COMMENTARIES

Where Has the Feeling Gone? The Signal Function of Affective States

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In the target article, Forgas (this issue) presents his affect infusion model (AIM), which attempts to account for a wide spectrum of phenomena in the interplay of affect and cognition. Specifically, it is proposed that the model explains how affect influences both what information is processed (i.e., content) and how this information is processed (i.e., process). Forgas is undoubtedly correct in his conclusion that the field needs an integration framework to bring together the numerous, and on the surface sometimes unrelated or even conflicting, findings. Given that his model is one of the few integrative approaches in the field, his work is right on target. Besides the many positive aspects of the AIM, there are some aspects that may deserve a second look. In the remainder of this commentary, I emphasize the signal function of affective states that seems to receive rather little attention within the AIM. I argue that without assuming such a signal function it is difficult to understand mood-dependent processing styles.

Forgas presents convincing evidence that different affective states may elicit different processing strategies. For example, happy and sad individuals differ in the degree to which they exhibit the fundamental attribution error, they show different degrees of eyewitness distortions, and they generate arguments of different persuasive quality. This evidence converges with numerous findings in a variety of domains, for example in stereotyping (Bodenhausen, Kramer, & Süsser, 1994), persuasion (Bless, Mackie, & Schwarz, 1992), creativity and problem solving (Isen , 1987), or memory for scripted behaviors (Bless et al., 1996). The general conclusion of this research holds that minor differences in affective states may result in different processing strategies. These effects can be observed with tasks that do not involve the processing of positively or negatively valenced information.

Although the conclusion that different affective states result in different processing strategies is predicted by the AIM, it remains unclear precisely how this conclusion is derived from the outlined core assumptions of the model. When proposing mood influences on processing strategies, Forgas suggests that happy moods are more likely to elicit a top-down processing style, whereas sad moods are more likely to elicit detailed analyses of the information at hand. In presenting this hypothesis, Forgas refers to other theorizing from which this conclusion can be derived (Bless, 2000; Fiedler, 2000; see also Bless, in press-b). It should be noted that most of the existing evidence pertaining to mood-dependent top-down versus bottom-up processing can also be captured—either directly or indirectly—by other accounts (see Isen, 1987; Schwarz, 1990; Mackie & Worth, 1989; for a discussion of evidence allowing differentiations see Bless & Schwarz, 1999). Although the various accounts share the assumption that happy and sad individuals differ in their reliance on heuristics and general knowledge structures and in their attention to the details of a situation, the models depart in their assumptions about the mechanisms that mediate these differences (see Bless, in press-a).

On one hand, the AIM converges with other models in the general conclusion about mood- dependent processing strategies and claims that the accumulated evidence supports the central hypotheses ("These results make sense in terms of our theoretical predictions and suggest that negative affect promotes a more careful, externally focused, and bottom-up information-processing style …"; Forgas, this issue). On the other hand, however, the model is surprisingly silent on why these processing effects are expected. Addressing this important issue could contribute to a further improvement of the model.

Most explanations of the mood effects on processing strategies quite explicitly, or at least implicitly, build on the notion that individuals' affective states provide some information about an individual's current situation (this does not hold for the capacity approach, which, however, is not favored within Forgas's theorizing). For example, the mood-and-general-knowledge assumption to which Forgas refers

(see Bless, 2000; Bless; in press-a) holds that individuals use their affective states as information about the psychological nature of a given situation. This first step of the model builds primarily on the theorizing offered by Schwarz (1990; Schwarz & Bless, 1991). It assumes that individuals usually feel good in situations that are characterized by positive outcomes or in situations that do not threaten their current goals. In contrast, individuals usually feel bad in situations that threaten their current goals because of the presence of negative outcomes or the absence of positive outcomes. If different situations result in different affective states, individuals may consult their affect as a generally valid and quick indicator of the nature of the current psychological situation. Specifically, positive affective states may inform the individual that a given situation poses no problem, whereas negative affective states may signal that the situation is problematic (for a more detailed discussion, see Schwarz, 1990). As a consequence of the interpretation of a situation as benign or problematic, different processing strategies become likely.

Why do I emphasize the informative function of affective states? This signal function is precisely the core of what affective states are about. We feel whether a situation is comfortable or not, although sometimes we may not even know why (Nisbett & Wilson, 1977). By relying on their feelings, individuals thus have a basis for a global interpretation of a current situation (for the present purpose I restrict this argument to global interpretations of a situation rather than relating it to evaluative judgments in general). This immediate accessibility enables affective states to serve an essential role in individuals' adaptation to the changing conditions of the environment. To support the adaptation to specific situations, a signal needs to be usually valid and easily accessed without extensive processing. The signal function of affective states fulfills precisely these requirements. After all, situations in which we feel bad are usually more problematic than situations in which we feel happy. Moreover, reading one's current affective state appears to be a rather simple task that demands little in terms of cognitive resources. As a consequence, in most situations, attributing one's affective state to a given situation as a default mechanism seems to be a good indicator of the psychological nature of the situation.

The idea that affective states may serve a signal function is not new and has been incorporated in a wide variety of previous approaches. Individuals' affective states have been conceptualized, for example, as "barometers of the ego" (Jacobsen, 1957), as a "source of information" (Nowlis & Nowlis, 1956), or as "monitors" (Pribram, 1970). The approaches differ with respect to their theoretical frameworks and the implications that are assumed to follow from an individual being in a positive or negative affective state. However, they share the assumption that individuals may use the information provided by the affective states and that affective states may thus—at least in part—influence further processes independent of the cognitive material that is made more or less accessible by the respective affective state. Excluding this particular quality of affective states seems to restrict the status of affective states to a by-product of valenced thoughts: Positive or negative thoughts elicit different affective states, and affective states may in turn elicit positive or negative thoughts. By taking this step one reduces the importance of the feeling itself and excludes the possibility that the individual's experience of the feeling itself has an impact on further processing.

Of course it is possible that individuals attribute their affective states to particular situations even though their affective states in fact arise from some other source. When discussing the role of the How-do-I-feel-about-it? heuristic for evaluative judgments, Forgas seems to imply that such false attributions may be the rule rather than the exception. I do not share this view and maintain that false attributions are dramatically overestimated as a result of experimental research, in which experimenters specialize in rapidly switching participants' situations. As in research on human judgment in general, researchers investigating affect and cognition no doubt learn a lot from situations in which a particular mechanism results in apparently erroneous judgments, but this does not imply by any means that the particular mechanism produces generally flawed judgments in the majority of real-world situations (see Funder, 1987, for a differentiation of errors versus mistakes). In other words, misattributions may be far less frequent than implied by Forgas's discussion.

Given the importance of the signal function for understanding mood effects on processing strategies, and given that the AIM is relatively silent about the causes of mood-dependent processing strategies, we are left with (at least) three possibilities. First, the AIM implicitly assumes such a signal function and a role for affective states independent of the information that is made more or less accessible by them. If that is the case, it seems important to spell out this assumption explicitly and to incorporate it into the general model, especially if the mood-dependent processing style is a major prediction of the AIM.

Second, when an informative function of affective states is excluded or restricted to a very narrow range of situations, the AIM needs to provide an alternative explanation for the mood effects on processing style. Within the AIM, such an alternative explanation could, for example, rest on the idea that different affective states make positive or negative material more or less accessible in memory. One may argue that individuals, in evaluating their current situations, do not use their affect as information but rely on the information that comes to mind. Due to mood-congruent recall, individ-

uals in positive affective states will form more positive judgments, and individuals in a negative affective state will form more negative judgments. I am not denying that it is possible to assess the nature of a situation via such a substantive processing mode. However, one needs to acknowledge the implications of such an assumption. Most important, this kind of substantive processing would be rather effortful and time consuming. Moreover, it remains unclear how often individuals would need to engage in such a substantive evaluation of a situation. It seems quite plausible that individuals sometimes assess the nature of situations on the basis of more effortful processing, for example, when the situation is highly important or when they are explicitly instructed to do so. However, it appears rather unlikely that this would be the predominant mode of assessing the nature of a given situation. It seems more likely that individuals in most cases rely on their affective state and use it for interpreting the global psychological nature of the situation. The empirical evidence supports this conclusion. Mood effects on processing styles have been demonstrated to be less likely under conditions that support a substantive processing mode. For example, making the situation more important (Bless, Bohner, Schwarz, & Strack, 1990; Bodenhausen et al., 1994) and providing extra processing time (Mackie & Worth, 1989) reduced the differential impact of affective states on processing strategies.

Third, one may conclude that the AIM does not allow predictions about mood and processing style. This seems a reasonable conclusion if one excludes the signal function mechanism and at the same time is hesitant to accept the notion that individuals, prior to relying on either top-down or bottom-up processing, engage in repeated substantive processing to assess the psychological nature of a given situation. According to my understanding, this possibility would in no way harm the fruitfulness of the proposed model. On the contrary, major integrations and global frameworks greatly benefit from acknowledging boundaries in the explained phenomena.

Note

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We Should Focus on Interpersonal as Well as Intrapersonal Processes in Our Search for How Affect Influences Judgments and Behavior

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Over the past 30 years a large and impressive literature has appeared documenting the effects of our moods and emotions on our social judgments and behavior. Moreover, from the beginning researchers have theorized about and empirically investigated the processes through which these effects may arise.

Thirty years ago very simple processes such as classical conditioning were proposed as the probable mechanisms accounting for such effects as moods influencing attraction toward others (Gouaux, 1971; Griffitt, 1970; Lott & Lott, 1960). Over time, increasingly complex processes have been proposed: moods giving rise to motivated efforts to prolong them or to end them (Isen, 1987; Wegener & Petty, 1994; Wegener, Petty, & Smith, 1995), moods making material in memory with a similar affective tone more accessible (Bower, 1981; Clark & Isen, 1982; Isen, Shalker, Clark, & Karp, 1978), the cognitive appraisals that accompany various emotions making certain evaluations of situations and certain behaviors more likely (Lerner & Keltner, 2000), moods serving as pieces of information from which people draw conclusions (Martin & Stoner, 1996; Martin, Ward, Achee, & Wyer, 1993; Schwarz, 1990; Schwarz & Clore, 1983, 1988), and moods influencing the depth, extent, or creativity of information processing (Isen, Daubman, & Nowicki, 1987; Isen, Johnson, Mertz, & Robinson, 1985). There also have been efforts to specify situational constraints on just when many of these processes influence judgments and behavior. Forgas's AIM model (Forgas, 1995) and his supporting empirical work as described in the target article exemplifies this approach.

Reading Forgas's (this issue) target article as well as other recent summaries of work in this area (e.g., Bless, 2000; Forgas, 2000; Martin & Clore, 2001) makes it clear that substantial progress has been made. We now know a great deal about how affect influences judgments and behavior, and we have evidence pertinent to several distinct processes that may underlie these effects. Researchers such as Forgas are beginning to establish when each process is most likely to operate and thereby when each is likely to influence judgments and behaviors. At times I find myself quibbling with just what certain empirical findings really indicate about underlying processes and just how clear the boundary conditions for the operation of each may be. Still, all told, I greatly admire the work and progress that has been made in this area.

Two Striking Aspects of the Literature on the Influence of Affect on Judgments and Behavior

Having noted my admiration of progress in this area, I find two things to be striking and worrisome about the nature of this literature taken as a whole. First, the processes proposed to mediate the effects of moods and emotions on our interpersonal judgments and behavior are almost exclusively individualistic or intrapersonal in nature. That is, they are generally cognitive processes that occur within a single person's head seemingly independently of ongoing social interactions. Second, and closely related to the first point, empirical work in this area has overwhelmingly taken place outside the context of any sort of meaningful social relationship.[1] At most the research participants have been interacting with strangers. Oftentimes participants react to symbols of people—pictures or descriptions of strangers. Sometimes the individuals are simply given tasks to solve alone. Although no one has said it, an implicit assumption across much of this body of research appears to be that the effects of our moods on our social judgments and behavior are likely to be the same regardless of with whom we are interacting.

Why Should We Care if the Literature is Primarily Intrapersonal in Nature?

Certainly there is nothing wrong with examining intrapersonal processes through which affect may influence judgments and behavior nor with examining how these processes work in situations with minimal or no social interaction. Often, doing so enhances our ability to maintain experimental control. However, when a literature is dominated by such approaches, we neglect effects of moods and emotions on social judgments and behaviors that occur through processes that are fundamentally interpersonal in nature and that may depend importantly on the particular type of relationship we have (or do not have) with the persons with whom we are interacting.

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[1]See Simpson, Rholes, and Nelligan (1992) and Luminet, Bouts, Delie, Manstead, and Rime (2000) for two exceptions to this rule.

Thinking Interpersonally Should Broaden the Array of Behaviors We Think of as Influenced by Affect

One advantage of thinking more interpersonally is that doing so is likely to broaden the array of behaviors that we expect to be influenced by moods and emotions and, therefore, broaden our empirical efforts. Many theorists and researchers have emphasized that emotions serve to alert us to our own needs. They point out that our emotions stop us from doing whatever it is we are doing and redirect our attention to the problem at hand (e.g., Frijda, 1993; Simon, 1967). This emphasis fits well with mood researchers' theorizing that positive moods signal all is well and promote reliance on general knowledge structures whereas negative moods signal a problem and spur people to attend to the specifics of the information at hand (Bless et al., 1996; Bless & Schwarz, 1999). Thinking more interpersonally, however, reminds us that it is also the case that our moods and emotions serve important social communication functions (Fridlund, 1991; Jones, Collins, & Hong, 1991; Levenson, 1994; Miller & Leary, 1992).

For instance, emotions can alert others to our needs and prompt them to address those needs, and thus emotions can help us to mobilize external resources (Buck, 1984, 1989; Clark, Fitness, & Brissette, 2001; Clark & Watson, 1994; Scott, 1958, 1980). Indeed, expressions of emotion signaling our needs to others who care about us may constitute one of the most important ways in which we garner help. Think of the young child who experiences sadness and cries. When in the presence of a parent or other caregiver, the expressions and vocalizations can be a very effective means of garnering help. Expressing sadness or anxiety within the context of a close relationship or one desired to be close has been shown to serve the same function in adult relationships (Clark, Ouellette, Powell, & Milberg, 1987; Simpson et al., 1992). When sadness is experienced in the context of a close relationship, we may expect it to result in outward expressions of the emotion and sometimes even exaggerated expressions in attempts at supplication (Clark, Pataki, & Carver, 1995). Sad and anxious moods may also trigger help seeking and self-disclosures in such a context.

In contrast, our sad or anxious moods may be ignored by others with whom we do not have close relationships and may even seem irritating or inappropriate to them (Hoover-Dempsey, Plas, & Strudler-Wallston, 1986). This, in turn, may lead to efforts at suppression when we are with strangers or people who could take advantage of us. Over time, such efforts may become automatic. However, with rare exceptions (see, e.g., Simpson et al., 1992), we have not investigated effects of sad and anxious moods on choosing to express the emotion (and perhaps even exaggerate it) in the service of seeking help. Neither have we investigated the effects of sad and anxious moods on active attempts at suppression or avoidance of others to whom it would be inappropriate to express these emotions.

To give a second example, in certain contexts angry moods may give rise to free expression and efforts at intimidation. This may occur, for instance, when a powerful person is interacting with a less powerful person not only because expressing anger may be an effective intimidation technique (Clark et al., 1995) but also because angry feelings are associated with status and power in many people's minds and because expressing anger can enhance others' perceptions that one is powerful (Tiedens, 2000). In contrast, expressing angry feelings is seen as less appropriate among those low in status or power (Tiedens, 2000). Consequently, irritable moods may be suppressed and can even lead to social avoidance among such people. It addition, it is noteworthy that expressions of anger decrease liking for the angry person (Clark et al., 1995; Tiedens, 2000). Given this, one may expect irritable moods to be associated with attempts at suppression and avoidance of social interaction in social situations in which the irritable person very much wants the other to like him or her for whatever reason. Yet again, these are not the sorts of effects of affect on behavior that we have tended to study.

Taking a More Interpersonal Viewpoint May Alert Us to Constraints on the Generalizability of Many of Our Current Findings

I argue that a consideration of the interpersonal processes set in motion by our affective states not only will suggest a broader array of effects of affect on judgments and behavior; it also is likely to suggest possible boundary conditions for, and even reversals of, some mood effects reported in the literature. Again, examples may help to make this point.

Consider, for instance, early studies showing that distress or sadness, among adults, increases helping (Cialdini, Darby, & Vincent, 1973; Cialdini & Kenrick, 1976). Presumably this occurs because people experiencing negative affective states wish to improve their moods. Helping accomplishes this because we have been socialized to feel good as a result of helping others (Cialdini & Kendrick, 1976). The fact that negative moods have been shown to increase helping and the idea that individual efforts at mood regulation underlies this fact (i.e., the negative-state relief idea) are well known. However, the people being helped in these studies are typically strangers, and the opportunity to help is generally explicitly brought to the potential helper's attention (Cialdini et al., 1973; Cialdini & Kenrick, 1976).

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In day-to-day life, though, negative states may most often occur when the person him or herself has experienced a loss. In addition, negative states such as sadness, distress, and anxiety, if expressed to others will alert those others that the self is needy (Clark & Taraban, 1991). Moreover, if the other has or desires a close relationship with the sad person, the sadness is likely to elicit help (Clark et al., 1987), which in turn is likely to cause the help giver to feel better (Williamson & Clark, 1989, 1992). Given all this, will negative affective states typically encourage people to go out of their way to help strangers? Maybe not. In everyday life negative moods may typically be suppressed when interacting with strangers who, most often, also will be unlikely to ask a sad person for help. Instead, negative states may trigger seeking close others with whom one feels secure, expression of one's affect to those others, and help seeking rather than help giving. Notably, this too is a form of negative-state relief.

Keeping the same considerations in mind, it is worth asking whether sadness will always trigger effortful, analytic, and vigilant processing (Clark & Isen, 1982; Isen, 1984, 1987; Schwarz, 1990) and prevention-oriented processing styles. Perhaps it does so when one is alone, or with strangers, or with business partners. However, it may not do so in the context of secure, close relationships. Then it may trigger reliance on close others to process information or to alleviate one's mood state. Of course, this is speculative and must await further research. The point simply is that such research is worth doing.

Alternatively, consider some brand new findings reported in the target article. Specifically Forgas has described work in which moods were manipulated and subsequent interactions with a confederate were observed. In contrast to happy participants, sad participants were rated by observers as "significantly less friendly, confident, relaxed, comfortable, active, interested, and competent" when interacting with a confederate (cf. Forgas & Gunawardene, 2000; Figure 1 in the target article, this issue). This is an intriguing finding, but may it be a limited one? The confederate was a stranger in this study, and strangers like sad others less than happy others. Strangers are also unlikely to respond to sadness with increased efforts to help (Clark et al., 1987). Undoubtedly, sad people know these things in an implicit if not explicit way. Thus, it is no wonder that sad people seem less friendly, confident, relaxed, and comfortable when interacting with a stranger than are happy people. Will this particular finding generalize to a well-functioning, secure, communal relationship? Perhaps not. It is appropriate to express sadness in such a relationship (Clark & Taraban, 1991), people selectively choose to express negative emotions in such relationships (Barrett, Robin, Pietromonaco, & Eyssell, 1998; Feeney, 1995, 1999), and partners choose to provide help in response to negative moods in such relationships (Clark et al., 1987; Simpson et al., 1992). The relationship itself may even be strengthened as a result because the helped person is likely to appreciate the sympathy and care (cf. Reis & Shaver, 1988) and the helper is likely to feel good about having helped (Williamson & Clark, 1989, 1992). Thus, sadness may not cause such drops in confidence, relaxation, and comfort within the context of a secure, communal relationship. Again this is admittedly speculative, but again the general point is that there are good reasons to suspect that moods such as sadness will influence interpersonal behavior differently when we are interacting with close others as compared to when we are interacting with strangers.

Finally, consider whether another new finding reported in the target article will necessarily generalize to close relationships. That finding is that "happy participants preferred more direct, impolite requests, whereas sad people preferred more cautious, indirect, and polite requests" (see Figure 2 of the target article, this issue). In these studies participants were interacting either with people who were strangers to them or with no one at all. Might sadness have different effects on the style of requests made in secure, communal relationships? In a communal relationship seeking comfort, support, and help when one is sad is normative. It is what one should do when one is sad. Thus, it seems quite possible that sadness and self-focus may result in people quite readily and directly making requests in close relationships. Of course, this too awaits verification, but it is worth speculating on.

Taking Individual Differences Into Account

Finally, taking a more interpersonal approach to understanding how affect influences judgments and behavior should not stop at taking a person's immediate, current social context into account. It should include taking interpersonally relevant individual differences into account. Attachment theorists, for instance, have long argued that the nature of our interpersonal bonds are central to how we react to and regulate affective states (Bowlby, 1980, 1988). They have also long noted the existence of individual differences in attachment styles (Ainsworth, Blehar, Waters, & Wall, 1978; Bartholomew & Horowitz, 1991; Hazan & Shaver, 1987). There is now ample evidence that within the context of a relationship that society dictates ought to be warm, supportive, and caring, securely attached people react to their own states of anger, sadness, and anxiety in more constructive, help-seeking, and problem-solving manners than do insecurely attached persons. Insecurely attached persons tend to react in more independent and potentially relationship-harming ways (e.g., Kobak, Cole, Ferenz-Gillies, Fleming, &

Gamble, 1993; Kobak & Sceery, 1988; Mikulincer, 1998; Simpson et al., 1992). Thus, a consideration of individual differences in attachment styles may further moderate predictions and findings regarding how negative moods influence judgments and behaviors. Perhaps when anyone judges strangers and when insecure people judge anyone, negative moods will lead to more negative social judgments. However such effects may not occur when secure people judge their own close relationship partners.

Again, all this is speculative, but such speculations may be worth testing. It also may be worth searching for other relationship-relevant individual-difference variables that may moderate reactions to our moods and emotions.

Conclusions

As Forgas makes clear in the target article, we now know a great deal about how moods and emotions influence how individuals process information and how those processes, in turn, can influence judgments and behaviors. However, the literature he reviews focuses on intrapersonal processes and includes studies that have been carried out outside the context of the meaningful, ongoing relationships. Although much has been learned, I suspect that by neglecting interpersonal processes and relationship context, we may have missed many important effects of affect on judgments and behaviors.

