some nonsmoking friends keep asking if smoking really is good and the person is constantly defending smoking. If the evaluation is never questioned, the validity tag might not develop. In the middle panel, parents discover their child smokes, and they begin to deliver strong antismoking messages. Our smoker now recognizes that there are also negative aspects of smoking and begins to feel ambivalence (Priester and Petty 1996). Finally, in the bottom panel, our smoker's feelings have evolved to where any good aspects of smoking are completely rejected, and only the bad side is endorsed. At this point there is no longer any conscious ambivalence.

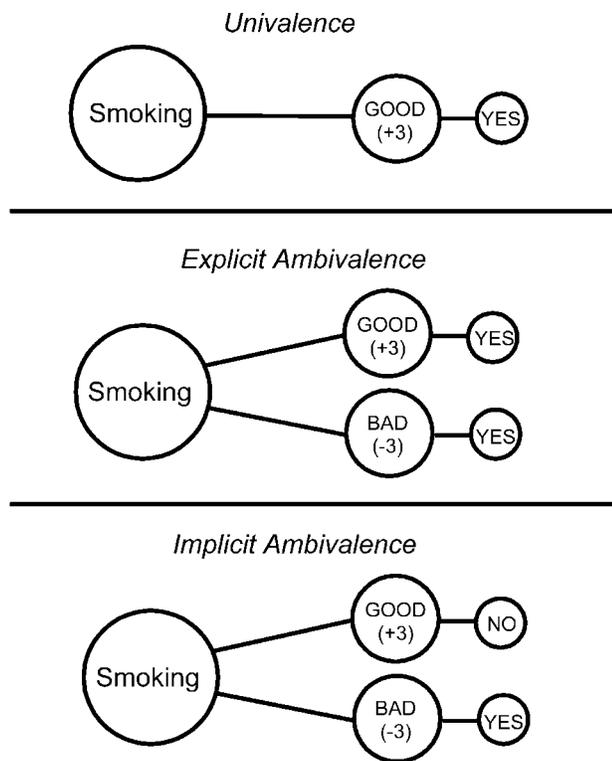
Across the three panels of figure 1, an illustration of attitude change is provided. (When our metacognitive model refers to situations in which one valence represents a changed attitude, we have referred to it as the PAST—Past Attitudes are Still There—model [Petty et al. 2003; Petty et al. 2006].) In contrast to classic models and assumptions

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FIGURE 1

THREE EXAMPLE ATTITUDE STRUCTURES ACCORDING TO THE METACOGNITIVE MODEL OF ATTITUDES



NOTE.—The depictions are oversimplifications of full attitude structures, as one can add positive and negative belief and emotion tags with their associated validity tags.

about attitude change (e.g., see Andersen 1971), the old evaluative association does not disappear; rather, it is still linked to the attitude object but negated. An intriguing aspect of this metacognitive approach is that if the invalidity tag is not retrieved for some reason (e.g., insufficient opportunity), both positive and negative evaluations would be activated, producing a state of ambivalence. This ambivalence is implicit since people do not endorse both valences. In a series of studies we have shown that when people's attitudes are changed from one valence to another, although they may report total rejection of the prior attitude and no conscious feelings of ambivalence, they still act as if they are ambivalent. For example, people whose attitudes were changed engaged in greater processing of attitude-relevant information than people who held the same attitude currently but always felt this way (Petty et al. 2006). Enhanced information processing is a well-documented characteristic of explicit ambivalence (e.g., Maio, Bell, and Esses 1996).

Our model diverges from the predictions of a constructivist approach in that constructivists would not expect old attitudes to matter at all once they changed since there is no enduring representation of the old (or new) attitude. In

contrast, the dual attitudes model allows for the existence of old and new attitudes. According to this approach, the old attitude becomes implicit whereas the new attitude is explicit (Wilson et al. 2000). However, according to the dual attitudes approach, the old (implicit) attitude should guide responses when there is little time for reflection (spontaneous situations), and the new attitude should be prepotent only when there is time to think (deliberative situations; see also Dovidio et al. 1997). This model has not emphasized joint activation. Similarly, Cohen and Reed (2006, in this issue, 7) explain dual attitudes as arising when positive and negative reactions stem from "widely different attitude formation mechanisms" such as when attitudes are based on discrepant cognition and affect. Because of the postulated different origins of the dual evaluations, they are generally expected to lead separate lives and to act as "two ships passing in the night" (Cohen and Reed 2006, in this issue, 9). Again, no ambivalence (implicit or otherwise) is expected.

