A Metacognitive Approach to "Implicit" and "Explicit" Evaluations: Comment on Gawronski and Bodenhausen (2006)

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A metacognitive model (MCM) is presented to describe how automatic (implicit) and deliberative (explicit) measures of attitudes respond to change attempts. The model assumes that contemporary implicit measures tap quick evaluative associations, whereas explicit measures also consider the perceived validity of these associations (and other factors). Change in explicit measures is greater than implicit measures when new evaluative associations are formed and old associations are rejected. Implicit measure change is greater than explicit when newly formed evaluative associations are rejected. When implicit and explicit evaluations conflict, implicit ambivalence can occur. The authors relate the MCM to the associative-propositional evaluation model and explain how the MCM builds on the attitude strength assumptions of the elaboration likelihood model of persuasion.

Keywords: attitudes, persuasion, implicit, metacognition, elaboration

The attitude concept has been an important one in social psychology since its earliest days (Allport, 1935). After a focus on attitude measurement in the 1920s, the field turned to the study of attitude change in the 1950s with the pioneering studies of Carl Hovland and his group at Yale (see McGuire, 1996). Various definitions of attitudes have been offered, but the field has coalesced on viewing attitudes as closely tied to evaluation—one's likes and dislikes, what one favors or disfavors, supports or opposes. Beyond this agreement, recent attention has focused on two seemingly different kinds of evaluation—those evaluations that come to mind quickly when confronted with an attitude object and those we express with at least a moment of reflection. The former have been referred to as automatic or implicit attitudes, whereas the latter are referred to as deliberative or explicit attitudes. People are aware of their explicit evaluations, as they are reported directly, but are not necessarily aware of their implicit evaluations (see Petty, Fazio, & Briñol, in press, for further discussion).

Although the implicit–explicit attitude distinction has become very popular recently (e.g., Greenwald & Banaji, 1995; Wilson, Lindsey, & Schooler, 2000), it has been around in one form or another for a long time. For example, in their classic treatise on persuasion, Hovland, Janis, and Kelley (1953) defined attitudes as "implicit responses" that were "sometimes unconscious" and were "oriented toward approaching or avoiding a given object, person, group, or symbol" (p. 7). Notably, attitudes were contrasted with

opinions, which were "verbal answers that one covertly expresses to [oneself]" (p. 8). These private opinions were further distinguished from public opinions that could be susceptible to social desirability motives. Today, one might say that their use of the term *attitudes* refers to implicit attitudes or underlying evaluative (approach/avoidance) associations, whereas the term *opinions* refers to explicit or deliberative attitudes. Although in Hovland's day, all that could be measured were explicit attitudes (and thus their persuasion work focused on opinion change), more recently several measures have been proposed to tap into one's more automatic evaluative tendencies (e.g., Fazio, Jackson, Dunton, & Williams, 1995; Greenwald, McGhee, & Schwartz, 1998).

Hovland and colleagues (1953) assumed that explicit (opinions) and implicit attitudes would generally correspond (and that each could affect the other), but the available research now makes it clear that these constructs can sometimes be quite different. The goal of the Gawronski and Bodenhausen article (2006) was to account for such discrepancies. Explaining these discrepancies is important, and their associative-propositional evaluation (APE) model has much to contribute to this understanding. After describing the APE model briefly, we relate it to our own approach to understanding explicit–implicit divergence.

The APE Model

The APE model distinguishes between associative evaluations (implicit attitudes, defined as "automatic affective reactions"; Gawronski and Bodenhausen, 2006, p. 696) and propositional evaluations (explicit attitudes, defined as "evaluative judgments that are based on syllogistic inferences"; Gawronski and Bodenhausen, 2006, p. 694). The former are assessed (more or less) with contemporary implicit measures such as the Implicit Association Test (IAT; Greenwald et al., 1998) and evaluative priming procedure (Fazio et al., 1995), whereas the latter are assessed with explicit self-reports of evaluation (e.g., semantic differential scales). Gawronski and Bodenhausen (2006) note that the most important feature that distinguishes the two kinds of evaluations is

the independence and dependence, respectively, of the evaluations on validation processes. That is, associative evaluations can have an impact (on implicit measures) regardless of whether the person considers the evaluation to be true or false, but propositional evaluations have an impact (on explicit measures) only when considered to be true. Because association and propositional processes are presumed to reside in independent mental systems (e.g., Deutsch & Strack, 2004), the two attitudes can be affected and act independently. In particular, the APE model outlines how some attitude change manipulations might affect both explicit and implicit, implicit but not explicit, or explicit but not implicit measures. Furthermore, when a manipulation affects both, it could be that the implicit measure mediates the effect of the manipulation on the explicit measure or that the explicit measure mediates the effect of the manipulation on the implicit measure. In addition to these four core outcomes, the APE model describes additional cases that appear to represent combinations of the first four (e.g., their Case 5 is Case 2 + Case 3; Case 6 = Case 1 + Case 3).[1]