There is abundant evidence that much and perhaps most of the emotion we experience in everyday life arises in the context of our social relationships (DeRivera, 1984; Scherer, Wallbott, & Summerfield, 1986; Schwartz & Shaver, 1987; Trevarthen, 1984). For example, Csikszentmihalyi and his colleagues have found that both adolescents and adults are more likely to report feeling happy when they are with friends than when they are alone (Csikszentmihalyi & Larson, 1984; Larson, Csikszentmihalyi, & Graef, 1982), and others have found that joy and anger are much more likely and sadness somewhat more likely to occur in social than in non-social contexts (Babad & Wallbott, 1986). Still others have made the case that highly interdependent relationships are, themselves, likely to be the source of much of the emotion we feel (Berscheid & Ammazzalorso, 2000).

Given that affect often arises in the context of ongoing, meaningful social relationships, perhaps it is time to refocus some of our efforts toward understanding interpersonal effects of moods and emotions and the processes that underlie them. Forgas's AIM model and his related research teach us that there are boundary conditions for when affect will infiltrate intrapersonal cognitive processes and thereby influence behavior and judgments. Awareness that our affective states can influence our behavior through processes that occur between as well as within people may highlight important social-context effects illuminating even more fully when and how affect influences our judgments and behavior. As Ekman and Davidson (1994) noted, interpersonal aspects of moods and emotions have been given short shift by psychologists. The point of this commentary is simply to argue that it is worth changing this state of affairs.

Notes

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Affect as Embodied Information

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If the study of cognition concerns knowledge, the study of emotion concerns value. That is, in contrast to cognitions that are about the presence and absence of attributes, the inclusiveness of categories, and the truth and falsity of propositions, emotions are about the goodness and badness of these things (Ortony, Clore, & Collins, 1988). In this commentary, we argue that the cognitive consequences that follow from mood depend on the information about goodness and badness that is conveyed by pleasant and unpleasant feelings. An alternative possibility is that moods have such consequences because they bring positive and negative concepts to mind (e.g., Forgas, 1995, this issue). However, we think that when affect enters into judgments and decisions, it does so directly through the information embodied in affective feelings and only indirectly by activating positive or negative thoughts.

In addition to conveying information about value, emotions are psychological states, which means that they involve multiple systems (e.g., cognitive, experiential, physiological, expressive, behavioral, etc.), all dedicated to the same evaluation at the same time. Thus, for a person to be in an emotional state of joy or fear, for example, some reflection of that joy or fear should be evident in more than one system. Moreover, each representation of an emotional state appears to have its own function. For example, emotional expressions play a role in the social consequences of affect by conveying affective information to others, and emotional feelings play a role in the cognitive conse-

quences of affect by conveying affective information to oneself.

In response to that proposal, critics often ask, "Why is it necessary to be informed about one's own appraisals?" One answer is that the parallel, distributed nature of cognitive processes is such that the "I" that appraises situations and the "I" that acts on them are not necessarily a single, unitary "I." In this regard, an analogy to the sense of balance is useful. Even though it is our own inner ear that computes whether we are right side up, upside down, or somewhere in between, feelings of balance still provide crucial information. This is presumably true in part because we have limited access to the computations involved in assessing balance. In addition, as in the case of emotional feelings, the urgency felt when feelings of imbalance are intense (i.e., when we are in a state of falling) mobilizes resources to cope with the problem. By being felt, both affective and vestibular cues convey information in a form that also activates attention and motivates change. In contrast, it is probably not the case that feelings of imbalance help us right ourselves by priming thoughts, concepts, or memories about imbalance.

The larger implication of these assertions is that the feelings themselves are informative about goodness and badness, and as such, they may provide a sufficient basis for judgments, decisions, and changes in processing priorities. If so, then many of the effects of mood and emotion may be direct reflections of the information embodied in feelings. It may not be the case, as suggested by priming interpretations of the mood and judgment literature (e.g., Bower, Montiero, & Gilligan, 1978; Forgas & Bower, 1988; Isen, Shalker, Clark, & Karp, 1978), that the influence of moods and emotions depends on the priming of positive and negative concepts and memories. We believe instead that affective feelings provide information about the outcome of appraisal processes and that judgments and processing decisions are made directly from feelings rather than indirectly from thoughts made accessible by feelings (e.g., Clore, 1992; Schwarz & Clore, 1983, 1988, 1996).

In the hope that being explicit will facilitate the systematic study of the effects of mood and emotion, we have recently outlined a set of assumptions basic to our view of affect-as- information processes (Clore et al., 2001). Several of the most basic of these principles are listed here, with brief explanations.

The Information Principle: Emotional Feelings Provide Conscious Information From Unconscious Appraisals of Situations

According to this principle, affective feelings serve as feedback from nonconscious appraisal processes.

We assume that an appraisal process is always active. As a result, in addition to occasional strong emotional feelings, minimal affective cues are always available as evaluations of our current situation (Bargh, 1997; Clore, 1992). Thus, when asked if we want to go to the movies or to eat Chinese food, our affective reactions to the prospect of doing these things is likely to figure into our judgments, regardless of whether we also engage in extensive deliberation.

The Attribution Principle: The Informativeness of Affect and its Cognitive Consequences Depend on How the Experience of Affect is Attributed

Like emotions, moods are evaluative states characterized by positive and negative feelings. However, unlike the case of emotions, the object of the good or bad information embodied in the feelings of mood is unspecified. Thus, the information that appears to be conveyed by mood can depend on what happens to be in mind at the time. Evidence of the mediating role of affective information comes from studies in which the apparent source of feelings is varied. For example, in one of the original Schwarz and Clore (1983) studies, experimenters showed that by making salient an external plausible cause of people's feelings (e.g., sunny and warm vs. rainy and cold weather), the influence of mood on participants' judgments of their life satisfaction was eliminated. Frequent replications of such attribution effects have suggested that mood influences judgment and processing only when the pleasant or unpleasant feelings are experienced as information about the goodness or badness of the object of judgment.

The Immediacy Principle: Affective Feelings Tend to Be Experienced as Reactions to Current Mental Content

When we feel nauseated, the feeling may implicate what we ate several hours ago. When we feel the symptoms of the flu, they may implicate any ill person we encountered 2 weeks ago. When we feel angry or delighted, or experience any other affective feelings, they implicate whatever is in mind at the time. Affective feelings are immediate reactions to current mental content, and this immediacy is presumably important in the adaptive power of affect. In the case of mood, however, the feelings tend not to have salient objects, and for this reason the induction of mood states has been an important tool to enable psychologists to vary affect independently of affective beliefs to which the affect is usually wedded in everyday life. One implication of the

immediacy principle can be seen in depression and anxiety in which persons who experience chronic negative affect may come to view many things as problematic, including themselves and the world around them. Another implication is seen in findings showing that mood effects are greater among individuals who report a preference for thinking (Petty, 2000) and on tasks that require more rather than less thought (Forgas, this issue). In other words, the more thoughts that occur, the more opportunity for ambient affective cues to find a suitable object. Still another implication of the immediacy principle is seen in the judgment and processing principles.

The Affective Judgment Principle: When One is Object-Focused, Affective Reactions May Be Experienced as Liking or Disliking, Leading to Higher or Lower Evaluation of the Object of Judgment

The Affective Processing Principle: When One is Task Oriented, Affective Reactions May Be Experienced as Confidence or Doubt About Cognitively Accessible Information, Leading to Greater or Lesser Reliance on One's Beliefs, Expectations, and Inclinations

These principles assert that predictions about the kind of influence of affective feelings depend on a person's momentary mental focus. When focused on an object with a goal of evaluating it, unassigned feelings of mood may be experienced as liking or disliking for the object of judgment. When focused on a task with a performance goal, the same unassigned feelings may be experienced as information about the value of one's current construction of the situation. For example, when participants were asked to make risk judgments about possible problem situations (e.g., having something of value stolen), they tended to experience their affect as information about those situations. As a result, individuals in positive moods made lower risk estimates, whereas those in negative moods perceived higher levels of risk (Gasper & Clore, 1998). In another study (Gasper, 1999), in which participants performed Tversky's and Kahneman's (1973) heuristic reasoning tasks, moods cues tended to be experienced as information about the participants themselves and the adequacy of their expectations about the task. For example, in the Linda problem, participants are led to form an impression about Linda as a social activist when she was in college. They are then asked whether it is more likely that she later became merely a bank teller or became a feminist as well as a bank teller. Happy participants tended to have greater confidence in their initial impressions, saying that she must be both a feminist and a bank teller (thus committing the conjunction fallacy). In contrast, the negative affective cues of those in sad moods made them doubt their initial impressions, which in this instance tended to result in correct answers.

These and a number of related experiments suggest that although affective feelings are always experienced as evaluations, the particular object that they imbue with value depends on one's focus of attention. They show that positive and negative affect may be experienced as liking or disliking when one is focused on an object. However, when one is focused on a task, the same feelings may be experienced as feedback about one's initial orientation to the task. In the latter situation, individuals in happy moods are more likely to rely on accessible cognitions, including expectations and stereotypes, whereas those in sad moods are more likely to rely on new information from the environment.

These and related principles constitute our current view of the ways in which affective feelings can have cognitive consequences. With this as a background, we turn now to more specific comments on the target article and some comparative thoughts on alternative views of the role of affect in cognition.

Commentary

The research summarized in the last half of Forgas's target article confirms again that he is an ingenious and insightful experimenter. The body of research that Forgas has generated is impressive, interesting, and informative. His work has greatly expanded what we know about affective processes in social judgment. Moreover, the experiments are described in sufficient detail that this article should be a useful resource for individuals interested in pursuing work on affect as well as a guide for how to conduct programmatic research generally. However, our assignment is to contrast our view with that of Forgas, not simply to praise him for his enviably creative and productive research program.

Heuristic and Substantive Affective Influences

The target article uses the affect infusion model (Forgas, 1995) to organize the presentation of Forgas's recent work on mood and social cognition. The model is really a framework that specifies the situations in which irrelevant mood is more likely and less likely to have an influence. A virtue of the approach is that it seeks to accommodate multiple processes. It differentiates situations into those that are open versus those that are closed and those that involve high versus low effort. It says that mood should have an influence in open but not closed

situations. A closed situation is one in which a specific answer already exists in memory or is dictated by motivation. An open situation involves some amount of processing, which can be either heuristic (i.e., low effort) or substantive (i.e., high effort). Forgas categorizes the affect-as-information approach (Clore, Schwarz, & Conway, 1994; Schwarz & Clore, 1983) as low effort or heuristic and the memory-based approach (Forgas & Bower, 1988) as high effort or substantive.

In his comparison of the two views, the point that Forgas emphasizes most is that the use of affect as information is limited to heuristic judgment situations in which mood provides a judgment shortcut. Most judgment situations, he argues, involve more substantive processing, and these situations turn out to be the most likely ones to show mood effects. We agree that it is useful to distinguish heuristic and substantive judgment situations, and we agree that Forgas's data make a strong case for the idea that mood influences are found in deliberative as well as quick and dirty judgments.

The informational role of affective cues is not, however, limited to heuristic judgment situations. Indeed, we view such informational processes as operative at multiple levels and in all situations (Clore, Gasper, & Garvin, 2001). In this regard, our approach is similar to that outlined by Carver and Scheier (1981), who explained behavior regulation by alluding to a hierarchy of feedback loops in which the output information from one level often serves as input for the next level. Bless (Bless et al., 1996) also stressed that informational influences need not be heuristic in the sense of involving reduced effort. Wyer, Clore, and Isbell (1999, p. 31) also treated this issue explicitly by specifying two kinds of informational influences.

Postulate 3

Persons use the affect they are experiencing to make judgments of their feelings about themselves, other persons, objects, or events, or to make other judgments for which these feelings are the primary criterion.

Postulate 4

People may use the affect they are experiencing as a heuristic basis for evaluative judgments that are not typically based on affective reactions when they are either unable or unmotivated to use other, more directly relevant criteria.

Of this distinction, Wyer et al. (p. 30) noted

This difference has sometimes been ignored in formulations of the role of affect in inference processes. Forgas (1992, 1995), for example, assumes that affect functions as a heuristic that is applied only when peo-

ple are either unable or unmotivated to employ other, nonaffective criteria. Schwarz and Clore (1988) also refer to a "how-do-I-feel-about-it?" heuristic in conceptualizing the informational influence of affect. Although circumstances arise in which such a heuristic is applied, we believe that affective reactions are often the *primary* basis for many judgments and are not simply used when other criteria are unavailable.

Thus, the affect-as-information position need not be limited to instances in which affect is used as a shortcut or heuristic route to judgments and decisions, despite our prior emphasis (e.g., Schwarz & Clore, 1988) on heuristic processing. Indeed, most decisions, even those that involve a detailed consideration of facts and figures, also involve affective appraisals. A study by Isen and Means (1983) involving decisions about which of three cars to buy is illustrative. Despite having made detailed comparisons of the technical information about the three cars, affect still had a potent role in helping the decision makers determine when to exit the decision process and whether their tentative choice was a good one. In positive moods, participants tended to exit the decision process relatively early, feeling that they had made a good choice, whereas those in negative moods tended to go over and over the same information because they were confronted with negative rather than positive feelings as they appraised their tentative choices. Our point is that even careful decision making involves an appraisal in which one asks oneself (at least implicitly), "Everything considered, is my tentative choice a good one or should I reconsider the alternatives?" The answer to such questions often involve attention to affective cues, positive feelings leading one to exit the process and negative feelings leading one to continue.

Comparing Priming and Informational Models

In this section, we compare the implications of the idea that feelings prime concepts and memories (Bower & Forgas, 2001) and the idea that feelings convey information (e.g., Bless, 2001; Clore et al., 2001; Martin, 2001; Schwarz, 2001). To compare these views, we focus on the three phenomena that have attracted the most research in the mood and cognition literature, namely, the effects of mood on judgment, memory, and processing.

Mood and Judgment

As shown in Table 1, the concept-priming hypothesis assumes that moods automatically prime mood-congruent material in memory, which in turn

Table 1. *Mood and Judgment*

Conceptual priming
    Affect → priming affect-congruent concepts/memories →
        affect-congruent judgments
Feelings-as-information
    Affect → feelings attributed to judgment object →
        affect-congruent judgments

serves as the basis for evaluative judgments. In contrast, the affect-as-information hypothesis assumes that evaluative judgments are often based directly on how one feels rather than indirectly on the thoughts primed by those feelings (Clore, 1992).

In general, we concur in the view espoused by Haidt (in press) in which emotional influences on judgment are viewed as direct and intuitive, and reasons often serve as justifications rather than as causes of affective judgments. For example, one's distaste for bitterness (including interpersonal bitterness) is simple and direct, rather than being based on the retrieval from memory of reasons why one dislikes bitterness. Similarly, one's negative judgments of social and moral shortcomings are less often based on retrieval of material from memory about why they are negative and more often based directly on negative affective reactions to the idea of such behavior.

We are not suggesting that affective judgments do not have reasons but rather that affect that is congruent with the reasons is more likely than the reasons themselves to be the proximal basis for evaluative judgments. Thus, for example, we may judge the prospect of taking a vacation positively because we find the prospect delightful, rather than because we retrieve positive concepts about vacations. Similarly, when asked how we like the food we have ordered for lunch, we are likely to base our answer directly on the pleasantness of the taste, rather than on beliefs about the food. Indeed, we assume that the point of affective feelings is to allow judgments, decisions, and actions without retrieving reasons.

In this regard, LeDoux (1996) suggested that "emotion *is* memory," by which he meant that emotional reactions are embodied representations of the personal significance of situations. Emotions are our affective memory, that is, our memory for the goodness and badness of situations. Thus, in situations experienced as threatening in the past, we may find ourselves frightened in the future. In many instances, that felt information about the situation is more immediately relevant and useful than the retrieval of other anxious memories or the retrieval of relevant concepts.

A similar implication can be seen in the case studies related by Damasio (1994) concerning damage to the prefrontal cortex. He argued that the cause of poor judgment among these individuals is not that they are deficient in retrieving material from memory but rather

that they are unable to use their own affective reactions directly as feedback. As a result, they cannot experience whether or not their decisions are consistent with their goals.

Thus, although we concur with Forgas's observation that mood effects are more likely to occur in judgment situations involving some bottom-up processing, we differ in the proposed mechanism of influence. For the priming model, elaborative processing is believed to be necessary so that primed concepts and memories can have an influence, whereas in our view, such processing promotes mood effects by allowing feelings to have an influence.

The general idea of the priming model is that if judgments were based on what is retrieved from memory, then mood could control judgment by influencing what is accessible in memory. However, questions can be raised about whether judgments are in fact typically based on the retrieval of instances from memory. Research generally shows little or no relation between judgments of persons and the content of recall about them (Wyer & Srull, 1989). The research on judgment and decision making also casts doubt on such normative models (e.g., Loewenstein, 1996; Tversky & Kahneman, 1973). Although the judgment and decision-making community has been late in recognizing it, many judgments and decisions appear not to be based on the retrieval of instances and attributes at all. If so, then models that explain mood effects on the basis of biased retrieval may leave important aspects of judgments unexplained.

We are not suggesting an irrationalist view of emotions or of decisions. For the most part, emotions can be assumed to arise for good reasons and to reflect people's experiences accurately. However, we assume that a key function of emotions is to provide embodied representations of the affective meanings of situations. Affective meaning often reflects numerous goals and motives of varying importance, all summarized by the quality and intensity of affective feeling, which incline us more or less urgently toward or away from the object of the affect. Because the information from emotions arises from within, rather than coming from without, it is convincing and tends to be acted on without debate. Indeed, emotional feelings indicate a commitment to a particular interpretation of reality—anger being a commitment to the belief that one has been wronged; fear, a commitment to the belief that one is under threat, and so on. Given that commitment, accessing underlying reasons before making a judgment or decision would be a step backward, allowing one to second guess one's emotional reaction and in the process undermining what we presume to be its adaptive significance. (For a more extended discussion of the difference between the assumptions of traditional judgment theory and feeling-based judgment, see Clore, 1992; Loewenstein, 1996).

The same analysis holds in the less explicitly emotional domain of attitudes. Fishbein and Ajzen (1975) maintained that attitudes are a sum of the evaluations associated with each of an individual's beliefs about an object. For example, one's attitude toward a particular political candidate may depend on one's beliefs about his or her characteristics and how good or bad one evaluates each characteristic to be. The knowledge that attitudes are based on beliefs is potentially useful because it suggests ways of changing attitudes. However, we assume that an important function of attitudes is to keep from having to access each belief and its evaluation every time one thinks about or talks about an attitude object. For many judgments, decisions, and actions regarding attitude objects, we access the affective information that is the attitude rather than depending on the attitude to remind us of the underlying reasons. There is more to be said about the differences in these views, of course, but space limitations dictate moving on to the topic of mood and memory.

Mood and Memory

Bower (1981) outlined some intriguing studies suggesting that mood effects on memory may provide a general mechanism for explaining emotional effects on cognition. It was an important paper in part because Bower's considerable scientific reputation helped promote further study of the cognitive effects of mood and emotion. The priming idea was proposed independently at the same time by Isen et al. (1978). Bower treated mood as a node in memory similar to other concept nodes. In happy or sad moods, activation was believed to spread from the mood node to all other concept or memory nodes sharing a similar valence. Thus, having positive or negative feelings was assumed to selectively activate positive or negative concepts and memories.

Recently, we argued that it may not be the case that feelings prime feeling-congruent memories automatically and that the effect may occur only when individuals interpret their feelings with appropriate concepts (Wyer et al., 1999). That is, happy or sad feelings may trigger happy or sad memories only to the extent that happy or sad concepts are used to interpret the feelings. If so, demonstrations of mood-congruent memory may often really be demonstrations of concept-congruent memory. These differences are summarized in Table 2.

Table 2. *Mood and Memory*

Conceptual priming
   Affect → priming affect-congruent memories
Feelings-as-information
   Affect → affect-congruent interpretive concepts →
      concept-congruent memories

The assumption that mood automatically primes mood-congruent material in memory is problematic on numerous grounds. First, the literature examining the influence of mood on memory has been inconsistent, leading some reviewers to doubt the generality of the relation (e.g., Blaney, 1986). Second, others (e.g., Johnson & Tversky, 1983) have noted logical problems with the idea that being in a good or bad mood could activate all positive or negative episodes and concepts stored in memory. If one uses an electrical metaphor for spreading activation, one suspects that being in a good or bad mood would lead to a cognitive brownout.

We should mention that the cognitive brownout idea is similar to positions taken by Mackie and Worth (1989) for positive moods and by Ellis and Ashbrook (1988) for negative moods. These explanations predict impaired cognitive performance in positive (Mackie & Worth, 1989) or negative (Ellis & Ashbrook, 1988) mood states, and of course the idea that emotion limits reason has plenty of precedent. We expect, however, that such an analysis is more applicable to extreme, intense, or chronic affective conditions such as depression than to the minimal affective cues operating in most laboratory studies.

Empirically, the priming model is also problematic. For example, Johnson and Tversky (1983) noted that mood effects on judgment do not show the kinds of graded effects one would expect as a function of variations in the thematic similarity between mood induction themes and judgment themes. Similar findings were obtained by Clore, Schwarz, and Kirsch (1983). Such results suggest that the mood effects may not be guided by priming.

In addition, Wyer et al. (1999) reviewed the literature on mood and memory and found that the effects of mood on memory occur mainly in situations where the mood manipulation procedure explicitly or implicitly activates concepts of mood as well as feelings of mood. In an unpublished master's thesis, Garvin (1999) conducted a direct test of the hypothesis that mood concepts, rather than feelings of mood, are responsible for mood-congruent memory. She crossed concept priming and mood induction procedures to examine the recall of happy and sad events from a story originally used by Bower, Gilligan, and Monteiro (1981). She found that priming the concept of happy or sad mood influenced recall of happy or sad events in a story but that actual happy and sad feelings did not. Similarly, Parrott and Sabini (1990) found that when mood was subtly induced (e.g., weather, music), mood congruence was seen in autobiographical memory only when participants were also explicitly told to get in a happy or sad mood. Their results suggest that affective concepts rather than affect itself is responsible for priming affective material in declarative memory.

It should be noted that neither Bower (1981) nor Forgas (this issue) distinguished between mood and

concepts about mood. To the extent that they intended to include mood concepts as part of mood, then their predictions stand. However, most interpreters of such work have implicitly assumed that the affect does the work. Thus, it may be important that felt affect, as opposed to conceptualized affect, may not show the same effects. If so, then mood priming of material from memory may not be a reliable basis for explaining many of the cognitive effects of mood.