Why postulate a metacognitive validity tag in the attitude structure? Without this, attitudes become the same as evaluative associations. But just because certain objects are associated with something does not mean that the object is that something. For example, just because bread is associated with butter does not mean that anyone believes that bread is butter. Similarly, just because professor primes absentminded and Coke primes good does not mean that the person necessarily believes that professors actually are absentminded or that Coke is good. Associations can come about for a large number of reasons. One is that the person believes in or endorses the association and may express it often, in which case the association does represent the attitude. Another is that some idea is expressed so often in the culture (e.g., "apples are good") that people have ready access to it even if they do not endorse it personally (e.g., Karpinski and Hilton 2001; Olson and Fazio 2004). Indeed, even if a person believes the opposite, the counterassociation may still be a quick one. Imagine a long-standing egalitarian who engages in diversity training for a living. As part of the training, the person must constantly explain stereotypes to people and then express why these stereotypes are wrong. The ready access to stereotypic content should not lead us to label the person as prejudiced. Rather, the attitude structure may be like that in the bottom panel of figure 1 where a quick association is accompanied by an invalidity tag (which may or may not be retrieved on all occasions).

Of course, understanding automatic associations might well be useful in predicting peoples' behavior even if the mere association is not endorsed. Thus, a person who thinks bad (rather than good) whenever a certain group comes to mind might engage in less visual contact when interacting spontaneously with a member of that group (Dovidio et al. 1997). Similarly, a person in whom bread primes butter may be more likely to reach for butter than a person in whom bread primes jam. Measures of automatic association can be useful indirect behavioral indicators of attitudes much as can other indirect indicators that have been used for many years in social psychology (e.g., seating dis-

tance). We should remember that associations (evaluative or otherwise) can come about for reasons other than the fact that the person endorses the association. External influences such as the mass media may be an important source of such associations (which may be negated if lacking in credibility) but so too can internal influences such as one's old attitude.

In sum, what does the metacognitive model say about whether attitudes are constructed or stored? The model concurs with what is probably the dominant view (e.g., Fazio 1995) that there are often stored evaluative predispositions that can influence behavior. However, the model also postulates a validity check of the activated evaluation(s). This validity checking (or retrieval) might initially take some time as a controlled process but can become automated with practice.

With respect to the "dual attitudes" challenge, the model says that dual evaluations can exist, but rather than seeing these as quite independent and necessarily stemming from different processes, the model holds that there can be one unified attitude schema that has both good and bad evaluative tags with their associated validities. When the invalidity tag is not retrieved or easily accessible, the rejected evaluative association can be activated and influence responses.

As an example of a new wave of attitude models that recognize the importance of metacognitive factors, the Cohen and Reed framework is a welcome addition to the literature. It helps to restore some balance to what may have become an overemphasis on automatic and transitory processes in explaining attitudinal phenomena.