In addition to using the APE model to explain various data patterns, the model is compared with prior models of persuasion such as the elaboration likelihood model (ELM; Petty & Cacioppo, 1986; Petty & Wegener, 1999). Gawronski and Bodenhausen (2006) note correctly that, unlike the APE model, the ELM does not distinguish between two different kinds of attitudes. Rather it treats attitudes as a unitary construct. In the Hovland tradition, the ELM aims to explain evaluations that people endorse on traditional attitude scales that are assumed to stem (at least in part) from stored representations. Understanding these evaluations is important because of their impact on perception, judgment, and behavior. Indeed, people have been known to die in support of their explicit attitudes, but to date there is no evidence that people are willing to passionately defend their unendorsed automatic associations.[2] Nevertheless, because the ELM has not explicitly addressed discrepancies observed between attitudes measured with automatic and deliberative measures, we introduced a metacognitive model (MCM) of attitude structure to account for these discrepancies. Notably, consistent with the ELM, the MCM treats attitudes in a more integrated way than does the APE model and other dual-attitudes approaches (e.g., Wilson et al., 2000). In the limited space available, we briefly describe the MCM, the ELM, and how these relate to the APE and to each other.

The Metacognitive Model (MCM) of Attitude Structure

The MCM of attitude structure was first presented in 1998 (Petty & Jarvis, 1998), appeared in print in 2003 (Petty, Wheeler, & Tormala, 2003), and has been elaborated since (e.g., Petty, 2006; Petty & Briñol, in press). The MCM was developed to account for a discrepancy we observed between automatic and deliberative attitude measures following an attitude change manipulation. In a 1998 study (Petty & Jarvis, 1998; published as Petty, Tormala, Briñol, & Jarvis, 2006, Study 1), participants were initially conditioned to like or dislike a target individual. This induction was effective on both explicit (self-report) and implicit (evaluative priming) measures. Following this, participants received information about the opinions of the target individual on several important issues that either supported or contradicted the participant's own views. When this manipulation conflicted with the initial conditioning, it reversed the valence of the attitude when

assessed with the explicit measure. However, on the implicit measure, evidence of both the old and the new attitude were evident.

Figure 1 diagrams the presumed attitude structure prechange (Panel A) and postchange (Panel D) according to the MCM.[3] The figure depicts the conditions of the Petty et al. (2006) study in which participants were initially conditioned to be positive (Panel A) and then exposed to negative information (Panel D). The MCM considers both evaluative associations (links between attitude objects and stored evaluations) as well as the perceived validity of those associations. In the MCM, because the evaluative associations are just associations, they can stem from many sources (e.g., personal experiences, beliefs or wishes, cultural norms). Furthermore, people can be aware of these associations or not and endorse them or not. If people are not aware of the association, then explicit endorsement does not follow.[4] If an evaluative association comes to mind and is not invalidated, it is assumed to be correct and contributes to the explicit judgment. Because people may not be able to retrieve invalidity tags quickly, and the route to the invalidity tag is through the evaluative association, negated evaluative associations will still impact implicit measures that rely on rapid association.

In our example in Figure 1, the person starts out following evaluative conditioning with an association between the target person and a positive response. Following the conflicting opinion information, an association between the target person and negativity is formed and the original positive association is rejected. Because the original positive association is not removed but is merely negated, the person ends up going from just a positive association to both a positive and a negative association. Thus, a measure of quick evaluative association (evaluative priming measure) provided evidence of both positive and negative associations to the target person, but the deliberative measure (self-report of evaluation) indicated only the newly endorsed negativity. Thus, this study (and the depictions in Panels A and D of Figure 1) provides an example of attitudes changing more on an explicit than an implicit measure.

According to the MCM, it is also possible for implicit attitude measures to show greater change than explicit measures. This possibility is depicted in Panels A and C of Figure 1. The condi-

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[1] It is interesting to note that if one considered all possible combinations of the four core cases, one would have six rather than just four additional possibilities. Although some of these are more likely than others, to the extent that the impact of compound attitude change manipulations are allowed, it would appear that all possible combinations of the four core processes are conceptually possible.

[2] This does not mean that such associations are unimportant. To the contrary, work on mere evaluative association has contributed richly to the study of attitudes.