Mood and Processing

The final topic concerns mood and processing. Much of the current research in the literature on mood concerns its effects on styles of information processing. In general, individuals in happy moods tend to rely on scripts (Bless et al., 1996), stereotypes (Isbell, 1999), and initial expectations (Gasper, 1999), whereas individuals in sad moods are more likely to reject weak persuasive arguments (Sinclair, Mark, & Clore, 1994), solve heuristic reasoning problems correctly (Gasper, 1999), and break mental sets (Gasper & Clore, 2000). There is a good deal of disagreement in the literature on how to characterize and explain such mood-induced differences in style. Consistent with the processing principle mentioned previously, we have proposed that when positive mood cues are experienced as efficacy feedback, individuals should tend to rely on their own cognitive constructions, expectations, and inclinations. In contrast, when negative mood cues are experienced as negative task feedback, they should inhibit reliance on one's cognitions and lead to a focus on new perceptual information from the environment. As a result, individuals in happy moods should focus on top-down processing (i.e., assimilating new information to existing concepts), whereas those in sad moods should focus on bottom-up processing (i.e., accommodating concepts to new information; Clore et al., 2001). Fiedler (2001) made similar predictions.

Forgas too, in the target article, predicts that "negative mood should promote a more careful, systematic, bottom-up processing style that is more attuned to the requirements of a particular situation" and "positive affect should promote a more schematic, internally driven, and top-down information-processing style." However, the basis of these predictions about processing was somewhat less clear. Presumably, these effects depend on the content of the material in memory that is primed by mood, as shown in Table 3.

Relevant research comes from Forgas's study of mood effects on request styles (Forgas, 1999). In explaining the direct style of requests adopted by happy participants, he commented:

Table 3. *Mood and Processing*

Conceptual priming
Affect → priming affect-congruent concepts/memories →   affect-congruent processing
Feelings-as-information
Affect → feelings attributed as efficacy feedback →   affect-congruent processing

> Happy people should adopt a more confident, direct requesting style, as a result of the greater availability and use of positively valenced thoughts and associations in their minds as they assess the "felicity conditions" for their request. (p. 25)

Similarly discussing research on the effects of mood on bargaining strategies (Forgas, 1998), he explained the effects of mood on bargaining strategies by suggesting that

> Positive mood should then selectively prime more positive thoughts and associations, and these ideas should ultimately lead to the formulation of more optimistic expectations and the adoption of more cooperative and integrative bargaining strategies. On the other hand, negative affect should prime more pessimistic, negative memories and associations, and should lead to the use of less integrative and ultimately, less successful bargaining strategies. (p. 29)

Again, our view is that these interesting effects are equally compatible with predictions from the affect-as-information approach. We believe that the optimism and self-confidence found to be associated with positive affect would have been a direct reflection of on-line affective experience rather than of affective concepts and memories. Even if positive and negative memories were involved, it seems plausible that any resulting optimism and self-confidence would depend on the feelings elicited by those memories rather than on the memories themselves. Optimism and self-confidence would surely depend, after all, on the affective significance of whatever memories came to mind, rather than on the memories themselves.

Conclusions

It appears that what is true of the research on judgment is also true of the research on processing. Using generally similar designs focused on common phenomena, Forgas's research and the research of others in this area have converged on a common set of findings and a generally similar way of characterizing them. The resulting body of robust and replicable effects is impressive and is a result that is surprising, given that the research concerns how people feel. Con-

sistent differences do emerge in aspects of the explanations offered. Forgas has focused on the idea that mood-congruent cognitive content is primed by mood, and we have focused on the idea that judgment and processing decisions may be influenced directly by affective feelings rather than indirectly by primed cognitions.

What is perhaps more important than any divergence of explanations for the effects of mood, however, are the innovative directions in which Forgas is taking research on mood. In each domain, he has asked new questions and achieved clear results. Methodologically too, this report of Forgas's work is exciting. He reports a number of new experiments focused on real-world behavior. Moreover, he has begun to ask how we can apply what we have learned about affect to health-related and other behaviors. Finally, we applaud Forgas's call for new work that focuses on measures of the intervening processes proposed by competing theories.

Notes

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A Second-Generation Psychology of Emotion

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The scope and promise of current emotion research is greater than ever before. Still, the burgeoning empirical findings in the field have outpaced efforts to integrate these findings into an efficient and compelling theoretical framework. This situation is not a shortcoming but a sign of the process and progress of emotion research. Although many fundamental issues remain unresolved, including the very definition of emotion and the distinction between various affective phenomena (such as mood, motivation, temperament, and meta-mood cognition), research continues to be highly productive and occasionally hints at resolutions to these basic issues. This endeavor is a process of empirical bootstrapping. It challenges us, as researchers, to proceed ahead of theory without losing sight of theoretical understanding as our ultimate goal.

Many emotion researchers have met the challenge of empirical bootstrapping. Among them, Joseph Forgas is a psychologist whose contributions to the study of emotion range from basic social cognitive research to highly integrative theory building. Forgas has recently introduced, in his target article (this issue) and elsewhere (e.g., Forgas, 1995), the affect infusion model (AIM), an impressive framework that accounts for the influence of mood on social thought and behavior. This model is of special interest to us given our related efforts to develop an integrative model of emotional intelligence, in which we emphasize the close collaborative relation between emotion and reason (e.g., Mayer & Salovey, 1997; Salovey, Bedell, Detweiler, & Mayer, 2000; Salovey & Mayer, 1990). In this commentary, we discuss emotional intelligence and the AIM as indicators of the current state of theorizing in the field of emotion. We argue that the strength of these models goes beyond their positive contributions to our understanding of emotion. Equally important is their capacity to identify and focus our attention on specific aspects of affective phenomena that remain obscure.

A First Generation

Over the past few decades, the misgivings psychology has had about emotion have given way to a collective sense of excitement. The historic view, espoused by most philosophers and early psychologists, holds that feelings are disruptive, irrational "passions" without any discernable purpose (see Solomon, 2000). Yet empirically minded thinkers, from David Hume and Charles Darwin to a host of contemporary researchers, have come to recognize that emotions play a vital role in human psychology. At a basic level, emotions confer an impressive survival advantage through their ability to energize adaptive behaviors and rapidly to

signal details about a situation (such as danger) to other members of the species through nonverbal cues (Darwin, 1872/1965). More generally, affect plays a pivotal role in arousing, sustaining, and directing human action, so much so that it is tempting to regard emotion and motivation as nearly synonymous (e.g., Hume, 1739/1948; Izard, 1971; Leeper, 1948; Tomkins, 1962). Moreover, cognition itself depends on the direction of emotion. When the neural substrates of emotion are damaged, cognitive processes clearly suffer (e.g., Damasio, 1994). These considerations have inspired a growing number of investigators to study emotion. After a history of neglect, feelings appear to be critically important to human functioning, making the pursuit of a better understanding of emotion an important, exciting endeavor.

How advanced is our current understanding of emotion? The latest surge of research makes this a timely question, but it is somewhat difficult to answer. We certainly know a great deal more about affective phenomena then we did 65 years ago, when Darrow published "Emotion as relative functional decortication" in *Psychological Review* (1935), but our knowledge consists of a profusion of loosely related findings spanning virtually every subspecialty in psychology, including findings at many different levels of analysis, from synapse to society. It is an embarrassment of these empirical riches, in the absence of a comparable degree of theoretical coherence, that affective phenomena appear more complex now than ever before. A first generation of theoretical work has distilled many core principles from this complexity, and these principles have led to a much better conception of the structure, function, dynamics, and apparent laws of emotion (e.g., Bower, 1981; Carver & Scheier, 1990; Frijda, 1988; Higgins, 1987; Lazarus, 1982; Russell, 1980; Schwarz & Clore, 1983). Nevertheless, now that the scope of emotion research has widened, the field must extend and supplement these principles and clarify the interrelations among them to advance our understanding of affective phenomena. This requires a second generation of theoretical work.

A Second Generation

Emotional intelligence (EI) and the affect infusion model (AIM) are two examples of second-generation theorizing about emotion. Each model attempts to organize a broad collection of research within one theoretical framework, and each does so by extending or integrating principles emerging from previous theoretical work. Certainly, EI and the AIM represent early second-generation work. Although they make positive contributions to our understanding of emotion, they leave many questions unanswered. However, it reflects the theoretical strength of the models that they call our attention to important issues that are not well understood and prompt us to ask more perceptive follow-up questions regarding these issues. Consideration of the goals and limitations of these models thus provides an informative view of the current state of theorizing and paths to further understanding in the field of emotion.

Emotional Intelligence

The EI framework organizes a collection of literatures pertaining to emotional competencies. Although emotion regulation is perhaps the most obvious component of EI, we do not assume that feelings are generally unruly or in need of regulation. The underlying assumption of our work is quite the opposite. We believe, with others (e.g., Schwarz & Clore, 1983), that affect constitutes a unique source of information for individuals about their environment, opportunities, and goals. The fundamental assumption of EI is that people differ in how skilled they are at understanding and managing this emotional information. The EI framework therefore emphasizes meta-emotional competencies and the collaborative relation between emotion and reason. Beyond this, we suggest ways in which the four competencies of EI (i.e., emotional perception, emotional facilitation of cognitive activities, emotional understanding, and emotional regulation) may promote personal well-being and growth (e.g., Salovey, Bedell, Detweiler, & Mayer, 1999, 2000).

The explicit contribution of the EI framework to our understanding of emotion is its recognition and description of a hierarchy of specific emotional competencies. If this had been the only accomplishment of EI, it would have been of minor significance, and it certainly would not have been the subject of such widespread (and often overly exuberant) interest. Yet the notion of emotional intelligence does more than specify a hierarchy of skills. Specifically, it focuses our attention on a collection of lingering questions and attractive possibilities, such as:

• What distinguishes between the more basic components of EI, which involve the perception, integration, and understanding of emotional information, and the ability to regulate emotional phenomena? What enables a person to bridge the apparent gap between processing emotional information and managing emotion itself?

• How should EI be measured? Does a general ability, similar to the *g* of analytic intelligence, contribute to EI?

• Does a person have to be smart (analytically) to be smart about emotion? What distinguishes meta-emotional competencies from other cognitive abilities?

- How does EI relate to other constructs such as optimism, self-esteem, social competence, and life satisfaction? Can a person be emotionally intelligent yet still be a psychological wreck? Is EI uniformly beneficial, or can there be too much of a good thing?

- How does individual emotional competence shape the collective emotional functioning of a group or organization?

- Can we cultivate EI in ourselves and others? Can we design effective emotional learning curricula for children with effects that extend beyond the classroom? If so, how? Should emotional lessons be taught as concepts, or do they need to be experienced?

- Are there any situation, task, or person characteristics that enhance or constrain the efficacy of EI? Through what mechanisms or processes do the competencies of EI influence a person's thinking and behavior?

This is only a partial list of questions emerging from the EI framework. The ultimate value of EI will depend on the ability of the framework to help us ask more discerning questions, leading us to a deeper understanding of meta-emotional phenomena. We believe the integrative nature of EI has already advanced a new, more unifying agenda of research, and we hope the resulting insights of this research are at least somewhat commensurate with the extent of interest in this topic.

Affect Infusion

The AIM stems from Forgas's investigation of affective priming and his prolific interest in mood effects. With Bower, Forgas has demonstrated that moods often influence thought by priming similarly valenced memories and concepts; the increased salience of this one-sided emotional information can produce affect-congruent distortions in recall, judgment, and behavior (for an updated review, see Bower & Forgas, 2000). Despite the explanatory power of this framework, affective priming sometimes fails to occur and occasionally results in mood-contrasting effects. Furthermore, Schwarz and Clore's (1983, 1988) affect-as-information approach appears to be a competing explanation of mood-congruent processing in which emotion is construed as experiential feedback that guides judgment. To reconcile the influence and limits of affective priming with the affect-as-information approach, Forgas has developed the AIM.

Forgas's model provides for two dimensions of information processing (i.e., degree of openness and effort) that jointly define four information-processing strategies (i.e., substantive, heuristic, motivated, direct). Affect infusion (i.e., mood congruence) occurs only during open, constructive information processing, including substantive processing (i.e., high effort) and heuristic processing (i.e., low effort); affect infusion

does not occur or may result in mood-contrasting effects during closed processing (i.e., motivated and direct processing). Importantly, the AIM asserts that affect infusion is attributable to priming in the case of substantive processing and attributable to the use of affect as informational feedback in the case of heuristic processing. The most tangible contribution of the AIM to our understanding of emotion is this clear specification of the conditions under which the affective priming and affect-as-information views apply.

Again, Forgas's contribution extends beyond the basic substance of the AIM. The clarity of this integrative model brings into high relief many compelling questions, such as:

- How does motivated processing forestall affect infusion? Although the AIM specifies the mechanisms through which affect infusion influences substantive and heuristic processing, the mechanism through which motivated processing avoids the influence of mood is not fully elucidated. Is this mechanism corrective, or does it altogether circumvent the influence of mood?

- Similarly, how do task, person, and situation features determine choice of processing strategy? With others (e.g., Sedikides & Green, 2000), we suspect that the AIM needs to be extended or augmented to elucidate fully mechanisms through which these features moderate the influence of mood on thinking and behavior.

- In the homeostatic mood-management system described by Forgas as an implication of the AIM, what activates motivated affect control? In what sense is the shift away from substantive processing motivated, if it is subtle and automatic? Likewise, when and how is affect control disengaged?

These are just the most apparent issues to catch our attention. The richness of the AIM, from its method of parsing social cognitive judgments into different processing strategies to its relevance to other theories of affect and social cognition, promises to motivate many more questions. In addition to suggesting these questions, the AIM will undoubtedly contribute to our interpretation and understanding of the answers, which reflects yet another strength of integrative theorizing.

Approaches, Frameworks, Models, and Theories

Our understanding of affective phenomena is still at an early stage. Indeed, few emotion researchers are willing to label their ideas as Theories (with a capital *T*). The affect-as-information view is described more as a theoretical approach (Clore, Gasper, & Garvin,

2000), emotional intelligence as a theoretical framework, and the AIM as a theoretical model. Current theoretical work is bootstrapping its way from description to explanation. Of course, it is extremely difficult to draw the line between perceptive descriptions and causal explanations. The one begets the other; at least that is the hope.

Although it would have been impossible in this brief commentary to scrutinize our understanding of emotion from the perspective of the philosophy of science—perhaps someone will take up this worthy task—it does seem clear that descriptions and explanations of affective phenomena are growing more complex. This integrative, second-generation of theorizing in the field of emotion will continue to facilitate inquiries that may not have been pursued, and would have been less meaningful, before now. We would like to see more integrative work of this nature. This work is ambitious, but we believe it often succeeds and does so even where it falls short.

Note

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Mood-Dependent Processing Strategies
From a Meta-Theoretical Perspective

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In the target article, Joe Forgas (this issue) not only provides a new state-of-the-art review of research on affect and social cognition, extending his affect-infusion model (AIM) to an even broader behavioral domain, but he also presents a critical appraisal of previous theoretical approaches. I am not sure if Forgas's fundamental critique is understood as clearly as the overwhelming body of empirical evidence. Some of his arguments are not spelled out as frankly and openly as I would prefer and as in my opinion the scientific discipline of social cognition ought to spell out its controversies.

Aside from the interesting new findings on affect and language production, buffering of stress, and health-related behavior that enter the target article, the main theoretical message appears to be the following. Previous theoretical approaches—such as affect priming in associated networks (Bower, 1981) or the mood-as-information approach—have made rather ambitious claims to explain all affective influences within a unitary process account. However, it has to be acknowledged that the interplay of affect, cognition, and behavior regulation is too flexible and multifaceted to be covered by a single mechanism. Rather than trying to overgeneralize a single universal theory—which Forgas characterizes as an immature stage—we need an integrative approach that allows for a richer repertoire of processes and that specifies the precise conditions under which each specific process is likely to be elicited.

One such integrative approach is the AIM (Forgas, 1995). The AIM distinguishes between four qualitatively different, mutually exclusive strategies that are switched on and off in an adaptive, context-sensitive fashion: direct access, motivated, substantive, and heuristic processing. The manner in which the AIM attempts to achieve more theoretical flexibility and more explanatory power is by assuming some superordinate regulation that selects one of several strategies fitting different situations. As I understand the AIM, it makes little sense to assume that more than one strategy is at work at the same time. If, say, direct access were governing a judgment task, it is hard to imagine how systematic processing can enter the process at the same time. If this were the case, the essence of direct access would be lost. Likewise, the economical function of heuristic processing is hardly compatible with the simultaneous operation of motivated processing, which represents a high-effort, hard-working strategy. Thus,

the regulation process proposed by the AIM is based on an on–off strategy selection rule. As I demonstrate in this commentary, this is not the only possible way in which adaptive system regulation can operate.

To illustrate this point and to prepare the ground for my commentary, I suggest the following syllogistic task to think more precisely about single-process theories that assume only heuristic processes or only affect-priming and a multiprocess theory that assumes an all-or-none selection from a larger repertoire of such different strategies. Needless to say that the conclusion of the syllogism is wrong:

- Major premise: Many christs are altruists.
- Minor premise: All catholics are christs.
- Conclusion: Many catholics are altruists.

As the subset of christs who qualify as altruists may be different from the subset who are catholics, the conclusion can not be derived on logical grounds, although many respondents will be misled by a kind of atmosphere effect (Woodworth & Sells, 1935) and will find the syllogism true. The syllogism can also be paraphrased as a stereotypical judgment task, a prominent paradigm in affect-and-cognition research (Bodenhausen, Kramer, & Süsser, 1994). The conclusion entails the ascription of a socially meaningful attribute (e.g., altruism) to a group (e.g., catholics) in the presence of more systematic, quantitative information (e.g., statistical quantifiers, logical rules).

What does it mean to solve the syllogism using the different strategies? Direct access means to retrieve from memory a preformed conclusion, that is, to know a priori that many catholics are altruists, independent of the premises. This would be an extreme version of a so-called belief bias (Klauer, Musch, & Naumer, 2000). Motivated processing (toward the desired conclusion that catholics must be altruists) also involves a kind of belief bias, which is not as absolute. Rather than ignoring all input information, motivated reasoning involves the selective focus on all evidence that supports the desired result as, for instance, scanning one's memory for exemplars of altruistic catholics within the superset of christs. In contrast to motivated processing, systematic processing means to be open to all kinds of input information (i.e., all available premises and logical rules), which need not imply that reasoning is necessarily correct. Mistakes may be made due to mental overload, quantifiers (e.g., *many*) may be

interpreted differently, and so on. Finally, heuristic processing of the kind proposed by Schwarz and Clore (1988) amounts to ignoring both premises and prior knowledge or preference of conclusions and instead using some fully irrelevant state (e.g., "I am happy") as a proxy for judging the conclusion (e.g., "Therefore, catholics, like all nice people, are altruists"). In the terminology of syllogistic reasoning research, this would constitute an extreme variant of blind guessing.

Can we imagine that syllogistic reasoning is radically determined by one of these mutually exclusive strategies? Will participants in a syllogism experiment rely only on direct access and switch off all other determinants? Will they absolutely follow an extraneous heuristic cue and refrain from all thinking proper? Will they confine themselves to reasoning backwards and searching only for evidence that supports a desired conclusion? Or will they engage in purely systematic processing and immunize themselves from all motivational and epistemic biases? Wouldn't it be possible that, by default, the cognitive process is principally open to all kinds of influence, albeit to variable degrees, rather than switching on one strategy and switching off all others?

In a theoretical review of syllogistic-reasoning research, Klauer et al. (2000) recently applied the methodological framework of multinomial modeling (Batchelder & Riefer, 1990) to the analysis of syllogistic reasoning. Because the syllogism paradigm has the same structure as stereotypes and many other judgment tasks, as already mentioned, the insights from this analysis are relevant to social judgments as well. The model that Klauer et al. found to be most appropriate included several simultaneous parameters for blind guessing, for a belief bias, and for the impact of mental models representing the stimulus input. No single parameter ever adopted such an extreme value that one may conclude a single principle (e.g., direct access, conceived as an absolute belief bias) can account for the whole judgment process at one time.

Transferring the multinomial modelling framework to the affect-and-cognition domain, the contribution of the aforementioned AIM strategies could be conceived as simultaneous parameters within a single cognitive process account, as depicted in Figure 1. The process proceeds from left to right. Given an elementary judgment problem (such as the syllogism presented previously) as input, the first parameter, s, specifies the probability of engaging in systematic elaboration. If systematic processing does not take place (with probability $1 - s$), motivated processing can nevertheless produce deep (albeit selective) elaboration, with probability $m_{not\ s}$. However, motivated processing can also be involved when systematic processing takes place, although a different parameter m_s must be assumed for the probability of motivated processing in addition to
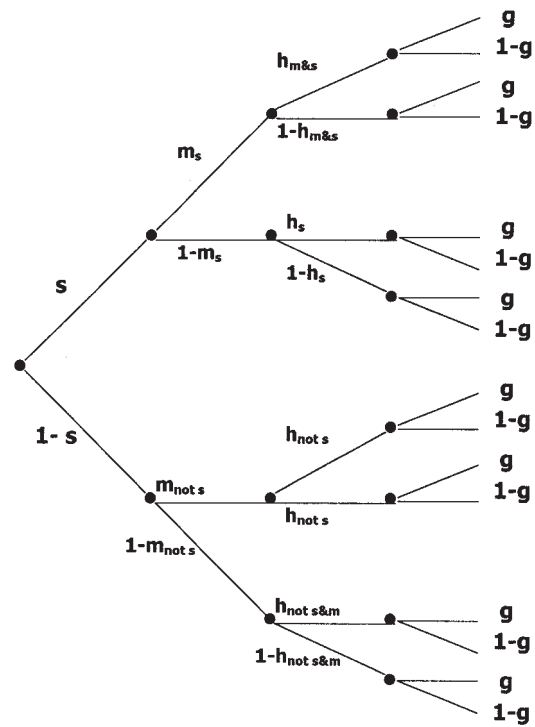

Figure 1. *Multinomial decomposition of the interplay among systematic processing, motivated processing, heuristic processing, and guessing.*

systematic processing (whether $m_s = 0$ remains an empirical question). Regardless of whether only systematic processing, only motivated search, or both have been conducted, the selection of a candidate for a final response (i.e., conclusion) may additionally depend on a heuristic cue, with probability h_s, h_m, $h_{s\&m}$, or $h_{not\ s\&m}$, respectively, depending on the preceding kind of processing. Again, the likelihood or degree of heuristic impact may differ as a function of systematic and motivated processing but need not be set to zero just because one of the other parameters becomes non-zero. Finally, at the right-most end of the process tree, a guessing bias to accept the conclusion as correct may influence the final response stage with probability g, whether or not other factors have influenced earlier stages of the process. For the sake of simplicity, we can ignore that g could in principle vary between process branches, which would call for eight different subscripted parameters on the right side of Figure 1.