REFERENCES

- Andersen, Norman H. (1971), "Integration Theory and Attitude Change," *Psychological Review*, 78 (3), 171–206.
- Bargh, John A., Shelly Chaiken, Rajen Govender, and Felicia Pratto (1992), "The Generality of the Automatic Attitude Activation Effect," *Journal of Personality and Social Psychology*, 62 (6), 893–912.
- Cacioppo, John T., Wendy L. Gardner, and Gary G. Berntsen (1997), "Beyond Bipolar Conceptualizations and Measures: The Case of Attitudes and Evaluative Space," *Personality and Social Psychology Review*, 1 (1), 3–25.
- Cohen, Joel B. and Americus Reed II, "A Multiple Pathway Anchoring and Adjustment (MPAA) Model of Attitude Generation and Recruitment," *Journal of Consumer Research*, 33 (1), 1–15.
- Dovidio, Jack F., Kerry Kawakami, Craig Johnson, Brenda Johnson, and Aidaiah Howard (1997), "On the Nature of Prejudice: Automatic and Controlled Processes," *Journal of Experimental Social Psychology*, 33 (5), 510–40.
- Fabrigar, Leandre, Richard E. Petty, Steven M. Smith, and Stephen L. Crites (2006), "Understanding Knowledge Effects on Attitude-Behavior Consistency: The Role of Knowledge Amount, Complexity, and Relevance," *Journal of Personality and Social Psychology*, 90 (4), 556–77.
- Fazio, Russell H. (1995), "Attitudes as Object-Evaluation Associations: Determinants, Consequences, and Correlates of Attitude Accessibility," in *Attitude Strength: Antecedents and Consequences*, ed. Richard E. Petty and Jon A. Krosnick, Mahwah, NJ: Erlbaum, 247–82.
- Gilbert, Daniel T. (1991), "How Mental Systems Believe," *American Psychologist*, 46 (2), 107–19.
- Greenwald, Anthony G. and Mahzarin R. Banaji (1995), "Implicit Social Cognition: Attitudes, Self-Esteem, and Stereotypes," *Psychological Review*, 102 (1), 4–27.
- Gross, Sharon R., Rolf Holtz, and Norman Miller (1995), "Attitude Certainty," in *Attitude Strength: Antecedents and Consequences*, ed. Richard E. Petty and Jon A. Krosnick, Mahwah, NJ: Erlbaum, 215–46.
- Karpinski, A., and James L. Hilton (2001), "Attitudes and the Implicit Association Test," *Journal of Personality and Social Psychology*, 81 (5), 774–88.
- Kawakami, Kerry, Jack F. Dovidio, Jasper Moll, Sander Hermsen, and Abby Russin (2000), "Just Say No to Stereotyping: Effects of Training in the Negation of Stereotypic Associations on Stereotype Activation," *Journal of Personality and Social Psychology*, 78 (5), 774–88.
- Kruglanski, Arie (1980), "Lay Epistemo-Logic Processes and Contents: Another Look at Attribution Theory," *Psychological Review*, 87 (1), 70–87.
- Maio, Gregory R., David W. Bell, and Victoria M. Esses (1996), "Ambivalence in Persuasion: The Processing of Messages about Immigrant Groups," *Journal of Experimental Social Psychology*, 32 (6), 513–36.
- Olson, Michael and Russell H. Fazio (2004), "Reducing the Influence of Extrapersonal Associations on the Implicit Association Test: Personalizing the IAT," *Journal of Personality and Social Psychology*, 86 (5), 653–67.
- Petty, Richard E., Pablo Briñol, and Zakary L. Tormala (2002), "Thought Confidence as a Determinant of Persuasion: The Self-Validation Hypothesis," *Journal of Personality and Social Psychology*, 82 (5), 722–41.
- Petty, Richard E., Pablo Briñol, Zakary L. Tormala, and Duane T. Wegener (forthcoming), "The Role of Meta-Cognition in Social Judgment," in *Social Psychology: A Handbook of Basic Principles*, 2nd ed., ed. E. Tory Higgins and Arie Kruglanski, New York: Guilford.
- Petty, Richard E., Zakary L. Tormala, Pablo Briñol, and William B. G. Jarvis (2006), "Implicit Ambivalence from Attitude Change: An Exploration of the PAST Model," *Journal of Personality and Social Psychology*, 90 (1), 21–41.
- Petty, Richard E., Christian S. Wheeler, and Zakary L. Tormala (2003), "Persuasion and Attitude Change," in *Handbook of Psychology*, Vol. 5, *Personality and Social Psychology*, ed. Theodore Millon and Melvin J. Lerner, Hoboken, NJ: Wiley, 353–82.
- Priester, Joseph R. and Richard E. Petty (1996), "The Gradual Threshold Model of Ambivalence: Relating the Positive and Negative Bases of Attitudes to Subjective Ambivalence," *Journal of Personality and Social Psychology*, 71 (3), 431–49.
- Schwarz, Norbert and Gerd Bohner (2001), "The Construction of Attitudes," in *Blackwell Handbook of Social Psychology*, Vol. 1, *Intraindividual Processes*, ed. Abraham Tesser and Norbert Schwarz, Oxford: Blackwell, 436–57.
- Wilson, Timothy D., Samuel Lindsey, and Tonya Y. Schooler (2000), "A Model of Dual Attitudes," *Psychological Review*, 107 (1), 101–26.