[3] When the MCM is applied to situations of attitude change, we have referred to it as the past attitudes are still there (PAST) model (Petty et al. 2003, 2006). Although we depict changes in valence, the model could allow for a limited number of other stored representations such as a change from "very good" to "slightly good" (Ostrom & Gannon, 1996).

[4] Endorsement (validation) can be represented as true/false, confidence/doubt, yes/no, or even good/bad. If a validity tag is retrieved along with the evaluative association, then there is no need for an online validation process.
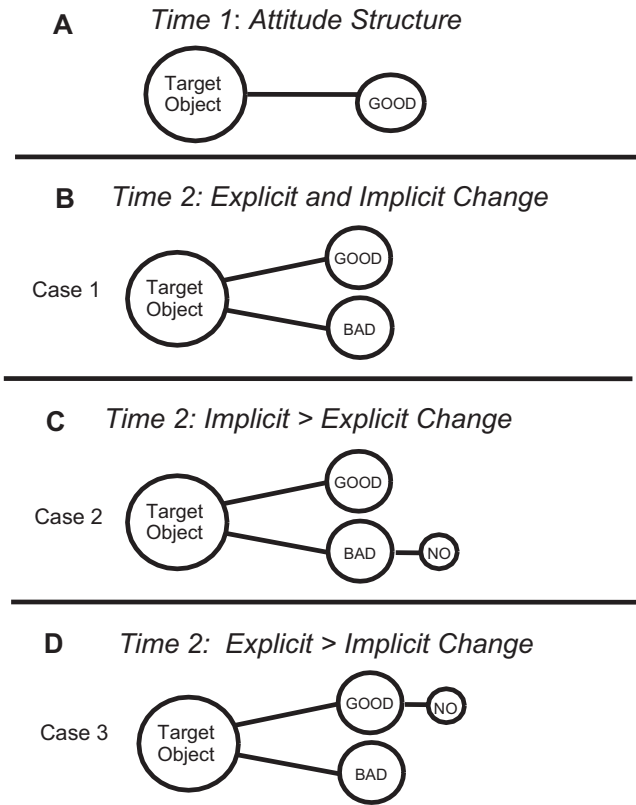
A   *Time 1: Attitude Structure*

B   *Time 2: Explicit and Implicit Change*

Case 1

C   *Time 2: Implicit > Explicit Change*

Case 2

D   *Time 2: Explicit > Implicit Change*

Case 3

Figure 1. Panel A represents positive initial attitudes at Time 1. Panels B, C, and D represent three possible attitude structures following an attitude change manipulation according to the metacognitive model of attitude structure.

tions necessary to produce this pattern also start with establishing a new evaluative association. However, in this case it is the new association that is negated rather than the old one. Various examples of this possibility exist in the persuasion literature. Perhaps the most obvious is work on the sleeper effect (see Kumkale & Albarracín, 2004, for a review). In this paradigm, people are exposed to a very strong persuasive message (counter to a person's initial attitude), but this strong message is then discounted (e.g., claimed to be false or attributed to a low credible source). The presence of a new evaluative association (from the strong message) should produce change in the implicit measure, but the negation of the new association (from the discounting cue) should leave the explicit measure unchanged. Although the explicit measure does not show change initially, over time change emerges (i.e., the sleeper effect). Viewed from the perspective of the MCM, what happens over time is that the negation is forgotten (or dissociated) so that the evaluative association formed at Time 1 can have an impact on the explicit measure. Indeed, although it has never been tested, the MCM anticipates that in a sleeper effect paradigm, those who show the largest discrepancy between explicit and implicit measures at Time 1 (i.e., large change on implicit and small change on explicit) would show the largest sleeper effect.

Finally, Panels A and B of Figure 1 depict a situation in which both explicit and implicit attitudes change in response to some

manipulation, because the manipulation produces a new evaluative association and neither the old nor the new association is negated. The three depictions of attitude change in Panels B–D represent the core aspects of the MCM. Various subcases can be established by varying the strength of the depicted associative links. For example, Figure 2 takes Panel D of Figure 1 and considers two possibilities: (a) one in which the initial and to-be-negated association is quite weak but the new association is quite strong (left panel) and (b) one in which the initial and to be negated association is quite strong but the new association is quite weak (right panel). In the first case, the explicit measure should show considerably more change than the implicit measure, whereas in the second the explicit may show only slightly (if any) more change than the implicit.[5]