Let us now return to the research goals in the area of affect, cognition, and behavior. Forgas's (1995) AIM suggests that we need empirical answers to the question of which strategy is evoked under which condition. The present analysis raises a much more fundamental research question. The multinomial perspective clarifies that the four strategies of the AIM already impose very strong restrictions on the kinds of

cognitive processes that are permissible. The taxonomy of four strategies implies perfect correlations between specific process parameters in Figure 1. For example, a heuristic strategy implies that h becomes 1, whereas s and m become 0, as would be manifested in perfectly negative correlations across participants. Alternatively, a systematic strategy posits $s = 1$ and all other parameters set to 0. In other words, the idealistic strategies of the AIM assume that only specific bundles of process parameters co-occur in real cognitive processes. The insights from research on syllogistic reasoning and the rather modest effect sizes obtained in hundreds of experiments on affect and cognition can hardly support such a strong assumption.

The very demonstration of significant mood effects on judgment and memory are hardly as earthquaking and absolute as to implicate a single process component that determines the whole judgment. One primary developmental task of the affect and social cognition camp is to provide evidence for any kind of parameter constraints, figuring out whether certain process branches in Figure 1 can be ruled out and whether certain parameters are correlated to such a degree that bundles of parameters can be compiled to produce compact strategies. As long as this basic task is not complete, I'm afraid all higher order theorizing—assuming either single processes or switching between multiple processes— appears to rest on less than solid ground.

What about the role of affect itself? The multinomial process outlined in Figure 1 is devoted only to the different processing strategies supposed to interact with affect but does not locate the influence of affect itself. Indeed, the manner in which the influence of mood on the judgment product depends on or triggers the processing strategies could also be explicated in a multinomial framework. Forgas raises the intriguing idea , which I hope will not be overlooked, that processing styles can both mediate and moderate the impact of mood on social judgment and behavior. I briefly consider this important distinction (cf. Baron & Kenny, 1986).

If the processing styles of Figure 1 mediate the influence of affect on judgment and behavior, then affect is assigned the role of a genuine independent variable, left of all other variables in Figure 1. That is, affect is assumed to set in motion the processing strategies, to adjust or switch on and off the parameters for the different cognitive process branches. In a mediator model, the processing strategies merely describe the mediational process how affect comes to influence judgment and behavior. In contrast, in a moderator model, the role of the genuine independent conditions is assigned to different processing strategies that are assumed to call different functional relations between affect and behavior, like mutually exclusive subroutines in a computer program. In other words, the pro-

cessing strategies depicted in Figure 1 would not (or not only) act on the behavior itself, but the theoretical role of strategies would be to select one of a number of different possible functional relations between affect and behavior. Clearly, those different affect functions have to be specified and investigated independent of the moderating strategies. Because this amounts to permitting different affect functions emanating from each branch and subbranch in Figure 1, a moderator model is a very inelegant and unparsimonious solution, unless there are logical or psychological reasons for reducing the number of points in the strategy tree that can trigger different processes. The ambitious goal of a moderator model that remains to be realized is how the psychological influence of affect and cognition and behavior can be conceived independent of the moderating process variables. To the extent that these variables themselves are needed to substantiate the affect–cognition influence, the model becomes a mediator model.

Given the call for parsimony, and given the lack of a sensible model of the affect–social cognition interface that does not itself rely on the process variables in Figure 1, we can conclude that a mediator model is implicated by the current state of the arts. To be sure, this does not exclude the possibility that a moderator influence may also be at work, as Forgas has explained, even though a feasible model is needed first to restrict the multitude of possible moderator relations. However, granting that the mediator assumption is correct, an interesting implication is that any comprehensive, satisfactory theory of affect and cognition has to speak to both major sets of empirical findings, congruency effects and affective influences on cognitive style, within the same framework. We may no longer assume that both classes of phenomena reflect different causal factors or are governed by independent rules if, according to a mediator model, different processing styles are the very means by which congruency effects are brought about.

What would such a comprehensive model look like? Which theoretical principle could explain both empirical phenomena at the same time—that mood states trigger different processing styles and that this can in turn explain the specific way in which mood states lead to congruent (or sometimes incongruent) judgments and behaviors? My personal conviction is that such a model requires some reframing of the variables that are commonly considered relevant to understanding mood influences (as summarized in Figure 1). To articulate my doubts, I once more point to the multinomial modeling framework, one asset of which is that process assumptions are spelled out so transparently that unambiguous validity tests can be derived and performed. Imitating this good habit would benefit the present research area, too. Theoretical accounts in the domain of affect and cognition are often a matter of rhetorics and preferred verbal interpretation, rather

than strict, unequivocal validity tests. There is too little competition between theorists holding different positions in a truly pluralistic endeavor to motivate strict validity tests.

I substantiate this somewhat disappointing statement with reference to three popular topics also covered in Forgas's target article: the distinction of heuristic versus systematic processing, the moderating role of effort expenditure in positive versus negative mood states, and the influence of capacity and task constraints. When considered in an open theoretical framework such as the one in Figure 1, the meaning commonly attributed to all three topics is severely challenged.

Starting with the popular distinction, or opposition, of systematic versus heuristic processing, which is so common for dual-process theories, my sample syllogism may be useful once more. Systematic processing means to reason logically, being sensitive to all antecedent input and to logical rules, whereas heuristic processing means to endorse the conclusion because of some superficial cue, ignoring logical rules and reasoning proper. However, decades of research on syllogistic reasoning (or on the Wason selection task or other paradigms) did not find evidence that people ever reason systematically (cf. Fiedler & Hertel, 1994). Rather, all reasoning appears heuristic to some degree. Conversely, could any response, regardless of how elated the respondent's current mood is, be exclusively determined by superficial heuristic cues, without at least consideration of the input information? I cannot see any evidence, experimental or anecdotal, for such a purely heuristic strategy, just as I see no evidence that humans ever engage in systematic reasoning proper.

Rather, most of the time people integrate all kinds of available cues that are more or less relevant to an inference task. In the sample syllogism, these cues include the verbal quantifiers (e.g., *many, all*), some crude set-theoretic rules, domain-specific world knowledge, certain experimental demand characteristics, and so on. If a person is in a positive or negative mood, the affect cue may be utilized as well, but it remains to be shown that the cognitive process by which the mood cue is used is less systematic, or more heuristic, than the manner in which the other cues are used. In the entire literature on systematic versus heuristic processing, the use of syllogisms (or other materials of a clearcut logical structure) is conspicuously lacking.

Instead, the lion's share of evidence for systematic processing rests on the use of so-called strong and weak arguments in persuasion tasks. People in negative moods who are supposed to engage in systematic processing are convinced by strong but not by weak arguments, whereas people in good moods are equally convinced by strong and weak arguments. This finding is then widely accepted as cogent evidence for systematic processing in negative mood. I dare to cast this into

doubt. Argument strength is usually defined in pilot testing in terms of whether a majority of participants accept the argument or not. Could a strong argument be only a conformist argument and a weak argument a nonconformist one? Wouldn't such a critical validity question suggest itself in a pluralistic research endeavor? If so, wouldn't the finding that people in positive moods are less conformistic than people in negative moods be fully consistent with other evidence on positive affect and creativity? Wouldn't it then make sense that in thought-listing measures, the overall number of thoughts in negative mood is not higher than in positive mood? Or that people in good moods can in principle discriminate between weak and strong arguments equally well as people in negative moods, if explicitly asked for? And that people in good mood are cognitively more flexible (Ashby, Isen, & Turken, 1999)? And better at productive thinking (Isen, Daubman, & Nowicki, 1987)? And higher in self-confidence and self-efficacy (Kavenagh & Bower, 1985)? I am not offensively claiming here that my alternative interpretation in terms of conformism is correct. I only want to point out how little has been done to test cogently the validity of the claim that positive mood enhances the parameter for systematic processing. The available evidence is clearly open to alternative interpretations.

A very similar point can be made regarding the other two popular variables in affect and cognition research. The claim that positive mood reduces effort expenditure, relative to negative mood, is widely accepted as well supported, even though effort was virtually never measured. If it were measured, it may well turn out that the relation of mood and effort expenditure depends on whether the task is intrinsically or extrinsically motivated. In fact, Martin, Ward, Achee, and Wyer (1993) showed that whether people in good or in bad moods work longer on a task depends on whether the stopping rule asks if participants are still motivated intrinsically or if they are already content with the result. Even when effort is diagnosed better than in previous research, it may turn out to reflect an epiphenomenon rather than any genuine ingredient to the affect–cognition interface.

Regarding cognitive capacity, the common claim that good mood reduces cognitive capacity or resources and that this reduction is responsible for the more heuristic, less systematic strategy in good mood has been accepted as plausible, and it has entered many textbooks. However, capacity was rarely measured according to current standards of cognitive psychology. When Bless et al. (1996) used a dual-task paradigm, the residual cognitive capacity for the secondary task was higher in good mood than in bad mood. This finding may then be recognized as being quite in line with a number of other cognitive advantages of positive mood states, such as faster reaction times, less impairment on demanding tasks, or enhanced cognitive dif-

ferentiation (see Ellis & Ashbrook, 1988; Murray, Sujan, Hirt, & Sujan, 1990, inter alia).

If, however, variables such as heuristic, systematic, motivated (effort), or capacity cannot be upheld as the true mediating variables that explain the impact of affect on cognition and behavior, then what other variables may account for the affect–cognition interface? As delineated in several recent papers (Fiedler, 2001; Fiedler & Bless, 2000), the answer that I am proposing is that the crucial variable is the distinction between assimilative and accommodative processes (conceived in the very sense of Piaget, 1954). Assimilation and accommodation are complementary adapative functions. In a very simplified way, one may equate assimilation with knowledge-driven top-down processing and accommodation with stimulus-driven bottom-up processing. In my preferred theory, positive mood is assumed to support assimilation, whereas negative mood supports accommodation, in close analogy to different learning sets that behaviorists have found for appetitive situations (calling for exploration) and aversive situations (calling for avoidance or error). Moreover, because the individual's own mood state can enter only the assimilation function and not the accommodation function (which is by definition stimulus driven and independent of internal influences), this conception can explain that assimilative tasks (i.e., demanding, constructive, open-ended tasks) give rise to more mood congruency effects than accommodative tasks (stimulus-sensitive scanning or conservation tasks).

Such a theory can explain both the more creative, divergent cognitive style under positive than negative mood and the boundary conditions of mood congruency. Variables like effort, systematic processing, capacity, or heuristic cues correlate with assimilative versus accommodative processing, but only in specific domains and not for intrinsic reasons. When an up-to-date review of the literature, such as the one provided by Forgas in the target article, reveals that affective influences are particularly strong under systematic and heuristic processing conditions, neither "systematic" nor "heuristic" may have been diagnosed properly. Rather, it may be the constructive, assimilative nature of the tasks covered under the labels "systematic" and "heuristic" that is responsible for the strong mood congruency effects in the studies cited.

I do not want here to present this theory of my own as the ultimate solution. Maybe the kind of explicit delineation of the cognitive processes and the kind of cogent validity checks that I have called for will support a different model, or even one of those that I have questioned in my commentary. However, I insist that research on affect and social cognition—which includes social behavior, of course—ought to overcome the status of phenomenon seeking and climb up to the kind of model test that the multinomial modeling framework permits and offers, loudly. Toward such a goal, researchers should transgress all the strategy boundaries entailed in the AIM. They should engage in systematic processing when using tools like multinomial modeling. They should engage in motivated processing in a competitive, pluralistic theory game. They should exhibit heuristic processing when thinking freely about theoretical alternatives. As cumulative science proceeds and the set of well-established basic laws increases, they can increasingly resort to direct-access strategies when searching for new research strands. The weights given to these various factors, of course, should be allowed to vary as a function of the researchers' current mood.

Note

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"Dialogue Between My Head and My Heart": Affective Influences on Moral Judgment

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In 1786 Thomas Jefferson wrote a letter to Maria Cosway, a married woman with whom he had fallen in love while in Paris. The letter is commonly known as the "Dialogue between my head and my heart," for in it Jefferson's clear-thinking head scolds his passionate heart for having gotten the two of them in a fine (though chaste) mess. Jefferson's heart responds with a powerful rebuttal, charging that Nature has given the heart complete authority over morals:

> … in denying to you [the head] the feelings of sympathy, of benevolence, of gratitude, of justice, of love, of friendship, she has excluded you from their control. To these she has adapted the mechanism of the heart. Morals were too essential to the happiness of man to be risked on the incertain combinations of the head. She laid their foundation therefore in sentiment, not in science. (Jefferson, 1786/1975, p. 409)

Jefferson's head–heart model of morality (HHM) echoes David Hume's famous pronouncement that "reason is and ought only to be the slave of the passions, and can pretend to no other office than to serve and obey them" (Hume, 1739/1969, p. 462). Yet most philosophers have rejected the HHM and preferred instead some version of the Kantian reason rules model (RRM; Kant, 1785/1959). Although the RRM is primarily a normative model (about how we ought to make our judgments), it is also a descriptive model of a well or properly functioning person. Are people really capable of running their moral lives by pure reason? How do reason and sentiment work together in human moral life?

Moral psychology since the cognitive revolution has been primarily an extension of the RRM. Kohlberg (1969) built upon Piaget (1932/1965) to create a model in which children discover moral truths by a process of role taking and reasoning. I, however, have argued that the RRM is incompatible with recent developments in a variety of areas within and outside of psychology. Drawing on recent findings in primatology, neuroscience, anthropology, and social psychology, I proposed an alternative model, the social intuitionist model (Haidt, 2001), that integrates affective and reasoning processes in a way that is somewhat at variance with Forgas's affect infusion model (AIM).

The social intuitionist model keeps the basic Humean/Jeffersonian insight that moral judgments are like aesthetic judgments: They are gut feelings or intuitions that happen to us quickly, automatically, and convincingly (Zajonc, 1980). We see an event, or we hear a story told as gossip, and we know immediately that the act in question was right or wrong. Then, if somebody asks us to explain our judgment we search for reasons why our judgment is correct. Our moral reasoning works like a lawyer seeking evidence, not like a judge seeking truth (Kunda, 1990; Pyszczynski & Greenberg, 1987). We make up justifications post hoc, which we present as though they were the causal reasons that led to our initial judgment (Gazzaniga, 1985; Nisbett & Wilson, 1977).

The model is a social model in that it draws attention away from individuals as lone information processors and calls attention instead to the ways that moral judgments are influenced by other people. There is a

reasoned-persuasion link in which people can be swayed by the post hoc reasons produced by others, particularly if those reasons can trigger new intuitions in the listener (Lakoff, 1987). There is also a social-persuasion link in which people are influenced directly by the mere fact that a friend or peer has judged a situation a certain way (Bargh & Chartrand, 1999; Sherif, 1935).

The social intuitionist model sides with Jefferson and Hume in saying that intuitions (including emotional reactions) drive one's initial moral judgment, yet the model gives a far more prominent place to reasoning than did the old HHM. In particular, the model includes a private-reflection link in which people sometimes challenge or reverse their initial judgments just by mulling a problem over in their minds. When one looks at an issue from multiple perspectives, new intuitions can be triggered. If the new intuitions are stronger than the initial intuitions, the judgment may be reversed. In this way reasoning (as a conscious search for evidence and new perspectives) works together with intuition (as the rapid and automatic judge of that evidence). However, this reflective process is unlikely to occur within a lone thinker unless the initial judgment produced multiple contradictory intuitions or the initial intuition was weak. It is far more common for reasoning to work between people, in dialogue, where one person's ex-post facto arguments and justifications can trigger new intuitions in another person.

What does Forgas's AIM say about all of this? Forgas has argued that the role of affect is not constant across situations but rather that it "infuses" judgments to a variable degree depending on the levels of effort and openness involved in the thinking process. Is this correct in the case of moral judgments?

Before the AIM and the social intuitionist model can be compared, a critical difference must be noted. The AIM divides the mental world into cognition and affect, where affect means primarily mood. The social intuitionist model, however, draws on dual-process theories (Chaiken & Trope, 1999) to split the mental world into two different kinds of cognition: reasoning (i.e., a slow, effortful, sequential, and consciously accessible process) and intuition (i.e., a fast, effortless, automatic, and consciously inaccessible process whose products appear, unbidden, in consciousness). Intuition includes the rapid appraisals made by emotions as well as the instant like–dislike judgments that characterize affective reactions more generally (e.g., Zajonc, 1980). The question common to both models can now be restated as: How do emotional and affective processes infuse or otherwise shape moral judgments across the four cells of Forgas's 2 × 2 table of effort by openness? I look at each of the four processing strategies Forgas discusses and determine whether they apply in the case of moral judgment.

1. The direct-access strategy (in cases of low effort, low openness). Forgas points out that there are many cases in which one simply retrieves a prestored, preformulated opinion without any need for thinking and therefore without any opportunity for affect infusion. This makes sense for moral judgment. If someone asks for your opinion about abortion, your ex-spouse's new spouse, or the legitimacy of a president who wins in a contested election, you probably have already formed an opinion, and that opinion is unlikely to vary based on your momentary mood. However, to say that such direct access does not involve affect seems odd—such judgments are themselves typically statements of one's affective reactions (e.g., "I hate that guy!"). If affect does not infuse such judgments, it may be because such judgments are already fully permeated with affect.

2. The motivated-processing strategy (in cases of high effort, low openness). Forgas points out that sometimes thinking is highly selective, targeted, and dominated by a particular motivational objective. One expends effort to reach a preordained conclusion but is not open to alternative outcomes. Forgas argues that such thinking is once again impervious to affect infusion. Because the conclusion is preordained, it does not matter what sort of mood one is in. In the case of moral judgment, this process may arise after one has made an initial judgment (using direct access) and then had that judgment challenged by one's listener. In the social intuitionist model such challenges trigger the "post hoc reasoning link," in which one struggles to assemble reasons to support one's initial intuitive judgment. Forgas may be right that good or bad moods do not alter such post hoc reasoning, but once again affect seems to play a major role in the process. Motivated processing is often launched by an emotional reaction, such as anger (Haidt, in press). The stronger the affective state of the reasoner, the more motivated the processing is likely to be. Once again, if affect (as mood) does not infuse such processing, it is because affect (as emotion or some other sort of affective commitment) is in charge of the investigation, as Hume and Jefferson said.

3. The heuristic-processing strategy (in cases of low effort, high openness). Forgas suggests that heuristic processing is most likely when the task is simple, familiar, of little personal relevance, and when cognitive capacity is limited and there are no motivational or situational pressures for detailed processing. In such cases people base their judgments on their own affective reactions, using the "how-do-I-feel-about-it" heuristic (Clore, Schwarz, & Conway, 1994). This description captures what may be called the standard moral judgment situation: gossip. People spend much of their conversational time talking about and judging other people (Dunbar, 1996). When talking among friends there is little need to challenge each other, and people can strengthen their social bonds by sharing and validating each others' moral judgments (Hardin &

Higgins, 1996). People may therefore not only rely on their own emotions, but they may also use a "how-does-she-feel-about-it" heuristic to synchronize their judgments with the affective reactions of their friends.

4. The substantive-processing strategy (in cases of high effort, high openness). When a task is unusual, demanding, or complex, when people have adequate time and processing capacity, and when there are no direct access responses available and no motivational goals to guide processing, the AIM says that people use an open and constructive thinking process called substantive processing. This kind of situation is well known to morality researchers, for it describes the standard moral judgment interview (e.g., Kohlberg's [1969] method of interviewing about moral dilemmas, such as whether Heinz should steal a drug to save the life of his wife). This kind of situation seems to provide the ideal circumstances for principled, carefully reasoned judgment, yet Forgas argues that such situations are highly prone to affect infusion because there are so many opportunities for affect to bias the search for evidence and the open-ended construction of a response. Once again, the apparent disagreement hinges on the meaning of the word *affect*. If affect is used broadly to include emotions and other feelings triggered by the people being judged, then affect is not relevant here, by definition (because these cases are defined as involving no motivational goals). Perhaps because affect (as emotion or as liking/disliking) is not at work here, there is room for affect (as mood) to infuse the otherwise cool, calm, and analytical deliberations of a thinker contemplating a complex moral dilemma. The social intuitionist model handles such cases by saying that they almost never arise in the moral domain, outside an artificial moral judgment interview (Haidt, 2001). Real moral issues and dilemmas always involve affectively powerful commitments to people and principles, which are threatened by violators and deviants. The highly rationalist models based on the Kantian RRM are therefore products of a research method that pushed people into substantive processing, when in fact almost all of our moral life is carried on in the other three cells of the table.

In conclusion, there appear to be large differences in how the AIM and the social intuitionist model explain the role of affect in moral judgment. These differences vanish, however, once it becomes clear that the two models are using the term *affect* in very different ways. If the AIM were renamed the mood infusion model, there would be no apparent contradiction. Forgas has convincingly demonstrated that mood effects on cognition are not constant across social situations. And Forgas's general approach of looking for boundary conditions on any phenomenon is clearly a valuable one. Yet it seems inappropriate to ask about the ways that affect "infuses" moral judgment. Such a

formulation implies that the basic machinery of moral judgment is nonaffective and that it gets infused, sometimes, by affect. I believe the evidence is more consistent with Jefferson's formulation, in which the foundation of morals is found in sentiment.

Note

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Missing in Action in the AIM: Positive Affect's Facilitation of Cognitive Flexibility, Innovation, and Problem Solving

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The letter inviting me to participate in this project asked me to discuss my own thoughts and work in conjunction with the target article. In this case, the target article is very complex and ranges over a large number of topics, many of which invite comment. In the space available to me here, however, I cannot hope to comment on all, or even most, of those topics and issues, even though I would like to do so. Therefore, I limit myself to presenting a few points that illustrate how my work relates to a few of the themes of the target article, and how my understanding of the research literature differs from that presented in the target article.

I address three issues: some aspects of the historical account provided in the target article, which I think in several ways is misleading; internal inconsistencies within the target article and the affect infusion model (AIM); and, most important, research omitted from consideration in the target article that would have important implications for understanding the impact of positive affect on thinking and behavior if it were considered. For example, a central thesis of Forgas's (this issue) treatment of positive affect is the assumption that the effect of positive affect, when it does have an impact on thought and behavior, is generally to cause superficial, lazy, inattentive processing, and to interfere with careful, effortful, effective thought and problem solving. However, many of the omitted findings show that, under most circumstances, positive affect facilitates careful, effective, thorough thought and problem solving that is very responsive to the situation and to task requirements.

It is also true that several of the studies ignored by the target article report findings that are not compatible with predictions of the AIM pointed out by Forgas. Thus, our understanding of affect would be enriched by recognition of these data, as would the AIM itself.

In addition, one of the most striking aspects of the target article is that from reading it alone, one would not be aware that there is a large body of data showing that positive affect leads to more flexible, adaptive thinking and to enhanced innovative ability, creativity, and problem solving in a wide range of circumstances (e.g., Carnevale & Isen, 1986; Estrada, Isen, & Young, 1994, 1997; George & Brief, 1996; Greene & Noice, 1988; Hirt, Melton, McDonald, & Haraciewicz, 1996; Isen, Daubman, & Nowicki, 1987; Isen, Rosenzweig, & Young, 1991; Staw & Barsade, 1993, just to name a few; see Isen, 1999a, 2000a, in press, for discussion). Studies addressing this issue cover a wide range of tasks and contexts, from ones involving young adolescents and college students to ones involving organizational settings, interpersonal negotiations, and physicians solving diagnostic problems. This work confirms that positive affect promotes flexible, adaptive thinking that is creative and at the same time effortful, effective, thorough, and responsive to the details of the problem and the context. This is not the same as Forgas's position that positive affect results in thinking that is characterized by "top-down" processing, nor can it be explained in that way, because the findings indicate that people in positive affect are more open than controls to information and data.

This untapped body of work also provides that under some circumstances people in positive affect may be less likely to engage the task, and thus the effects of positive affect may not be apparent or may even seem to be the reverse and to result in poorer performance. However, this has been hypothesized to occur when the task is annoying or unpleasant *and* motivation to engage the unpleasant task is lacking (e.g., Isen, 1993, 2000a). Recent studies have supported this hypothesis (e.g., Isen, Christianson, & Labroo, 2001; Bodenhausen, Kramer, & Süsser, 1994, also offer an interpretation of data from their Study 4 that is compatible with the suggestion that if motivation to engage the task is insufficient, positive affect may appear to produce superficial processing). Note that the aspect of motivation discussed in the preceding paragraph has the inverse function from the one assumed in Forgas's formulation: Here, motivation is proposed to be necessary for the usual effect of positive affect (which is facilitative), to be apparent. That is, if a person is not engaging the task, one will not see improved performance on it. In contrast, in the AIM, motivation is said to overwhelm the usual effect of positive affect (which is assumed to be disruptive) and cause it to have no effect on thought and behavior (i.e., not to "infuse" thought).

The most important goals of my comment, then, are to focus attention on some of the evidence that is omitted from the target article, and to remind readers (a) that one of the most robust and widely confirmed findings in the affect literature is that positive affect increases cognitive flexibility, and (b) that there is substantial evidence in the literature (e.g., Aspinwall, 1998; Estrada et al., 1994, 1997; Fredrickson, 1998; Isen, 1993, 2000a, in press; Isen et al., 1991; Lee & Sternthal, 1999; Reed & Aspinwall, 1998; Staw & Barsade, 1993; Trope & Pomerantz, 1998) against the

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assumption that when positive affect influences thinking and behavior, it typically disrupts it and leads to lazy, superficial cognitive processing.

In this context, it should also be noted that I was surprised to see my work incorrectly cited as supporting the view that positive affect interferes with careful processing (and that negative affect leads to a more effortful, analytic, and vigilant processing style). These are not positions that my work has generally supported (e.g., Carnevale & Isen, 1986; Estrada et al., 1994, 1997; Isen, 1970, 1987, 1990, 1993, 2000a, in press; Isen & Geva, 1987; Isen et al., 1987; Isen et al., 1991; Isen, Niedenthal, & Cantor, 1992; Isen, Nygren, & Ashby, 1988; Isen, Shalker, Clark, & Karp, 1978). Instead, as a body of work, my research has shown that under most circumstances, positive affect enhances problem solving and the ability to take multiple factors into account simultaneously and deal realistically with whatever is necessary in the situation. Similarly, some of the papers that are cited in the last portion of the target article relating to the ways in which positive affect provides a resource and improves coping ability (e.g., Aspinwall, 1998; Trope & Neter, 1994; Trope & Pomerantz, 1998), although cited correctly, actually support the point I am making here—that positive affect facilitates flexibility and improved careful consideration of multiple factors if they need to be thought about in the situation—and it is difficult to see how they are compatible with the position portrayed in the target article.

It may be that some of the confusion that is arising is coming from differences in the use of particular words. For example, Forgas uses the word *open* as if it means "loose" or "open to bias from preconceptions," whereas in discussing my research, I have used it in virtually the opposite way, to describe data showing that people in positive affect are "open-minded," unbiased, responsive to input and requirements of the situation, not defensive or distorting of information. For example, in one study my colleagues and I found that, among physicians solving a diagnostic problem, those in a positive-affect condition were significantly *less* likely than controls to distort or ignore information that did not fit with a diagnostic hypothesis they were considering (Estrada et al., 1997). In discussing this result, we referred to those doctors as more "open" to information, less defensive.

For another example, where Forgas mentions "flexibility," one gets the sense that that word is being used to indicate a lessened emphasis on data or a looseness in thinking. In contrast, I have used that term more in accord with the definition, "characterized by a ready capability to adapt to new, different, or changing requirements" (Webster's Ninth New Collegiate Dictionary, p. 472), to refer to the ability to switch perspectives or entertain alternative perspectives to deal with data and solve a problem.

My comments on the historical notes in the target article may help to set the stage for other material I want to address. I agree that in the beginning of current efforts to study affect empirically, which I place in the late 1960s or early 1970s (rather than as beginning in the mid-1980s), it was a task just to have affect recognized as a variable that influences behavior and thought processes. One exception to this generalization was a computer model of thinking proposed by Simon (1967), which did allow a place for affect but conceptualized it as a disruption or "interrupt" in an otherwise goal-directed program. This exception to the more common practice of omitting affect altogether nonetheless was in keeping with earlier views of affect as arousal (e.g., Duffy, 1934; Lindsley, 1951) and may actually illustrate the marginal status granted to affect when it was given a place in a cognitive model. In fairness to these earlier authors, however, it should be noted that there was not a wealth of empirical evidence about affect (especially positive affect) to inform their models.

In an earlier chapter, written by Al Hastorf and me for the introduction to our edited volume, *Cognitive Social Psychology* (Hastorf & Isen, 1982), we described some historical perspectives on cognitive social psychology and on possible roles for affect in that domain (Isen & Hastorf, 1982). In doing so, we discussed the part that the so-called trilogy of mind (i.e., cognition, conation, and affect) had played, citing Hilgard's (1980) then-new paper on the topic. We noted that in various periods, one or the other of the three parts to the tripartite conceptualization of mind dominated, and that affect had been relatively neglected in the empirical work of our field and deserved a place. More important, we argued for the importance of *integrating* the three rather than switching emphasis from behavior and motivation (conation), which had been most prominent earlier, to cognition, which was then currently dominant, and then to affect. We suggested that the integration of cognition, affect, and motivation was needed. Now, it seems that the emphasis is again switching, this time back to conation (in the form of motivation), but the hoped-for integration has not yet been accomplished.

I mention this now because it seems that, even in some of the newest models, such as the AIM, affect is still regarded as an outside, irregular, usually disruptive force, rather than as a fundamental integrated component of human functioning. This, then, is one of the ways in which the AIM or the target article is internally inconsistent, because it calls for integration of affect into the tripartite conceptualization of functioning yet still treats affect as separate and secondary (or even tertiary).

To say that affect will be "infused" into decisions or thought processes only under certain circumstances, and to identify, in vague terms (not specifically), one or two of those circumstances may not add enough to our understanding to justify the cost inherent in the AIM's

view that affect is separate. In addition, the AIM fundamentally leaves out motivation, as well, except to conceptualize it also as an outside force that overrides everything when it occurs (but not defining or predicting the situations or particular motives that should be expected to produce such effects). It implies that motivation does not play a role in the situation or process unless it is overwhelming other processes, rather than viewing motivation as potentially guiding them, energizing them, causing selection among them, and so on.

The second point I would make regarding the history presented in the target article is that, in my view, contrary to the assertions in that article, the social psychological work on the influence of affect on social behavior and thought processes, from the very beginning, sought to differentiate the conditions under which affect would influence thought and behavior in different ways. In fact, it went beyond what the target article urges and considered not just whether affect would have an influence under a given set of circumstances, as the AIM seeks to do, but how the impact of affect may be *different* under different circumstances. Far from being impervious to ways in which the task or the situation modifies the impact of affect on thought and behavior, far from assuming that observed effects "apply universally across a wide variety of circumstances" (as charged in the target article), the literature, from the beginning, differentiated between affects, tasks, and circumstances, and attempted to identify differences in the influence of different types of affect, different affect inductions even within the same valence, different stimulus materials, and different circumstances (e.g., Cunningham, Steinberg, & Grev, 1980; Isen, 1970; Isen, 1990; Isen et al., 1978; Isen, Johnson, Mertz, & Robinson, 1985; Isen & Levin, 1972; Isen & Shalker, 1982; Isen & Simmonds, 1978; Teasdale & Fogarty, 1979; Teasdale, Taylor, & Fogarty, 1980; Weyant, 1978, to name just a few).

There were two goals in the early literature in doing this. The first was to see ways in which affect influences thought and behavior, because little was known about the impact of everyday affect at the time. The point of departure, in this work, was that people's behavior is purposive and multidetermined, and therefore it was also assumed that the effects of affect would differ in different circumstances or with different materials, as those factors influence what people see as possible, what they are trying to accomplish in the situation, what goals or motives become relatively more influential, and so forth.

The second goal of the early studies on affect was to learn about the nature of affect itself empirically—by seeing what factors that influence or mediate the effects of affect—and, in this way, to form an empirical database that might later be used to develop a viable model. That is, the researchers adopted the view that by discovering different effects of different affect in-

ductions, or discovering situations that change the impact of the same affect inductions, we can learn about at least some of the processes that underlie or play a role in the affect itself and that therefore may even constitute its nature. For example, if consequences to the helper make a difference in the influence of positive affect on helping, that may tell us, among other things, that the effect on helping is not automatic or irresistible but is the product of thought, at least in that situation. If an important modifier of the influence of positive affect on helping is the potential for the helping task to disrupt the positive affect (e.g., Isen & Simmonds, 1978), then we also learn that desire to maintain the induced positive feeling state is a motive engendered by positive affect in that situation and is important enough to receive consideration. That does not mean that it will be the only motive engendered by positive affect or that it will always govern behavior, but we at least learn that such a motive receives consideration in that situation and perhaps regularly or in a certain class of situations (see Isen, 1987, 2000a, 2000b, for discussion). For another example, data showing that positive affect leads to improved evaluation of neutral material but not negative material tell us that effects of positive affect are not akin to donning rose-colored glasses and will not simply raise evaluation of everything or have an equal impact on all stimuli (e.g., Barone, Miniard, & Romeo, 2000; Isen, 1993, 1999b; Isen et al., 1985; Isen et al., 1992; Isen & Shalker, 1982; Kraiger, Billings, & Isen, 1989; Urada & Miller, 2000).

Taking this perspective, the early work on affect differentiated between affects of positive and negative valence, and also sought to investigate finer differences within these categories, by varying the nature of the affect inductions and the response situations. For example, in early studies investigating the impact of positive affect on helping behavior, we used several different positive affect inductions (i.e., success or failure on a task, unexpectedly being offered a cookie while studying in a library, finding change in the coin return of a public telephone, receiving a free sample, being provided refreshments during an experimental session, viewing a few minutes of a comedy film), each intended to address or rule out potential alternative interpretations (e.g., feeling more competent, cueing of achievement motivation, imitation of a helpful model, etc.) and to shed light on the mechanism underlying the link between affect and helping (e.g., Isen & Levin, 1972). We also studied seven different ways to express helpful, generous, kind behavior, done also to broaden the "helping" variable empirically and to see whether the type of helping opportunity made a difference (Isen, 1970; Isen, Clark, & Schwartz, 1976; Isen & Levin, 1972; Levin & Isen, 1975). Other teams of researchers broadened these findings still further, using still more affect assessments or inductions and additional helping measures (e.g., Cialdini, Darby, & Vin-

cent, 1973; Cunningham, 1979; Cunningham et al., 1980; Weyant, 1978). The fact that in some cases positive affects or different positive affect inductions or dependent measures produced similar effects was information that resulted from this early work, not an assumption that all affect was of a piece.

Thus, the field cumulatively established that positive affect, induced in a wide variety of ways, promoted helping, also represented broadly. In the process, one by one, alternative mechanisms underlying the effect were addressed as well. My work, and that of others, went on to investigate additional conditions under which positive affect would or would not facilitate helping. In two of my studies, for example, we found that positive affect would *not* lead to increased helping (in fact, decreased helping) if the task was expected to dispel the person's positive affect state (Isen & Simmonds, 1978) or if the benefactor of the helping was a disliked cause (Forest, Clark, Mills, & Isen, 1979). Similarly, other investigators studied the effects of factors such as the source of the motivation to help (e.g., wanting to help vs. having to help) and the relative costs to the helper versus the relative benefit to the person being helped (e.g., Cunningham et al., 1980; Weyant, 1978).

All this work was intended to discover not only conditions under which affect (of various kinds) would or would not influence thought and behavior, but also the processes potentially underlying, guiding, or determining that influence. In an important sense, then, this work informed us about the nature of affect or various affects empirically, by shedding light on the processes involved. In the space available here I cannot completely review the early literature on affect or even affect and social behavior, but even this brief overview of a few of the helping studies shows that these programs of research were systematic and cumulative and contributed to gradually expanding our understanding of the influence of affect on prosocial behavior, our understanding of the kinds of factors that could modify those influences, and our empirical understanding of affect. It is not clear to me why the target article distorts the early work on affect and social behavior, and on affect and cognition, by saying that it sought only universals and was impervious to influences of contexts and materials.

From this early work on positive affect and helping, then, we learned much about at least some of the processes playing an important role in positive affect and its influence on behavior. One theme emerging from that body of work is that the influence of positive affect is mediated by thought processes and decision processes. For example, as noted previously, positive affect often increased a person's tendency to help others, but not if the helping task (e.g., reading a booklet of statements described as likely to put people in a bad mood) was expected to dispel the positive feelings (Isen & Simmonds, 1978), nor if the help would bene-

fit a disliked cause (National Association of Manufacturers; Forest et al., 1979), not if the task would disadvantage a third party (e.g., distract him or her by playing with paper, etc. while the person was trying to study; Isen & Levin, 1972), and so on.

In the context of the target article, it should be noted that some of the conditions just described that reduced the typical effect of positive affect on helping are ones that require additional thought and, therefore, according to the target article, should have been more likely to have produced behavior and thought *more* influenced by affect. It would seem that the AIM would predict, for these situations, more of what Forgas calls "affect congruence," which would mean assimilation toward the positive—positive interpretation of the situation, the mildly disliked cause, the disruption of the third party by playing, the potentially affect-inducing statements—and should have resulted in *more* helping, not less. That is, affect should have infused thinking and behavior in those situations. It is important to note, also, that those negative aspects of the situation were mild and ambiguous, and therefore, according to the AIM, positive affect should have led to a more benign interpretation of them and to increased helping. They would not seem extreme enough to be in the category called "motivated," where according to the target article motivation is proposed to overwhelm the situation and cause positive affect not to have impact. In any case, the AIM cannot explain the fact that these conditions resulted in decreased helping compared to controls (rather than no effect).

Much of this work, then, suggested that thought processes were important mediators of the impact of positive affect, or possibly components of affect itself. Based on this kind of evidence, we proceeded to investigate the cognitive effects and cognitive mediation of positive affect more directly, beginning with memory (Isen et al., 1978). Here again, from the very beginning, most researchers studied factors that modified the effects of affect on cognition that were observed—factors such as the valence of the affect induced, the valence of the materials to be processed or judged, the processing goals of the person, the difficulty of the task, the interestingness of the task, whether feedback on task performance was provided, and the motivation or incentive provided to the participants, just to name a few (e.g., Isen, 1984, 1985, 1987; Isen et al., 1978; Isen et al., 1985; Isen & Shalker, 1982; Nasby & Yando, 1982; Teasdale & Fogarty, 1979).

For example, early on, a distinction was found between negative and positive affect in impact on memory. Whereas positive affect was found to be an effective retrieval cue for positive material in memory, negative affect (particularly sadness) was often found not to be an effective cue for negative material, or was notably less effective as a cue (e.g., Isen et al., 1978; Nasby & Yando, 1982; Snyder & White, 1982;

Teasdale et al., 1980). In addition, other early papers showed that the valence of the *stimuli* played a role in whether affect would influence memory or interpretation of the materials (e.g., Isen et al., 1985; Isen & Shalker, 1982; Schiffenbauer, 1977).

In fact, it was for reasons such as these that I argued that a careful reading of the literature would not lead people to expect a generalized "mood-congruence" effect of the kind described in the target article (and that, according to the target article, became problematic). It is possible that at least some of the seeming difficulty in obtaining affect congruence, and some of the controversy mentioned in the target article, occurred because authors combined positive and negative affect congruence into one measure, expecting a general phenomenon of "affect congruence" rather than separate, identifiable impacts of positive affect and negative affect, each on different materials. This was pointed out in relatively early articles (Isen, 1984, 1985).

In these and similar ways, the early work on affect and memory not only provided important information about the nature of affect but also increased our understanding of cognition. For example, the ability of affect to cue material in memory, and the asymmetry between positive and negative affect (particularly sadness) in this regard, alerted us to the potentially central role of feelings (especially positive feelings) in thinking.

Further, these results tell us something more. Given the encoding specificity principle—that for a cue at time of retrieval to be effective in facilitating memory, the material must have been encoded and stored in terms of that cue (e.g., Tulving & Thompson, 1973)—these results tell us that positive feelings can organize a category in memory and that people spontaneously use positive feelings (but not negative feelings) as a way to organize their thoughts (see Isen, 1985, 1987, for discussion).

As explained in earlier papers (e.g., Isen, 1984, 1985, 1987), although these results involve cognitive priming, they do not support Bower's (1981) network-and-spreading-activation model of the influence of affect on cognition, and it is not appropriate to equate all priming or information-processing approaches with Bower's (1981) model, as the target article does. Research did not support the state-dependent-learning provision of Bower's model, the symmetry that would be expected between positive and negative affect as cues, or the fan effect or cue-overload provision of his model (which holds that positive affect, because it is very frequent and associated with a lot of stimuli, should not be an effective cue at time of retrieval for material learned during the session). For more detail on these distinctions and ways in which the data do not fit Bower's (1981) model, please see Isen (1984, 1987), Isen et al. (1978), and Teasdale and Russell (1983). Later data on the influence of positive affect on word associations to neutral, but not to negative, words (Isen et al., 1985) also are dif-

ficult to explain using Bower's spreading-activation model.

In addition, early work as well as later work on the influence of positive affect on cognitive processes went even further and demonstrated additional effects—notably, on problem solving (both social and nonsocial), preferences, and decision making of several kinds—and additional factors that moderated the influence of affect. Again, this work also investigated the impact of positive affect on cognitive processes in different situations, demonstrating not just presence or absence of affect effects but showing, in addition, that positive affect had very different effects depending on the circumstances. Effects of positive affect were observed on face-to-face integrative bargaining (improving both the process and the outcome; Carnevale & Isen, 1986), on categorization (Isen & Daubman, 1984; Isen et al., 1992), on perceptions of and behavior toward out-group members (Dovidio, Gaertner, Isen, & Lowrance, 1995; Urada & Miller, 2000), on task perceptions and job satisfaction (improving evaluation of appealing tasks but not of dull tasks; e.g., Kraiger et al., 1989), on novelty of word associations (Isen et al., 1985), on creative problem solving (improving it; e.g., Isen et al., 1987), on physicians' diagnostic processes (improving them; Estrada et al., 1994, 1997; Isen et al., 1991), on variety seeking (Kahn & Isen, 1993) and on risk preference (e.g., Isen & Geva, 1987; Isen & Patrick, 1983; Nygren, Isen, Taylor, & Dulin, 1996). Again, in many of these studies, details of the situations and the stimulus materials made a telling difference in the effect of positive affect that was observed, often producing significant interactions with the affect variable.

Two series of studies showed effects of positive affect on people's risk preferences and behavior and on their preference for variety. Interestingly, these effects were found to differ markedly in high-risk or potentially unpleasant situations, compared with safe, enjoyable situations. In both the social domain (e.g., Cunningham et al., 1980; Isen & Simmonds, 1978), and the cognitive (e.g., Isen et al., 1988; Isen & Geva, 1987; Isen & Patrick, 1983; Kahn & Isen, 1993), the effects of positive affect appear to be different when the situation is negative or threatening (or even just dubious), compared to the effects of positive affect when the situation is safe and enjoyable. For example, in three studies on variety seeking, where the products to be tried promised to be enjoyable, people in positive affect included a broader range in their consideration set and showed greater preference for variety among them than controls; where the product was unfamiliar and was described as low salt (and therefore possibly of questionable taste quality), this effect did not obtain (Kahn & Isen, 1993). For another example, in several studies in the risk domain, where the odds of winning were very high or the situation hypothetical, positive affect led people to display more risky behavior and to

appear more willing than controls to take a chance, but where there was a substantial chance of a real, meaningful loss, positive affect led people to be more conservative (i.e., less willing to take the risk) than controls and to indicate having more thoughts about losing (Isen & Geva, 1987; Isen & Patrick, 1983).

These effects held even while people in positive affect evaluated the *probability* of winning as higher than did controls. Studies showed that, although positive affect led to increased expectation (i.e., probability) of a favorable outcome, it simultaneously resulted in people's estimating that a given loss, if it occurred, would feel worse (i.e., would hold greater *negative* utility for them); and their behavior was cautious in the situation (Isen et al., 1988; Isen & Geva, 1987; Isen & Patrick, 1983; Nygren et al., 1996).

Thus, there is evidence (Isen et al., 1988; Nygren et al., 1996) that positive affect has an impact on both subjective probability estimates and expected utility estimates in these situations and cannot be said simply not to be "infusing" thought and decision making in them. That is, these sets of data do not simply fit the "motivated" category of the AIM, where positive affect is theorized not to have impact, being overwhelmed by a motivation that takes precedence. On the other hand, if one allows that affect is "infusing" this thinking, then it must be noted that these are not results one would expect if positive affect causes heuristic, "affect-congruent," sloppy, lazy, and thoughtless responding, as asserted in the target article.

For all these reasons, it does not seem likely that the AIM would have predicted these results or can account for them. More generally, the data show that, in safe situations, positive affect leads to exploration and trying new things (not reliance on established knowledge and knowledge structures, as asserted in the target article), and in risky situations, to self-protection (not distortion or overlooking of the danger as might be expected from the kind of "affect congruence" described in the target article). There is simply not evidence here for the kind of simplified processing proposed in the target article to result from positive affect. In particular, the findings indicate that in a dangerous situation people in positive affect, compared with controls, think through the possibilities and, despite the priming of positive material that occurs, realistically take potential dangers in the situation into account, and then behave so as to protect themselves.

How on Target Is the AIM?