The MCM and APE: Similarities and Differences

There are various similarities and differences between the MCM and APE models. Most obviously, both consider evaluative associations as well as their truth values (validation processes). Both imply that changing attitudes is more effectively done with establishing new evaluative associations rather than merely negating old ones. Regarding differences, whereas the associations in the APE model are characterized as momentary affective reactions, the evaluative associations in the MCM are general stored evaluations that can be based on either affect or cognition and can stem from either associative or propositional processes. We suspect that at least some of the new implicit measures can tap not only momentary affective reactions (or stored affectively based evaluations) but also evaluations that are cognitively based. Furthermore, in the MCM, as long as the associative or propositional process leads to an evaluative association, the structural consequences are the same. Thus, instead of focusing on whether an evaluative association stems from associative or propositional processes (or affective versus cognitive processes), what matters more in the MCM is the strength of the evaluative association(s) and whether the association(s) are endorsed (see Figures 1 and 2).

Another difference is that with respect to truth values, the MCM allows for affective as well as cognitive validation. In cognitive validation, the attitude is tagged as either true or false, confident or doubtful. In affective validation, attitude expression may be associated with positive or negative affect (e.g., "I feel good about this view," or "I feel bad"). Whereas research suggests that cognitive negation tends to be ineffective in undermining the association (e.g., Gilbert, 1991), we suspect that affective invalidation (affectively punishing one's attitude) may have more impact.

Yet another difference is that the APE model suggests that the truth or falseness of one's evaluative associations is always determined online (i.e., is constructed as needed). In contrast, the MCM assumes that just as people can store the evaluation of an object in long-term memory, so too can they store a confident or doubtful

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[5] As should be apparent from our description, the MCM is indebted to prior work postulating object–evaluation associative links in memory that can vary in strength (e.g., Fazio, 1995), the potential independence of positivity and negativity (e.g., Cacioppo, Gardner, & Berntson, 1997), the presence of validation tags associated with evaluations (e.g., Gross, Holz, & Miller, 1995), and the ineffectiveness of negation at undermining associations (e.g., Gilbert, 1991).
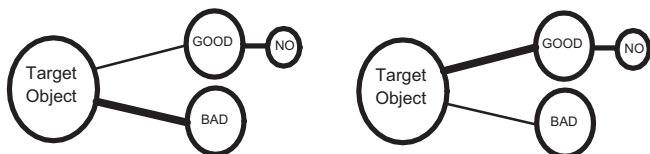
Figure 2. Figure 2 shows Panel D from Figure 1 differentiated into cases in which the evaluative association to bad (as indicated by the thicker line) is stronger than to good (left panel) and in which the evaluative association to good is stronger than to bad (right panel).

tag with that evaluation. This is not to suggest that any associated validity tag is invariant. Rather, just as a retrieved (default) evaluation can be modified with thought, so too can a retrieved (default) validity tag be modified with thought.

Finally, perhaps the most important and unique insight from the MCM is that it implies that classic instances of explicit attitude change (i.e., changing one's self-report from one valence to another) can produce some degree of explicit–implicit ambivalence. For example, consider the attitude change situation we described earlier in which a person was conditioned to hold one attitude and then this attitude was changed. If the attitude structure depicted in Panels A and D of Figure 1 holds, then this person has gone from a structure in which there were only positive associations to one in which there are both positive and negative associations. Although the positive associations are negated, they are still present. Indeed, in a series of studies we have shown that people whose explicit attitudes have changed from one valence to another behave in a more ambivalent manner (i.e., engaging in greater attitude-relevant information processing) than people whose attitudes have not changed (Petty et al., 2006, Studies 3 and 4). We characterized this ambivalence as *implicit* because people do not seem to be aware of it, but yet it is detectable on implicit measures (Petty et al., 2006, Study 2).

Notably, the MCM predicts that not only will implicit ambivalence be established when explicit measures change more than implicit but so too can it occur when implicit measures change more than explicit (Panels A and C of Figure 1). In fact, in another series of studies we have shown that people who have high discrepancies between various self-dimensions (e.g., shyness, self-esteem) as assessed with explicit and implicit measures are more likely to behave in an ambivalent manner than people with low discrepancies (Briñol, Petty, & Wheeler, 2006).

In concluding this section, we note that the three depictions of the MCM in Panels B–D of Figure 1 basically correspond to three of the four core cases articulated by the APE model. In particular, our Cases 2 and 3 roughly correspond to the APE model's Cases 2 and 3. The MCM's Case 1, in which both explicit and implicit attitudes change, is analogous to the APE model's Cases 1 and 4, in which both also change. The MCM does not distinguish cases in which the implicit evaluation mediates the explicit versus the explicit mediates the implicit, because the MCM is a model of attitude structure, and the structural implications of these processes are the same. In this sense, the MCM and APE models are complementary in that the APE model details processes that might result in the structures outlined by the MCM.