Because of space limitations, this is not the place for a full review of the AIM, but a few concluding thoughts are in order. As noted, the model advanced in the target article seems internally inconsistent in several ways. It calls for integration of affect, cognition, and motivation,

yet seems to present affect and motivation as outside, secondary, forces affecting cognitive functioning irregularly. (As an aside, although the model proposes that motivation will cause positive affect not to be infused and therefore not to influence thought and behavior, neither the model nor data supporting the model provide any evidence to establish that motivation or any process is "overriding" some other processes.)

Similarly, the target article (and the AIM) calls for a more differentiated approach to understanding the influence of affect on thinking and behavior and yet itself proposes only one predictable effect of positive affect (a disruptive one) when positive affect does "infuse" thought and behavior. Namely, the effect that is described, repeatedly, is one leading people to rely on existing schemata or habitual ways of thinking or behavior and causing distortion, superficial processing, and the like. This model does not provide for different impacts of positive affect in response to different situations or stimuli.

Third, for the most part, the target article simply ignores data that do not fit its view. An exception is the section toward the end of the paper entitled "Positive Affect as a Resource in Interpersonal Situations," in which Forgas adopts a view that is not compatible with the position held in the rest of the paper. That is, here the author considers some of the work by Aspinwall and her colleagues (e.g., Aspinwall, 1998; Reed & Aspinwall, 1998) and Trope and his colleagues (e.g., Trope & Neter, 1994; Trope & Pomerantz, 1998), showing that positive affect and related states can provide resources and facilitate effective coping that is responsive to situations. However, in doing this, Forgas ignores the fact that this formulation and these data do not fit with his own view (for examples of the ways in which those authors' positions are not compatible with the position put forth in the target article, see Aspinwall, 1998; Aspinwall & Brunhart, 1996; Aspinwall & Richter, 1999; Isen, 2000a, in press). This, then, is another way in which the position put forth in the target article is internally inconsistent.

Besides these internal inconsistencies, the position put forth in the target article is not consistent with several large and growing bodies of data showing that positive affect facilitates careful, systematic cognitive processing, creative and effective problem solving, innovation, and variety seeking. It ignores the large body of data showing that positive affect leads to flexible thinking and problem solving, which seems to be the hallmark of positive affect.

Another serious problem for the AIM is that even its own predictions are not upheld, if one considers the findings of some of the studies that the AIM and the target article have ignored. For example, Forgas argues that positive affect should not have an impact on simple tasks such as recall of word lists, yet positive affect has been found to influence simple tasks such as recall

of positive words from word lists (e.g., Isen et al., 1978; Teasdale & Fogarty, 1979) and first associates to neutral words (Isen et al., 1985). In addition, as already noted, in many situations positive affect has been found to facilitate performance, even where tasks are complex or difficult ones such as physician diagnostic processes (Estrada et al., 1997; Isen et al., 1991) and social–cognitive tasks that require combination of complex and simple tasks, such as integrative bargaining (Carnevale & Isen, 1986; Isen et al., 1987; Isen et al., 1992). Further, the effects that have been found in those cases have been facilitation of performance and complex thinking by positive affect, which would not be in keeping with the prediction of the model that where positive affect infuses behavior, it causes superficial processing.

Likewise, as noted earlier, the data on the influence of positive affect on helping and on risk perception and risk preference are not compatible with predictions from the AIM. In the helping studies, the usual influence of positive affect on helping was not observed (in fact, it was reversed) if the helping task was one that raised questions about its desirability. In the risk studies, positive affect led to increased subjective probability of winning, but at the same time it led to greater perceived negative utility of losing and more concern about the potential loss, with the result that people in the positive-affect condition showed less willingness to take a gamble if the risk was real and there was a high chance of a meaningful loss. Similarly, in the variety-seeking work, positive affect did not increase preference for variety where the products were described as "low salt" and therefore not sure to be tasty (Kahn & Isen, 1993). It does not seem likely that the AIM would have predicted any of those results.

In sum, the model presented in the target article attempts to systematize understanding of two factors that are proposed to play a role in determining the impact that affect will have on thinking. However, there still remain several challenges for that model, foremost among them accommodating data that are incompatible with its conceptualizations and predictions. A full discussion of all the issues confronting the model, from questions about the precise definitions of its terms and variables, to issues relating to identification of their independence or their interdependence with more usually considered variables and terms, is beyond the scope of this commentary.

Notes

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Culture, Emotion, and the Good Life in the Study of Affect and Judgment

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The appealing dichotomy between passion and reason (or affect and judgment) and its accompanying metaphors (e.g., master–slave) have long misled Western thought. The work of Forgas and others (e.g., Clore, 1994; Frank, 1988; Schwarz, 1990) has exploded this dichotomy. The last 20 years of empirical research have shown that the influences of affect upon judgment are striking in their breadth: Subtle affective states influence a wide range of cognitive processes, from causal attribution to judgments of well-being. We no longer view affect as disruptive and irrational; rather, affect provides valuable input into social judgment, perhaps for adaptive reasons. We no longer view judgment as a purely cognitive or cool process. Passion and reason are intertwined processes.

In this brief response to Forgas's (this issue) thoughtful target article, we address three interrelated questions. How do culture and context figure in the interplay between affect and judgment? Do discrete emotions influence judgment in different ways? Finally, how do recent studies of affect and judgment inform the study of positive emotion? Our answers reveal the promise and modest pitfalls of Forgas's integrative account of affect and judgment.

Affect and Judgment in Culture and Context

The literature on affect and judgment was defined by a subtle irony. On one hand, studies of affect and judgment reveal the human mind to be highly sensitive to the social perceiver's current context—basic judgmental processes shift according to evanescent and incidental affective states. On the other hand, there was little theory about how context itself contributes to the interaction between affect and judgment.

It is on this issue that Forgas's affect infusion model (AIM) makes such a generative contribution. Forgas proposes that affect will influence judgment in contexts that require open, constructive processing. Situations that are novel, complex, and atypical, Forgas reasons, should recruit more substantive processing and allow for greater infusion of affect into social judgment.

These insights help address two concerns raised by the target article. The first has to do with culture. It is now clear that culture shapes social judgment in profound ways, from attribution processes to moral judgment (e.g., Peng & Nisbett, 2000). It also appears to be the case that members of certain cultures are less prone to rely on their current feeling states in making judgments. For example, East Asians do not rely on current feelings to assess life satisfaction, which is a robust tendency for Western European individuals (Suh, Diener, Oishi, & Triandis, 1998). How may one begin to systematically incorporate culture into models of affect and cognition?

Forgas's model makes some clear and compelling predictions. Most generally, to the extent that cultural norms allow for open, constructive judgment, one would expect affect to guide judgment more. Thus, one may expect members of cultures in which social judgments (e.g., about gender, power, aesthetics) are continually negotiated and constructed to be more susceptible to the influences of affect on cognition. This may account for greater variability and change in social judgment across different cultures. More specifically, in domains in which cultures have elaborate conventions, scripts, and constraints that govern social behavior and judgments of social behavior, one would expect current affect to influence judgment less.

Shifting down a level of analysis, one may ask a similar question about the interplay between affect and judgment in different roles and relationships. Are we more or less likely to be guided by affect in our social judgment in the context of different relationships? Again, Forgas's ideas prove to be a superb guide in an-

swering this question. Certain roles and relationships are likely to encourage open, constructive processing. One would expect individuals in these roles to be more guided by affect in their social judgments.

One clear candidate is power. High-power individuals have been shown to rely on social heuristics, such as stereotypes and in-group favoritism (Fiske, 1993; Keltner & Robinson, 1997). This finding suggests that high-power individuals rely more on their current feelings to make social judgments (which may account for the impulsive decision making of certain leaders). Although no evidence has directly assessed this prediction, select studies indicate that high-power individuals' feelings are more closely linked to their expressive behavior (Hecht & LaFrance, 1998), suggestive of a tighter covariation between feeling and other processes for high-power individuals. By linking social context to social cognition, long the foundation of social psychology, Forgas provides generative answers to questions about how the link between affect and judgment varies systematically across contexts.

Beyond Valence: Effects of Specific Emotions on Judgment

The astute reader will no doubt wonder, as Forgas himself does, about the effects of specific emotions on judgment. An angry policymaker or person on a blind date seems to perceive, judge, and act in ways that differ from a fearful or sad counterpart. In its treatment of discrete emotions, the target article suffers from numerous confusions. The studies focus on comparisons of participants in "happy" and "sad" moods, although it is not clear why these people are assumed to be experiencing moods rather than emotions. *Happy* is a fairly vague term that may gloss over important distinctions among positive states (e.g., love, desire, relief, hope). An implicit message is that the effects of moods upon judgment may be greater than those of discrete emotions. Thus, Forgas states that "because moods tend to be less subject to conscious monitoring and control, their effects on social thinking, judgments, and behavior tend to be potentially more insidious, enduring, and subtle." Not only is there some contradiction in terminology (i.e., effects that elsewhere are considered adaptive are here considered insidious), but the assertion that moods influence judgment more than emotions is wrong.

There is now a modest literature on the effects of specific emotions on judgment (for review see Lerner & Keltner, 2000). This literature originated in a simple question: Do all negative states have the same influence upon judgment? The literature on negative moods suggests so, or at least it does not offer specific predictions to the contrary. However, a close inspection of the cognitive content of different emotions, generated by stud-

ies of emotion-related appraisal, leads to a different conclusion. This literature shows that each emotion is defined by a distinct appraisal theme that constitutes the core meaning of the emotion (Smith & Ellsworth, 1985). The core theme of anger, that which differentiates it from other negative states, is the unfairness of others' actions. In contrast, sadness is defined by the sense that fate and circumstances are the cause of one's current condition. Fear is defined by extreme uncertainty about potentially dangerous outcomes.

These appraisal studies suggest that distinct emotions of the same valence exert different effects on social judgment. Indeed, several studies indicate that this is so (see Lerner & Keltner, 2000). For example, in one set of studies, sad people tended to attribute a variety of social events, both relevant and not relevant to the self, to a balance of situational factors and others' actions; angry individuals largely attributed the same events to others' actions (Keltner, Ellsworth, & Edwards, 1993). This finding poses problems for Forgas's claim that negative affect in general makes people less prone to the fundamental attribution error, namely the tendency to attribute others' actions to their dispositions and traits. Specifically, this would not seem to be the case for the angry individual.

A more recent set of studies compared the risk perceptions and preferences of fearful and angry individuals (Lerner & Keltner, 2001). Fear, defined by pronounced uncertainty, related to more pessimistic judgments in which risk and loss loomed large. Anger, defined by elevated certainty, related to more optimistic judgments in which risk seemed insignificant. Perhaps most strikingly, one study found that the optimistic judgments of angry people resembled those of happy people, who also showed optimism in their judgments.

We suspect that future research on positive emotions will uncover the same sort of story: Different positive states, such as love, desire, relief, or pride, exert different influences upon judgment. Furthermore, certain positive states are likely to influence judgments in ways that diverge from Forgas's summary—, that is, that positive states lead to the adoption of creative, open, constructive, and inclusive thinking styles. For example, it is hard to imagine how the person experiencing intense love is open, constructive, and inclusive in his or her information processing.

What is one to make of the challenges this literature poses to summaries of how mood states affect judgment? One answer is that moods and emotions are qualitatively different, and they engage different processes in the realm of judgment. Another possibility is that some other overarching categorization of affective states accounts for the effects of moods and emotions on judgment, rather than valence. For example, one candidate may be approach–avoidance. A third option is that we need to treat the distinct moods and emotions in more precise terms to account for the different ways

affect influences judgment. A sacrifice in parsimony may lead to significant gains in predictive precision.

The Nature of Positive Emotion

We conclude by integrating insights offered by Forgas on positive affect and judgment with recent advances in the study of emotion. For too long, the positive emotions have been second-class citizens in the study of affect. Most theorists assume that there are more negative than positive emotions (with no basis for such an assumption) and often group diverse states under a rather nonspecific rubric (e.g., "happy," "enjoyment").

In the target article, Forgas cites certain findings that positive affect at times leads to striking effects upon judgment: People in positive moods are more likely than people in negative moods to process threatening information successfully. These findings dovetail with recent studies of the physiology and expressive behavior of positive affect. Specifically, when people show positive expressive behavior or they watch positive film clips following distressing ones, their stress- related cardiovascular arousal returns to baseline more quickly (Fredrickson & Levenson, 1998). Bereaved adults who showed pleasurable laughter while talking about their deceased spouses reported less distress and showed evidence of dissociating from the physiological distress of the loss (Keltner & Bonanno, 1997). Young women who showed strong positive emotion in their yearbook photos at age 21 were less likely to experience negative emotion over the course of their life and more likely to avoid conflict in marital relations (Harker & Keltner, 2001).

These studies converge on a very interesting feature of positive affect—it is associated with the transformation of distressing information. This body of evidence disconfirms several misconceptions about positive emotion (see also Ashby, Isen, & Turken, 1999). Positive emotion is not associated with the denial or disregard of negative information; rather, it is associated with discoveries of meaning in that information. Positive emotion is not associated with more superficial, careless cognition; rather, it is associated with complex and creative uses of information. Here again, the tradition that Forgas has helped stimulate has challenged basic assumptions about the human mind.

Note

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Implications of the Affect Infusion Model: Conjectures and Conflict

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The affect infusion model (AIM) was originally designed to account for mood-congruent effects in social cognition (Forgas, 1995a). It provides a means of integrating two explanations of mood effects, namely affect-as-information (Schwarz & Clore, 1988) and affect priming (Bower, 1981). It outlines the situations in which each process dominates and therefore is the primary method for affect to influence thinking and behavior. The model accounts admirably for mood effects on memory (Bower & Forgas, 2000) and an astonishing array of affective influences on social thought, judgment, and behavior. This array includes but is not limited to person perception (Forgas & Bower, 1987), rating the likelihood of positive or negative events (Wright & Bower, 1992), rating satisfaction with one's intimate relationships (Forgas, Levinger, & Moylan, 1994), selecting negotiation strategies (Forgas, 1998b), and formulating requests (Forgas, 1998a).

The AIM also clarifies the conditions that are and are not likely to manifest mood effects. Specifically, when processing is easy and familiar, current mood has less of an impact on task performance than when processing is more demanding, more difficult, and more unusual. Hence, it is precisely—and counter-intuitively—when people are paying greater attention, considering carefully, and exerting more cognitive effort that they are likely to be biased by their current, and often unrelated, mood state (Forgas, in press).

This pattern of results has an important implication, namely, that such performance differences are more than responses to the demand characteristics invoked by mood manipulations. As affect researchers well know, there have been criticisms that mood manipulations clearly change experimental demand across conditions, whereas changes to participants' mood states are less certain or at least are confounded with the demand characteristics (Polivy & Doyle, 1980). As such, critics have cautioned that the effects reported in manipulation studies are unclear as to causation (Ingram, 1989). Experimental demand would be stable across difficult and easy materials and thus implausible as an explanation of any differences. Consequently, the greater precision that AIM allows makes it a more parsimonious explanation of the data set as a whole.

Beyond accounting for existing effects, the model is well suited for extension to other areas of investigation where mood may be an important consideration. A case in point is the area of mood-dependent memory—the concept that materials encountered while under the influence of a certain mood are remembered more readily when that mood is again experienced. Mood dependent effects occur more regularly with tasks that rely on the do-it-yourself principle (Eich, 1995b). Specifically, mood dependence is more likely when the tasks encourage participants to rely on their own internally originating thoughts and images more than on externally provided cues and information. These conditions correspond quite well with the AIM view that open and constructive tasks lead to larger mood effects.

Numerous experiments have now been published in which mood-congruent effects were larger when participants considered unusual or atypical materials (Forgas, 2000). Thus, when participants made judgments about, say, couples (Forgas 1995b), those who were mismatched on attractiveness recruited more careful consideration during the judgments than did couples who were more typical (i.e., whose attractiveness was matched). According to the AIM, this careful consideration allowed affect priming to exert its influence and resulted in greater mood-congruent effects. From our perspective, the more that tasks rely on information processing that can be colored by mood, the greater the likelihood that mood will be incorporated into the memory trace, thus making it an important factor during later memory testing. Given the harmony between our views on the types of tasks that allow mood-congruent and mood-dependent effects, it is clearly worth determining whether unusual or atypical materials enhance production of mood dependence. Just such an investigation is currently underway.

It is clear that the AIM has been developed to bring together data from a variety of literatures, yet some research areas remain that are difficult to reconcile with the approach. For instance, according to the AIM, negative affect encourages bottom-up, externally focused processing, but the literature on self-focused attention in depression (Pyszczynski & Greenberg, 1987) suggests that negative affect leads to more internally focused processing, proposals that are clearly in conflict. In an unpublished study (Forgas, 2000), sad participants made fewer mistakes given misleading post-event information than did happy participants. However, if negative affect encourages externally focused processing, it seems equally as sensible to expect greater reliance on externally provided information. Thus, one may predict that negative affect increases incorporation of misleading information. In the research described previously, the experimenter provided mis-

leading information that sad participants did not incorporate into their responses, a finding that seems at odds with the view that negative affect encourages bottom-up processing.

A second area of research that seems contrary to the AIM is that of mood incongruent memory (Parrott & Sabini, 1990). In the target article, Forgas suggests that mood-congruent effects should be evident in participants' initial responses to their moods. If the moods were to become sufficiently intense or aversive, participants may engage in mood control strategies that may lead to mood-incongruent effects. In contrast, Parrott and Sabini (1990) reported that the initial responses of their participants were mood incongruent. They proposed that participants engaged in mood control strategies to minimize the influence of their moods when they believed their moods were irrelevant to the task. In essence, both views suggest that mood-incongruent effects emerge as a result of mood regulation. However, they suggest that we engage in this mood regulation at different times.

In an investigation of place-dependent memory, Eich (1995a) asked participants to perform an autobiographical event generation task whereby they relayed personal life events in response to common noun probes (e.g., banana). They did so either while they sat in an ordinary office environment and experienced rather neutral moods or while they sat outside in a lovely Japanese garden and experienced moods that were more pleasant. Participants who later indicated awareness of a connection between the environment and their emotional states showed a mood-congruent tendency to tell positive stories, a tendency that was not duplicated among participants who did not report any such awareness. In fact, participants who were unaware of the relation showed a trend toward mood incongruence. The extent that participants believe mood to be relevant to the current task may be another factor in determining whether or not motivated processing (i.e., mood control strategies) is undertaken, thus moderating the production of mood-congruent effects.

The AIM was developed to explain effects of general good versus bad moods rather than more specific emotional reactions. Given that most mood manipulation studies compare states of happiness and sadness, there has been little opportunity to identify any variance among good or bad moods. In the target article, Forgas (this issue) alludes to potential processing differences between so-called bad moods, an approach that may allow even greater specification of mood-congruent cognition. For example, a person could feel either down and sluggish or irritable and tense, and it is possible that these bad moods have different implications for information processing and, thus, tasks or types of materials affected.

According to the model, sad moods lead to more elaborative and extensive processing (Forgas, in press). From a memory perspective (e.g., Craik & Lockhart, 1972), this more thorough processing should have other cognitive consequences—namely, increased overall memorability. It follows that the careful and thorough processing that sad participants undertake is deeper, more distinctive, and thus more memorable, especially if the tasks rely on constructive processing.

This extension appears incompatible with Ellis's work (Ellis & Ashbrook, 1989), which suggests that strong moods deplete attentional resources and detract from memory performance. Thus, sad or depressed participants have been reported to have consistently poor performance, especially when faced with difficult tasks. There have been correspondingly few publications indicating any enhanced information processing by sad participants, but researchers of mood congruence have typically had little interest in overall memory performance. However, we reported just such an effect in one of our previous studies that used autobiographical event generation (Eich, Macaulay, & Ryan, 1994, Experiment 1).

In our study, half the participants were sad and half were happy before they described autobiographical events. Participants who were initially sad were marginally better able to remember those probe words 2 days later than were participants whose moods were initially happy (46% vs. 39%); this was true regardless of their mood during recollection. However, our next two studies did not duplicate the effect (Eich et al., 1994, Experiments 2 and 3).

In a recent and yet unpublished study (Eich & Macaulay, 2000), analyses again revealed a main effect of event-generation mood. More than 300 participants experienced nervous, happy, calm, or sad moods before they performed the autobiographical generation task. Two days later, they returned to the laboratory and attempted to recall the common noun probes while in a matching or mismatching state. Regardless of their mood during the test phase, there was a main effect of event-generation mood on recall, $F(3, 337) = 3.82, p < .05$. Specifically, participants who were nervous showed the worst recall (50%), the happy and calm groups showed moderate levels of recall (54 and 55% respectively), and participants who felt sad had the best recall performance (59%).

Of course, there may be more to moods than changes in cognitive processing. In particular, there may be changes in arousal (Russell, 1980), attentional resources (Ellis & Ashbrook, 1989), and cognitive initiative (Hertel & Hardin, 1990), each of which could attenuate any enhanced processing under sadness. Yet this study suggests that, in comparison to other moods, sadness may lead to more thorough, extensive, and memorable processing. It is interesting that such a speculative extension to the AIM predicts this rather unexpected outcome.

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A good model is hallmarked by its applicability to and implications for research beyond that originally envisioned by it developers. The AIM brings together and integrates previously discrepant ideas, raises questions for future research, and provides an umbrella framework for affect researchers to build on in studies to come.

Note

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The What, When, and How of Affective Influences on Interpersonal Behavior

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The primary strength of the affect infusion model (AIM) is its ability to integrate the different ways in which affect influences cognition and behavior. The model is founded on the assumption that there is no single way in which affect influences cognition and behavior, and this much is surely correct. Further, the model integrates the different ways in which affect influences cognition and behavior by arguing that the openness and constructiveness of the prevailing processing strategy (whether that process involves high effort or low effort) determines whether there is "affect infusion". This infusion may result in mood congruence effects on the contents of cognitions and behaviors or in effects on the way in which information is processed (e.g., top down vs. bottom up).

In his target article Forgas (this issue) demonstrates how predictions regarding interpersonal behavior can be derived from the AIM, and he reviews the results of a considerable number of studies that test these predictions. In commenting on the target article we use our observations about the strength of this evidence as a means of making some more general observations about the AIM.

One difficulty we had with the evidence reviewed in the target article concerns the extent to which the AIM as such is needed to account for several of the findings presented. For example, in the studies using the restaurant scenario (Forgas, 1993, 1995), mood effects were more pronounced when participants were presented with badly matched as opposed to well–matched couples. This is in keeping with a rather large body of literature showing that mood is likely to have a greater impact on ambiguous stimuli than on unambiguous stimuli. Forgas assumes that badly matched couples required more lengthy and extensive cognitive processing, but there is no direct evidence to support this assumption, and in the absence of such evidence it seems more parsimonious to interpret the effect as representing the influence of mood on ambiguous stimuli.

In another study, Forgas and Gunawardene (2000) found that positive mood resulted in a greater incidence of positive social behaviors than did negative mood. Is this evidence of mood congruence, or is it simply evidence that different affective states are accompanied by different behaviors? The difference is a subtle but nevertheless important one. Emotion theorists (see, e.g., Frijda, 1994a; Levenson, 1994; Scherer, 1994) assume that emotions and other affective states have an impact on behavior. From such a perspective it is hardly surprising to find that people who are induced to feel happy by watching a pleasant videotape behave differently than do people who are induced to feel sad by watching an unpleasant videotape. In our view, the influence of the affective state on social behavior is often more direct than that proposed by the AIM, where the affective state primes positive or negative cognitions and thereby promotes positive or negative social behavior.

What is missing from this study (apart from a control condition in which participants were in a neutral state) is evidence that affect infusion into social behavior only occurs when an "open, constructive strategy" is used. In the absence of evidence that the impact of affect is contingent on type of processing strategy, it seems to us that a conventional emotion-theory account offers a more parsimonious account for the findings.

A similar sort of problem afflicts the next set of studies summarized by Forgas. These concern the influence of affect on making a request to another person. The theoretical argument offered is that the influence of affect on requesting should be greater if the request is a complex or difficult one to make. The findings show that, by comparison with sad participants, happy participants preferred more direct, impolite requests, were more likely to formulate such requests, and were more likely to say that they would use such requests in a range of social situations. Is this evidence of the influence of affect on the way in which participants cognitively represented the situation, which in turn had an effect on their social behavior, as Forgas argues, or is it a reflection of the fact that happy people are more confident than sad people and are therefore more willing to use direct (and possibly impolite) forms of request? Again, the latter explanation seems more parsimonious than the one offered by the AIM. What we miss from these studies is evidence that the influence of a given affective state on social behavior varies as a direct function of the processing strategy employed.

The next set of studies reviewed by Forgas concern responses to requests. In effect, these are studies of the impact of affective state on helping behavior. Consistent with much previous work (see Schaller & Cialdini, 1990), participants in a negative mood state were less helpful than were participants in a positive mood state. The most important finding from this study is the one that comes closest to providing the evidence that we regard as crucial to an AIM explanation. The influence of

affect was greater when the request was impolite and unconventional than when it was polite and conventional. If one assumes that responding to an impolite and unconventional request demands more substantive processing, then these findings suggest that the impact of affect is indeed dependent on processing strategy. As evidence that the impolite and unconventional request induced more substantive processing, Forgas cites evidence that such requests were better recalled than were polite, conventional ones. Indeed, this is hardly surprising, in the sense that atypical events are by definition more attention grabbing and should therefore be easier than typical ones to recall (see Fiske & Morling, 1995). Does the fact that something is recalled more easily later mean that it was processed more substantively at the time of occurrence? That one cannot recall an episode does not necessarily mean that one did not process it carefully in the first instance. It is worth remembering that dual-process theories of persuasion (e.g., Chaiken, Liberman, & Eagly, 1989; Petty & Cacioppo, 1986) do not appeal to memory for message content as an index of processing strategy but rather to the ratio of positive to negative cognitive responses that are evoked by messages that vary with respect to argument quality. Ideally, a conceptually similar index of processing strategy would be used in research testing the AIM. Such a measure would reflect the openness and substantiveness of the prevailing processing strategy without depending on recall or recognition of the stimulus materials.

The next set of studies in Forgas's target article are concerned with bargaining and negotiation. Happy participants were found to be more optimistic and cooperative than control or negative-mood participants, and happy participants were also more cooperative and achieved better outcomes than did those in a negative mood state. Again, these effects are interpreted in terms of affect selectively priming mood-congruent thinking, giving rise to greater optimism and cooperation or pessimism and competition. As evidence that these effects are dependent on processing strategy, Forgas cites variations due to individual differences. Machiavellians and need for approval moderated the effect of mood on negotiation strategies and outcomes, which is interpreted as evidence that mood only influences those who use what Forgas refers to as open processing. Another way to state this would be to say that mood has a greater influence on those who are open to the influence of contextual factors, one of which is mood. It is still unclear whether the impact of mood is moderated by differences in processing style, as the AIM would have it.

The next sequence of studies, on persuasive communication, examines the interesting issue of how affect influences the production of persuasive messages. Those in a negative mood state produced higher quality, more persuasive messages than did those in a posi-

tive mood state, with neutral mood state participants falling between these two. Interesting as this finding undoubtedly is, we had some problems reconciling it with another finding from the same study, namely that positive mood state had a beneficial effect on the originality and creativity of the arguments. There seems to us to be a certain tension between the two sets of findings, stemming from the fact that originality and creativity are often regarded as attributes of high-quality arguments.

A further issue is that these findings are interpreted as showing that positive-mood participants engaged in "top-down, internally driven" processing, whereas negative mood participants engaged in "bottom-up, situationally oriented" processing. Here we run into one of the unclarities of the AIM, as we see it: Does affect shape processing strategy and thereby influence cognitions and behaviors, as in these persuasion studies, or is the influence of affect on cognition and behavior contingent on the type of processing strategy being employed? In the first case, processing strategy mediates the impact of affect on cognition and behavior; in the second, it moderates the impact of affect on cognition and behavior.

Of course, processing strategy could in principle play both types of role, and in his target article Forgas claims that both moderation and mediation effects can occur. However, the mediation role is not very clear, given that it is stated that "affect can also mediate the extent of affect infusion once substantive processing is adopted" (Forgas, this issue). Exactly what is being mediated here remains ambiguous. Furthermore, it is not clear to us when moderation and when mediation should occur. It is apparent that substantive processing is a precondition for affect infusion, but once somebody is processing substantively his or her affective state can also influence the degree to which the processing is top down versus bottom up. What is presumably intended is that the moderating role of processing strategy is responsible for the effects of affect on the content of cognition and behavior (i.e., mood congruence), whereas the mediating role of processing strategy reflects the influence of affect on the process of cognition. However, there is a potential overlap between the openness of the prevailing processing style and the degree to which it is top down versus bottom up, with top down being less open than bottom up. This blurs the distinctions between the content and process effects of affect and between the moderating and mediating roles of processing style.

A related but more general observation about the target article concerns the precision and consistency with which constructs and terms are defined and used. For example, regarding the different cognitive processing strategies that are mentioned, terms such as *open* and *constructive* processing strategies are used without being sufficiently clearly defined, with the re-

sult that some apparent inconsistencies creep in. Forgas (this issue) argues that "open, elaborate, and constructive thinking" is assumed to draw on "their own memory-based ideas to produce an appropriate response." To us this suggests internally driven, top-down information processing. Forgas further distinguishes between "direct-access processing," "motivated processing strategies," and two other processing styles, "heuristic" and "substantive." Substantive processing is an instance of open and constructive processing, and yet here it is assumed to require individuals to "select, encode, and interpret *novel* information and relate this information to their preexisting memory-based knowledge" (italics added). This implies an emphasis on situational aspects as opposed to internally driven processes. Likewise, in this discussion both heuristic and substantive processing are assumed to be open types of processing, yet later in the paper heuristic processing is assumed to be more internally driven and top down, as opposed to substantive processing, which is assumed to be more careful and more bottom up. Terms such as *open, constructive,* and *substantive* are by no means synonymous, and yet they seem to be used interchangeably in the context of the AIM. They may well point to the same underlying process, but the way in which they do so should be more tightly specified.

A somewhat similar point concerns the different terms that are used to refer to affective states. Forgas is quite explicit about the fact that most of the research he summarizes in the target article is concerned with the impact of mood states on interpersonal behavior, yet throughout the article we find references to "happy" and "sad" participants, which suggests that emotional states are involved, and at certain points of the paper specific emotions such as sadness, anger, anxiety, and regret are mentioned. Most emotion theorists draw distinctions between moods and emotions (see, e.g., Frijda, 1994b) and between their likely effects on cognition and behavior (see Clore & Gasper, 2000). It would be helpful if the AIM were to make similar distinctions.

In summary, there is much to commend the AIM. It seeks to provide a comprehensive description of the different ways in which affect can influence cognition and behavior and—more important—an account of the conditions under which these influences occur and the processes that are responsible for such effects. The target article summarizes theory and research in which the AIM is used to account for affective influences on interpersonal behavior. The studies reviewed provide compelling evidence of the influence of affect on different types of interpersonal behavior (i.e., the "what"). Less compelling, to our way of thinking, is the evidence concerning the conditions under which

this influence occurs (i.e., the "when") and concerning the processes that are responsible for such influence (i.e., the "how"). As the author himself acknowledges, a great deal more research is needed.

Note

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The Role of Context in Determining Mood Effects

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Some things never change—but that's not necessarily bad. Eighteen years after asking us, "What is social about social cognition?" (Forgas, 1983), Forgas (this issue) has again challenged us to bring more real social behavior into our social cognition research. He has made the challenge this time not with a position piece, but by example. The collection of studies discussed in the target article may be the most socially oriented in the mood area. Many researchers (the present authors included) explore mood effects by exposing individuals to a mood induction such as a movie and then measuring some behavior that is only loosely, if at all, related to social behavior, such as the number of birds participants listed. It is easy to get the impression from our use of such techniques that we are interested only in intra-individual processes of isolated individuals, and there may be some truth to that impression. Against this background, Forgas's socially oriented studies clearly stand out and make a unique contribution. The target article also gives us another view of the affect infusion model (AIM), a model that attempts to organize a variety of findings within a single theoretical framework.

Despite its strengths (or perhaps because of them), the target article left us wanting. As in the old song, we found ourselves wondering, "Is that all there is?" Do mood effects really distill down to no more than situational factors turning affect infusion on and off? We think not, and our comments highlight areas in which we think the AIM could be strengthened.

Mole Hills Without Mountains

While in graduate school, one of the authors took some courses in the philosophy of science. One day, the instructor described science as an endeavor that makes mountains out of mole hills. By this, the instructor was not suggesting that scientists tend to make more of their issues than is really there. He was suggesting instead that science attempts to take a variety of separate phenomena (i.e., mole hills) and synthesize them within a simpler yet broader theoretical framework (i.e., the mountain). The prototypic example is Isaac Newton. As the story goes, Newton observed the ebb and flow of the tides, the motion of the planets, and the falling of apples. Then, he tied these observations together with a single theoretical construct: gravity. Because of his insight, what had been unrelated, disparate phenomena became different manifestations of the same general principle.

The AIM also brings together disparate findings. It is not clear, though, that there is anything in the AIM approaching the simplifying nature of the gravity concept. The empirical generalizations of the model are not simplified by a broader set of assumptions. We get the mole hills without the mountain. If Newton had proceeded in an analogous way, he would have told us that apples fall when their stems break, tides rise early in the morning, and the planets move as a result of momentum. Each effect would have its own set of initiating conditions, and there would be no true unification.

One gets the impression in reading the target article that almost all the theoretical findings that preceded the AIM were accepted as revealing some sort of truth. Given that the truth had been found, the only job remaining was to put these truths together in one spot. The AIM does that, but it does so without questioning, extending, or synthesizing the earlier findings.

When Bower (1981) and Isen (e.g., Isen, Shalker, Clark, & Karp, 1978) first placed mood effects in an information-processing context, that was new. It was a break from the prevailing conditioning views, and it gave us a new way to think about mood effects. When Wyer and Carlston (1979; see also Schwarz & Clore, 1983) suggested that moods may operate more directly as a piece of information, that was also new. It was a break from the priming model, and it gave us a new way to think about mood effects. Even our own work on the effects of context on motivational and evaluative implications (e.g., Martin, 2000, 2001) pointed the way to some possible qualifications of the generally accepted explanations of mood effects.

It is not clear if there are any equivalent theoretical challenges in the AIM. The model contents itself with saying when two of the previously theorized processes (i.e., priming vs. heuristic) are likely to operate. Moreover, the variables proposed as moderators of these processes are themselves not especially surprising. The model suggests, for example, that mood has its influence by means of priming when individuals process information in an effortful, open way. This suggestion is consistent with some of the early mood findings (Bower, 1981) and also with some recent findings involving the role of need for cognition in mood effects (Petty, Schumann, Richman, & Strathman, 1993). The suggestion also underlies Fiedler's (1991) dual-force model. In short, it is a suggestion that has been in the field for a while.

The AIM also assumes that individuals are more likely to use their moods as a bottom-line heuristic

when they do not exert much cognitive effort. Not only does this assumption follow directly from the conceptualization of mood as a heuristic (Schwarz & Clore, 1988), but it is also consistent with earlier findings (Petty et al., 1993). Finally, the AIM assumes that moods have little effect on evaluations when individuals have a prior judgment or when they are motivated to seek certain information. A very similar point has been made in earlier research (e.g., Schwarz, Strack, Kommer, & Wagner, 1987). The bottom line is that the AIM organizes some previously established empirical generalizations but provides little in the way of novel theoretical challenges, and it provides little in the way of simplifying assumptions.

Complexity Without Completeness

For all its complexity, the AIM is surprisingly limited in scope. When all is said and done, it is really just a model of mood-congruent evaluation. Other effects are discussed, but close inspection reveals that these effects are accounted for in terms of extra-theoretical processes. The model suggests, for example, that "the consequences of motivated processing may … produce a reversal of affect infusion effects." This statement would seem to imply that the AIM can account for mood-incongruent evaluations. The statement is clarified, however, when Forgas suggests that "the motivated processing strategy … precludes … affect infusion." In other words, mood-incongruent evaluation is not a mood effect at all. It is an effect that occurs when there is no affect infusion and other processes take over. These processes, however, lie outside the AIM.

More generally, the AIM is compatible with the position of Mayer, Gaschke, Braverman, and Evans (1992). According to these authors, mood-congruent evaluation is a general effect that "automatically occurs for every judgment for which there is a class of legitimate responses that can be distinguished according to their mood congruence. The effect would fail to occur only when a second process interferes" (p. 119). The AIM accepts this view and attempts to catalogue some of the interfering processes (e.g., a prior evaluation, motivation) and the situational factors that moderate them (e.g., familiarity of the target). When the interfering processes are absent, there is affect infusion, and the result is mood congruent evaluation. When the interfering processes are present, there is no affect infusion, and the outcome is not explicable using the assumptions of the AIM.

Plausibility Versus Process

The target article includes a large number of studies derived from the AIM. We are told, for example, that mood has a stronger effect when participants evaluate mismatched as compared to matched couples, discuss complex as compared to everyday social problems, and make difficult as opposed to easy requests. Although these kinds of studies show that the effort–mood relation can be replicated using a variety of stimuli, they do little to elucidate the processes underlying that relation.

According to the AIM, "these effects occur because affect priming influences the kinds of interpretations, constructs, and associations that become available as people evaluate intrinsically complex and indeterminate social behaviors in the course of substantive, inferential processing." The studies, however, provide no evidence for the interpretations, constructs, associations, or processes. As a result, the studies support the AIM only in the most general sense and only to the extent that one assumes the predictions cannot be derived from other theoretical models. This may not be a safe assumption.

Schwarz et al. (1987) showed that individuals were more likely to use their moods as information when making complex, open judgments as compared to simpler, more concrete judgments. In that study, participants evaluated their lives as a whole and their dorm rooms while sitting in either a pleasant waiting room or an unpleasant locker room. Participants in the pleasant room reported feeling better than those in the unpleasant room, and these feelings, in turn, influenced their judgments. Specifically, participants in the pleasant room reported being more satisfied with their lives as a whole than participants in the unpleasant room (i.e., a mood congruent judgment) but reported being less satisfied with their dorm rooms (i.e., a mood incongruent judgment).

According to Schwarz et al., participants consulted their moods as information when making the more open, more complex life satisfaction judgments but not when making the more constrained room judgments. Is there any reason to believe that a similar process was not occurring in the studies reported in the target article? How do we know that the mood effects seen during the open, effortful judgments involved priming as opposed to the use of mood as information? The only real way to tell is by means of converging process data (see Petty et al., 1993), and the studies in the target article were very light on such data.

Contextual Moderation Versus Contextual Implications

A fourth concern we had with the AIM was the limited role assigned to contextual variables. In the AIM, contextual factors turn affect infusion on and off. That's it. The model does not include the possibility that affect may infuse a judgment yet produce different outcomes depending on the context. This is a possibil-

ity we have explored in our mood as input work (e.g., Martin, 2000, 2001).

More specifically, we have assumed that moods are not inherently associated with default effects (e.g., mood-congruent evaluation) that have to be overridden by outside, interfering processes. Rather, moods naturally convey different evaluative and motivational implications in different contexts. This is possible because, according to the mood as input model, individuals use their moods as a feature to determine the extent to which a target has fulfilled its role (e.g., matched its standard).

In rating their life satisfaction, for example, individuals take into consideration their future prospects, their past accomplishments, their standing relative to others, and their current mood (Ross, Eyman, & Kishchuk, 1986). What this means is that, all other things being equal, the more positive a person's current mood, the more favorably the person would evaluate his or her life as a whole. Stated in mood as input terms, individuals in positive moods evaluate their lives favorably because their positive moods are signs that their lives have fulfilled their roles. If a good life is one associated with good feelings, and if I feel good while thinking about my life, then my life must be good.

What makes the mood-as-input model theoretically challenging is that it accounts for mood-incongruent evaluations using the exact same role fulfillment process that accounts for mood-congruent evaluations. There is no recourse to outside interfering processes. Empathy, for example, is a feature people can claim to possess if they experience what other people are feeling. If I observe another person in distress, then I am likely to describe myself as more empathetic if I feel sad rather than happy (Martin, Abend, Sedikides, & Green, 1997). To put this in mood-as-input terms, if empathetic individuals are ones who feel sad in this context, and I feel sad, then I must be empathetic. In this way, individuals use their sad moods as evidence for their possession of a positive trait. Thus, the mood-as-input model gives us one simple mechanism to account for both mood-congruent and mood-incongruent evaluation. It does not need to resort to outside, interfering processes, nor does it propose a collection of separate conditions for each effect.

Conclusion

The AIM may be one of those models whose strength magnifies its weaknesses. If a model attempted to explain only one phenomena in one way, then it would not bother us if the model did not account for other phenomena in other ways. The AIM, however, has been put forth as a very broad, very integrative model. As a result, its theoretical gaps are that much more salient. The AIM would have been more appealing to us if it (a) did not un-

critically accept all prior findings but instead provided us with some new and challenging ways to conceptualize mood effects, (b) provided us with simplification and synthesis rather than a listing of conditions for each effect, (c) provided clear evidence for its proposed underlying processes, and (d) did not relegate all effects other than mood congruent evaluation to processes outside the scope of the AIM.

Note

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Emotion in the Assessment of Personality

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One of the central problems in personality psychology and related disciplines, such as clinical psychology and psychiatry, is how to evaluate a personality. Psychological assessment requires the evaluation of many things about a person, including such characteristics as the individual's motives, emotions, intelligence, and overall mental pathology or health. These personality judgments fall along continua laden with emotion. Indeed, when people are asked to rate almost anything—even near-neutral cognitive concepts such as "house," "map," and "soil"—on almost any kind of scale (e.g., "smart–dumb," "correct–incorrect," "active–passive"), their judgments are most readily summarized according to a pleasant–unpleasant dimension (e.g., Osgood, 1969). This evaluative first dimension runs through most, if not all, cognitive processing (Mayer, 1986).

The evaluative first dimension is plainly present in such considerations as whether a person's motives are socially acceptable or unacceptable, whether the individual's judgments are incapacitating or brilliant, or whether the person is mentally healthy or disordered. Moreover, these evaluations are of real-world importance. People undergo psychological evaluations all the time. Sometimes these are informal and involve feedback from friends, or taking a quiz in a magazine, or the internet for purposes of self-understanding. At other times, the evaluations are more formal and occur for purposes of school placement or job selection. When a person is evaluated according to a theory or by a test of personality, that individual is likely to be affected in two critical ways. First, he or she may undergo a change in self-concept. Second, the person may be subject to potential outcome decisions, such as school or job placements, for which the assessment was undertaken.

Forgas's (this issue) target article on the mood-congruence effect outlines its basic premise very well: Good moods promote positive thinking, and bad moods promote negative thinking. As elaborated in the work of Forgas and others, this positive versus negative thinking extends far beyond the traditional limits of optimism versus pessimism. For example, changes in judgment and memory extend to such matters as identifying the most representative example of a category, such as the category "type of physical contact." In a good mood, "kissing" seems more typical of physicality than does "kicking." Similarly, such changes include alterations in simple associations, such as what a person associates to the concept "mar-

riage." "Anniversary" comes to mind most frequently in a good mood; "divorce" in a less good mood (Mayer, Gaschke, Braverman, & Evans, 1992; Mayer, McCormick, & Strong, 1995). Whether mood (or emotion or affect) is infused into cognition, as Forgas's model has it, or whether mood is always there, part of cognition and looking for ambiguous areas in which to express itself, there is little question that mood influences thought on an ongoing basis.

Forgas's theory is one possible account of how a portion of personality itself may operate. It also includes a discussion of how mood congruence influences social perceptions; such social perceptions are important in personality assessment, which involves an assessor judging a target person. Recently, new models of personality and personality assessment have been emerging. It is useful to examine what mood-congruent cognition tells us about the practice of personality assessment. Here, we focus on what mood-congruent cognition has to say about the professional evaluation of people. Surely, there is great ambiguity in evaluating personality. For that reason we may expect some emotion to enter into such evaluation.

Examples of Evaluative First-Factor Problems in Personality Assessment

The problem for personality and clinical psychology is that personality characteristics are often ambiguous and sometimes elicit subjective, fuzzy, judgments. It is under such circumstances that, according to Forgas's affect infusion model (and independent empirical observations), affect enters in. Certainly, there are many examples of how judgments about personality vary along that first pleasant–unpleasant dimension of evaluation. Levinger (1961) examined the personality traits of mothers, fathers, and 11-year-old children across 31 families. The parents rated their own traits and those of their children and were then rated on which traits they possessed by clinicians and teachers familiar with them. Parents' ratings of themselves and their children were consistently more favorable than those of the professional observers (Levinger, 1961). In another study, Davenport (1952) drew six TATs from four clinical patients and two nonclinical staff members in a hospital. She then drew 207 mostly negative interpretive statements from hospital records on the four patients and wrote 43 more positive interpretive statements. Six new clinicians ap-

plied these to the patients and staff members. The judges used statistically significantly fewer new (i.e., more positive) interpretive statements, even in relation to the two healthy staff members. Davenport concluded that the clinicians avoided descriptions of positive assets when evaluating personality.