The Elaboration Likelihood Model (ELM) of Persuasion

Although the MCM and the APE model have implications for attitude change, they do not replace extant theories of persuasion. A comprehensive theory of persuasion should specify the processes by which the numerous source, message, recipient, and context factors known to influence attitudes operate. The ELM assumes a structure in which attitude objects are linked to stored evaluative representations that are reflected, at least in part, in explicit measures of evaluation. The ELM describes the multiple mechanisms by which any given variable (e.g., source expertise, one's mood) can have an impact on explicit attitudes. Although a full description of the ELM is beyond the scope of this article, at its core the model describes how attitudes can be modified by processes that involve high or low amounts of issue-relevant thinking. Unfortunately, Gawronski and Bodenhausen (2006) mischaracterized the ELM as making a content distinction between message arguments and "other characteristics of the message, such as the expertise of the source" (p. 710). Rather, as explained in more detail elsewhere (e.g., Petty & Wegener, 1999), the ELM holds that any one variable can serve in multiple roles. Thus, source expertise (or one's mood) can affect attitudes by simple association (conditioning) or simple propositional (invocation of a decision heuristic) processes or more complex and effortful elaboration processes (e.g., biasing the thoughts that come to mind).[6]

The degree of thinking (elaboration) is important in the ELM for two reasons. First, the extent of elaboration (how motivated and able people are to think about an issue) determines the role that variables will play in affecting attitudes (e.g., serving as a simple associative or inferential cue, biasing processing). Second, and of most relevance here, greater amounts of elaboration are postulated to produce attitudes that are stronger (i.e., more likely to endure, resist counterpersuasion, and affect judgments and behavior; see Petty, Haugtvedt, & Smith, 1995, for an extended discussion).

The attitude strength prediction is what links the ELM to the MCM. Specifically, the ELM postulates changes in attitude structure that are fleshed out by the MCM. According to the ELM, increased elaboration enhances attitude strength in at least two ways. First, elaboration strengthens the object–evaluation association. Thus, a small number of evaluative thoughts to a proposal likely produce a weak evaluative association, whereas a large number of evaluatively congruent thoughts produce a stronger evaluative association (e.g., Bizer & Krosnick, 2001). The stronger the evaluative association (see Figure 2), the more likely the evaluation is to persist over time and have an impact on judgment and behavior (see Fazio, 1995, for a review). However, a large number of conditioning trials would also produce a stronger evaluative association than would a small number of trials in the absence of any issue-relevant thinking. Notably, then, in addition to increasing the strength of the evaluative association, the ELM

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[6] The ELM lumps mere associative processes and the reliance on heuristics (a propositional process) together under the low effort (peripheral) route to persuasion because the antecedent conditions under which these mechanisms operate are generally the same and so too are some attitude strength consequences (e.g., low resistance to counterpersuasion). We also note that Gawronski and Bodenhausen (2006) make some other mischaracterizations of the ELM, but most of these are irrelevant to the current concerns and are addressed elsewhere (e.g., Petty & Wegener, 1999).

holds that having many evaluatively consistent thoughts is also more likely to increase the perceived validity of the evaluation than is having few issue-relevant thoughts (or a large number of conditioning trials). Indeed, research shows that enhanced elaboration is associated with attitude certainty (Barden & Petty, 2005), and increased attitude certainty increases the strength consequences of attitudes (Gross et al., 1995).

Conclusion

Traditional models of attitude change, including the ELM, consider attitude change to occur when a new evaluative association is endorsed. If there is no change in the underlying evaluative associations, then the change observed on an explicit measure is a "constructed" one that is unlikely to persist unless the same attitude is constructed again and again. With repeated construction, a change in the underlying association could occur. If there is a new evaluative association, but people are not aware of it or it is not endorsed, then no change will be evident on a deliberative assessment of attitudes even though the new evaluative association might be detected with appropriate implicit measures. It is important to note that the change in a measure of evaluative association in the absence of explicit change (or vice versa) is likely to foreshadow an unstable attitude. An index of explicit–implicit evaluative discrepancy could serve as an indicator of explicit attitude strength.

Although we like many features of the APE model, we do not think that it replaces existing models of persuasion any more than the MCM does. Rather, the APE model and the MCM can help to flesh out processes and structures unspecified by models of persuasion. Both the MCM and APE models are incomplete in accounting for antecedents and consequences of change in explicit attitudes. Nevertheless, we believe they are useful supplements to existing persuasion theories.

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