Little and Shneidman (1959) found that the blind interpretation of test protocols (where information is more ambiguous than when knowing some case history) led expert raters to evaluate target people as far more pathological than did the clinicians who had access to the case material. It is unclear what led to the negative shift: the expertise of the test interpreters or not knowing the person. Tallent (1958) described a sort of "prosecuting-attorney" psychological assessment, "saturated with negative dynamics." Alluding to the proverbial monkeys who "Hear no evil, see no evil, and speak no evil," he ridiculed those who made such judgments as "psychological simians who hear no good, see no good and report no good!" (p. 244).

The negative bias in assessment (if there is one) seems also to extend to the field more generally. Myers (2000) reported that his computer search of Psychological Abstracts since 1887 turned up a 14-to-1 ratio of studies on negative emotions (e.g., anger, anxiety, depression) to positive emotions (e.g., joy, happiness, life satisfaction).

Of course, discrepancies in the positive or negative quality of evaluations are far from limited to psychology. Several biographies of Diana, Princess of Wales have disagreed in their evaluations of her character. For example, her charitable work was often remarked upon favorably for its focus on helping the poor, ill, and sick—in contrast to the more traditional good works of the House of Windsor such as those on behalf of the Royal Ballet. Although some biographers saw "something noble about her in the truest sense" (Edwards, 2000, p. 214), others emphasized a defensive and even pathological quality to her concerns, stating that such caring for others "grew out of her tenuous sense of herself" and was a consequence of the "sort of compassion she desperately wanted for herself" (Bedell-Smith, 2000, p. 237).

Can Discrepancies in Evaluation Be Attributed to the Moods of Psychologists?

Might some of the negativity in evaluation be due to the evaluator's moods? It is provocative to note that among the medical disciplines, psychiatrists are sometimes thought of as depressed. For example, they apparently committed suicide at a rate higher than that of other medical professions (Freeman, 1967; Ross 1971). Still, we could find few studies indicating any problems with psychologists' mood levels. What stud-

ies there were suggested a more complex picture (Cattell, 1973). Psychologists (undifferentiated as to specialty) score as interpersonally Cold (relative to Warm) on the 16PF, and above average in Ego Strength. They similarly score low on Superego Strength and show low Guilt Proneness. This is echoed in a study of graduate students in psychology at the University of California at Berkeley (Gough, 1992). These students scored high on the MMPI scale of Psychopathy (also indicating lower guilt). More positively, they showed elevations on CPI scales for Capacity for Status, Achievement via Independence, Psychological Mindedness, and Flexibility. About the only mood-related difference from the population norm seems to be that psychologists score far below average on the 16PF scale of Surgency, which suggests they possess low levels of positive affect, low enthusiasm, and high seriousness. Such findings suggest that the negative assessment of client's personality is not necessarily a product of psychologist's mood alone but may be institutionalized in the field. This may be due to the use of a medical model or due to social influences, or even to a legacy of pessimism in the field from its founders, especially Freud (see Gay, 1998; Hall & Lindzey, 1978; Monte, 1995; see also Mayer & Carlsmith, 1997, for Freud's continuing influence).

Calibrating Personality Evaluations and Psychological Evaluation More Generally

Whatever the cause, the ambiguities of personality assessment seem to invite discussion of where such evaluations should lie along the evaluative first dimension of cognition. Exactly how these evaluations ought to be calibrated has been a matter of some discussion. Ryff (1995) noted that "… studies of psychological problems dwarf the literature on positive psychological functioning" (p. 99). Seligman (1999), in his presidential address to the American Psychological Association, called for a new "'positive psychology,' that is, a reoriented science that emphasizes the understanding and building of the most positive qualities of an individual …" (p. 559). If psychologists are indeed calibrated negatively, we are sympathetic to this goal.

In terms of cognition and affect research, there is some genuine debate as to whether personality evaluation comes out in the right place on this first evaluative dimension of cognition. Some argue that personality evaluation is too negative. At the same time, there is modest evidence at best to suggest that over-negativity is due to the negative affect of the profession. Instead, it may be a professionally developed role, perhaps a legacy from the medical profession, or due to other social influences.

One important attribute of any personality evaluation is its position on that pleasant–unpleasant dimension. The pleasant–unpleasant evaluative dimension is plainly of importance to cognition, and moods definitely influence it. At the same time, there is far more to evaluations of personality than how positive or negative it is. Only three of the Big Five personality dimensions are closely related to affect (with Openness and Conscientiousness fairly independent), and the Big Five is (in our view) a very small part of the overall personality. Perhaps there is another low-level system like emotion that can be used to explain part of personality. Motivation, perhaps.

Summary and Conclusions

The implications of Forgas's target article to psychology generally is that we must be very specific about what we are describing about an individual's personality to avoid bias. That is, the more data the better, because the less ambiguity, the less pure mood—and other motives—will enter into assessment. Of course, getting to less ambiguity may call for more bad moods, because as Forgas points out, that is when people search more carefully for information. We need to learn more about the substantive parts of personality to disambiguate our evaluations of others. This disambiguation needs to proceed on two fronts. First, it goes almost without saying that we need more information about how the human personality operates. Clear systems integrations of personality are required to create and foster a common language across the discipline of personality and then to employ that language to understand how the person functions (e.g., Mayer, 1998).

In addition, we need to be aware of just what sort of evaluation we are carrying out. Some of our evaluation of personality is with regard to making prediction and control statements. Statements of the sort, "IQ predicts high school grades between $r = .45$ and $r = .50$," or "multiple raters can evaluate the personality trait of (self-reported) extroversion with an $r = .30$" are of that sort. However, this level of analysis—prediction and control—is embedded in a larger context: Personality is typically compared to various social standards. In this sense, personality is the grown-up, official version of our parents comparing us to others (e.g., "May keeps her room clean."). Statements such as "Michael suffers from a personality disorder" reflect judgments high in evaluation. We need to be careful that our criteria for "personality disorder" and "self-actualization" are adequate. The unreliability of the personality disorder section of DSM-IV raises questions of whether we are being careful enough. In this regard, a better understanding of our criteria for judging health and disorder is needed (McHugh & Slavney, 1999). Whatever the cause of positivity (or negativity) in judgments of others, it is possible that a blanket decision to be more positive is not the last word in improving assessment. Rather, recent work in emotional intelligence suggests that a realistic understanding of emotional difficulties may be more important to accuracy in prediction than whether one is positive or negative (Epstein, 1998; Mayer, Salovey, & Caruso, 2000).

Note

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Explaining Emotion Congruence and Its Absence in Terms of Perceptual Simulation

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One of the key assumptions of the affect infusion model (AIM) is that processing strategy moderates the occurrence of affect infusion. In particular, the AIM predicts the absence of affect infusion, or specifically, of emotion congruence in the cases of direct access and motivated processing and the presence of affect infusion in the cases of substantive and (under certain conditions) heuristic processing. In the target article, Forgas (this issue) specifies a range of variables related to the task (e.g., novelty, complexity, typicality), the person (e.g., motivation, cognitive capacity, personality traits) and the situation (e.g., social norms, public scrutiny) that influence choice of processing strategy and thus the kind and the extent of affect infusion into judgment and behavior. Specifically, he claims that the degree of emotion congruence depends on the extent to which substantive processing is required. Substantive processing is presumably enhanced when a task is unusual, demanding, complex, or personally relevant, when there are no simple, direct-access responses available, and when processing time and resources allow.[1] This prediction has been tested by Forgas in numerous studies in which he created experimental situations that apparently involved more or less substantive processing resulting in more or less emotion-congruent judgment and behavior.

In this commentary we describe Barsalou's (1999b) recent perceptual symbols view of concepts and his perceptual simulation account of conceptual processing. We suggest that emotion-congruent processing can be conceptualized within this approach. The resulting predictions are consistent with those of Forgas; however, unlike the multiprocess AIM model, the perceptual-symbols approach assumes that the same concept representations and same processes are involved regardless of whether emotion congruence is observed or not; emotion congruence is determined by extent of simulation rather than type of processing strategy adopted. The perceptual symbols account is thus a potentially more parsimonious way to derive predictions about affect–cognition interactions. In our commentary we do not discuss predictions of the perceptual symbols approach concerning the choice of processing strategy (e.g., systematic vs. heuristic) but focus primarily on the influences of emotion on the content of thought.

Perceptual-Symbols and Perceptual Simulation

Barsalou's (1999a, 1999b, in press) perceptual-symbols approach to concepts departs in two important senses from recently fashionable models of concepts. Most such models assume, first, that concept representation is *amodal*, such that it does not preserve anything perceptual about a concept or interaction with its instances. Second, in most extant models, concept representation is arbitrary such that there is no relation

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[1] We focus here only on the distinction between two processing strategies: substantive and less substantive processing. Indeed, although a discussion concerning the kinds of processing strategies people use in social judgment is beyond the scope of this commentary, the distinction proposed by Forgas among four strategies is rather atypical, and its implications concerning the impact of emotions on social judgments still require further empirical support. Most recent social cognitive theories opposed two strategies (Chaiken, Liberman, & Eagly, 1989; Petty & Cacioppo, 1986; see Chaiken & Trope, 1999) or evaluated a continuum of processing strategy (Fiske & Neuberg, 1990; Kruglanski & Thompson, 1999). Consistent with this view, Forgas's experiments typically contrast conditions that elicit more or less substantive processing and demonstrate that the former lead to more marked emotion congruency effects than the latter.

between the sensory information presented by an instance of a concept, or experience with it, and the symbols that are stored in memory. If representation is amodal and arbitrary, then similarity between representational symbols bears no relation to similarity between perceptual states. For example, in an amodal account, two concepts may be represented by a series of *X*s and *O*s (e.g., Medin & Schaffer, 1978). Similarity between the concepts is then expressed as an overlap in the pattern, but this pattern bears no relationship to the perceived similarity between the concepts. So, an arbitrary code may stand for the fact that cats and dogs are similar in that they both have four paws configured in the same way, but the arbitrary code preserves nothing perceptual (e.g., visual or haptic) about paws themselves.

In contrast, in Barsalou's approach, subsets of represented perceptual states are extracted to function symbolically and it is these that, when combined, support higher cognitive functions. The symbols that ground concepts have the same structure as perceptual states (they are *modal*) and their structure is informative about what they denote; similarity between them correspond to similarity between perceptual states (they are *analogical*). This means that concepts are not merely receptacles for incoming information, or lists of features used in the performance of conceptual tasks; in this view, concepts function as simulators that rely on the perceptual symbols. Thus, when a conceptual task must be performed, the concept is simulated, and information and details generated in the simulation are used to support judgment, inference, and so forth.

Evidence for the perceptual simulation of concepts is seen in the performance of conceptual tasks such as *property verification* (Solomon & Barsalou, 2000) – that is, the judgment that a member of a category possesses a given characteristic – and *property generation* (Wu & Barsalou, 2000) – that is, the production of characteristics of typical members of categories. Specifically, two conditions hold that suggest that individuals perceptually simulate concepts when engaged in these tasks. One of these is *perceptual effort*. Properties that are readily observable are more likely than those that are hidden or occluded to be produced in property generation tasks. An amodal account does not predict the observation of perceptual effort because amodal concept representations are not based on perceptual-symbols, but on abstract descriptions. In addition, a condition of instructional equivalence also appears to hold. In a test of instructional equivalence, some experimental participants are explicitly instructed to create a perceptual image of the concept, and others are given no such instructions. The similar behavior of the two groups of participants compared to other control conditions suggests that "no instruction" participants, just like "imagery" participants, perceptually simulate the concept. Not surprisingly, imagery

participants did, however, produce richer and more detailed and complex simulations than no instruction participants who produced more schematic simulations (see Barsalou, Solomon, & Wu, 1999). The important implications for the immediate purposes are that (a) concepts are simulated more or less extensively in performing conceptual tasks, (b) greater simulation will reveal more perceptual aspects of the concept, and (c) which aspects of a concept are simulated depends upon the focus of selective attention (Barsalou, 1999b). Thus, viewed from this perspective, concepts can be processed superficially, such that only a few aspects of the concepts are actually simulated and re-experienced. And concepts can also be simulated in such a way so as to implicate most of their deeper structure.

Emotion Congruence From a Perceptual Symbols Account

In associative network models of emotion, such as that proposed by Bower (1981), individual emotions are represented as amodal units of information ("nodes") that are linked by semantic pointers to other units that represent causally-related stimuli, such as past events that have evoked the emotion, verbal labels for the emotion, descriptions of the emotion, and the behaviors, expressive activity, and physiological events that constitute the emotion. Bower (1981) proposed that some representations, such as representations of facial expressions of emotion, are innate, whereas others are acquired through learning. However, since representation in this view is amodal and arbitrary, there is no provision that perceptual aspects of the concept are preserved in the network (see Niedenthal, Setterlund, & Jones, 1994, for an alternative).

The experience of an emotion, in the associative network approach, activates its unit in memory. Activation then spreads from the central unit to related information, thereby potentiating the use of that information in on-going processing. Therefore, the model predicts emotion-congruence effects in automatic processes. That is, due to passive spread of activation, material should be better learned, recalled, and perceived when it is congruent in emotional connotation or association with a person's current specific emotional state. If processes other than automatic ones are somehow assessed, of course, the associative network account is no longer the appropriate model from which to make the emotion congruence prediction (Eich, Kihlstrom, Bower, Forgas, & Niedenthal, 2000).

Excellent examples of emotion congruence in judgment and behavior, and also examples of the absence of such an effect, abound in Forgas's article. He argues that the AIM accounts for the appearance and disappearance of the effect. And he suggests that the use of

different processing strategies account for such effects under different conditions, as outlined above. But imagine that we adopt Barsalou's perceptual symbols approach to model emotion concepts, and extend it to both conceptualize emotion congruence and to predict its occurrence. It seems to us that, without being inconsistent with Forgas's predictions, in fact to the contrary, the perceptual symbols approach provides a different, more parsimonious account of the coming and going of emotion congruence such that the same rather than different processes and the same rather than different concepts are implicated.

In the perceptual symbols approach, the perceptual–experiential aspects of emotion are preserved in the emotion concept stored in long-term memory, reflecting the perceptual states (not just visual, of course, but also olfactory, haptic, and so forth) invoked by internal, physiological events and also external events such as other actors and contextual information (see also Niedenthal, Halberstadt, & Innes-Ker, 1999). Information contained in an emotion concept is very extensive, and only a part of it is used during any given conceptual task. What determines the choice of perceptual symbols used in a simulation of a concept, according to Barsalou (1999a, 1999b), is selective attention to certain aspects of the concept. The question then becomes, what determines the focus of selective attention? The answer in most psychological experiments is the nature of the conceptual task at hand. That is, in understanding the focus of selective attention of the participants in studies conducted and reviewed by Forgas, one can in general appeal to specific targets of judgment or behavior presented in the experiments themselves.

Specifically, we conceptualize the cognitive processes of a participant in one of Forgas's studies in this way: First, the induction of an emotion activates or brings to mind the relevant emotion concept (Niedenthal et al., 1999). This involves the simulation of aspects of this particular emotional experience. The simulation of a happy concept by an individual in a happy state, for instance, could involve the simulation of a happy face, a rewarding social interaction, or a request or favor that yields a pleasing result. Put differently, the induction of a happy emotion involves the construction of a frame for simulation that makes use of perceptual aspects of the "happy" concept (see Barsalou, 1999b, for details). Whether selective attention is focused on perceptual aspects of faces, perceptual aspects of social interaction, or those of asking favors depends on the demands of the task. If we ask happy participants to make judgments about pictures of couples, they focus attention on aspects of the emotion concept that is associated with romantic relationships to generate an inference.

The detection of emotion congruence is then determined by the extent to which the target of judgment must be simulated to generate a judgment. Extensive simulation brings more perceptual aspects into the simulation and therefore produces greater emotion congruence. Minimal simulation yields a judgment with few perceptual aspects of the concept. If one has to make judgments about a series of target couples, and one has seen many couples like this in the past (because they are typical or well matched, e.g., Forgas, 1993, 1995; Forgas & Moylan, 1991), very little simulation is required for the production of a judgment. Few perceptual aspects of the activated emotion concept are focused on, and consequently its impact on the judgment is modest. If, however, a judgment must be made about couples about which very little is known (because they are atypical or poorly matched), more extensive simulation is required and more perceptual aspects of the activated emotion concept are implicated. Many perceptual aspects of the activated emotion concept are focused on, and consequently its impact on the judgment is important. Emotion congruence will thus not be detected in judgments that are based on the (brief) simulation of typical couples, but emotion congruence will be detected quite clearly in judgments based on the (more extensive) simulation of atypical couples.

The same analysis can be applied to most other experimental manipulations that, in Forgas's terms, influence the degree of substantive or elaborative processing likely to be engaged in by the experimental participants. For example, he found affect infusion into behavior mediated by more elaborate processing in several studies on request production (Forgas, 1999) and reactions to requests (Forgas, 1998). Degree of substantive processing was manipulated by the direct or indirect character of the request: The more direct and thus impolite the request, the more substantive the processing of the message, producing greater emotion congruence—that is, more critical reactions and less compliance under negative mood than under positive mood (Forgas, 1998). In studies on request formulations, the situational difficulty was expected to encourage elaborative processing and thus to increase affect infusion. A difficult (i.e., embarrassing) request context that required more elaborate processing produced more direct, less polite request choices (Forgas, 1999) and request formulations (Forgas, 1999) in happy participants than sad participants, who preferred indirect, polite requests.

In all the studies cited, substantive processing was operationalized in terms of the degree with which the stimuli were unusual, atypical, or complex. According to Barsalou's perceptual view, these situations, because of their unusual character, require more extensive simulation for their resolution compared to simple and familiar situations that require less simulation. The more extensive the simulation of the situation, the more perceptual features of the activated and simu-

lated emotional concept are integrated either directly in the new simulation or as background information (to contextualize, or to situate, the simulation) and the greater the affect infusion (see also Niedenthal, Rohmann, & Dalle, in press).

In sum, in our view, the extent of the simulation required by the judgment task determines the number of perceptual aspects of the activated emotional state that are infused into judgment and behavior, not necessarily the type of processing involved. Future research will have to test these predictions empirically.

Notes

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The Way You Make Me Feel:
Integral Affective Influences on Interpersonal Behavior

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Forgas (this issue) reviews an impressive range of empirical evidence showing that incidental mood states can impinge upon interpersonal behavior in a variety of noteworthy ways, and his affect infusion model (AIM) provides a systematic account of the contingencies in this body of evidence. As such, his review takes us a long way toward the laudable goal he sets forth of providing an understanding of how affect influences strategic interpersonal behavior. We contend that a truly comprehensive understanding of this important topic, however, requires that theorists and researchers look beyond the effects of mood states and begin to examine the affective dynamics that are integral to particular interpersonal settings.

In attempting to characterize the affective context of intergroup relations, Bodenhausen, Mussweiler, Gabriel, and Moreno (2001) proposed a tripartite typology of intergroup affect that applies equally well to the interpersonal sphere of social functioning. According to this typology, the affective states that have been investigated by Forgas in his extensive research program (i.e., moods and emotions that have arisen for reasons unrelated to the current behavioral situation) fall into the category of incidental affect. However, this kind of affect is by no means the only, or the most important, kind of interpersonal affect. It can be contrasted with integral affect, which comes in two forms. *Chronic integral affect* refers to enduring affective reactions to a social target that are activated in a particular interaction. *Episodic integral affect* refers to affective reactions that are situationally created in a particular dyadic interaction. Our claim is that an overly exclusive focus on incidental affect—and a corresponding neglect of the integral varieties of interpersonal affect—is likely to leave us with only a partial understanding of how affect impinges upon strategic interpersonal behavior.

In what circumstances may chronic integral affect arise? Most obviously, it could arise in the context of interpersonal interactions involving individuals who are previously acquainted with one another. In many important contexts (such as spousal relationships or work-related relations), people engage in strategic interactions with other persons toward whom they have potentially quite strong, enduring affective reactions. However, an enduring relationship is certainly not a necessary condition for the elicitation of chronic integral affect. Such reactions could arise, for example, when a novel interaction partner can be categorized into a social group about which the individual has chronic feelings (e.g., feeling anxious when meeting one's new dentist, feeling happy to meet a fellow countryman when traveling abroad). How do these kinds of feeling states direct or constrain the course of strategic behavior that is pursued in the context of an interaction with persons who arouse these feelings? Can the principles embodied within the AIM be adapted to make predictions about these integral affective influences, or will additional theoretical assumptions be necessary?

For the most part, research on integral interpersonal affect has tended to treat this phenomenon as the outcome to be studied and explained, rather than focusing on its potential role in influencing social cognition and thereby mediating subsequent interpersonal conduct. The literature on the affective state of love typifies this state of affairs. Although much research has examined the quality of feeling love for another individual, focusing on its determinants and the diversity of its character (see, e.g., Hendrick & Hendrick, 1992), the effects of feelings of love on processes of social cognition have not yet been extensively studied. Some researchers have attempted to map out the cognitive and behavioral consequences of hostile marital affect (e.g., Gottman, 1993), jealousy (e.g., White, 1981), and "limerence," or obsessive love (Tennov, 1979); however, these efforts have often not involved the careful tracing of the impact of these affective states on interactants' information-processing strategies, attentional capacity, epistemic motivation, memorial biases, or other key potential social–cognitive mediators of the observed links between feeling and behaving. In principle, however, a theoretical analysis focusing on these kinds of potential mediating processes could open the door to greater theoretical integration, and the growing interest in processes of relationship cognition signals that this kind of theoretical development is on the horizon. The more general point we are making is that, in focusing on interactions involving strangers or superficially known others, we fail to learn about some of the more affectively potent contexts of strategic social behavior, namely our interactions with family members, friends, and coworkers. It is arguably much more important to successfully negotiate and engage in social influence within these kinds of relationships. A model of affective influences on interper-

sonal behavior that limits itself solely to the impact of incidental moods is incomplete at best.

Of course, whenever we engage in social interaction, even with a stranger who possesses no affectively significant social identities, there is the potential that the course of the interaction itself will evoke affective responses. With a flirtatious smile or a condescending smirk, it may be quite possible to elicit nontrivial amounts of episodic integral affect. For example, eliciting positive affect via ingratiation is a well-documented strategy for effective compliance gaining (Cialdini, 2001). Agents of influence strategically use compliments to evoke positive episodic affect in the hope that their subsequent persuasive appeals will fall on more receptive ears. It is interesting to contemplate how things may go if the tables were turned. If potential targets of social influence are aware that a salesperson, politician, or lawyer is going to try to influence them in some manner, would it be possible to influence the strategies that the would-be influencer is likely to employ by first creating positive episodic affect in the interaction? Research confirms that bilateral bargaining outcomes are favorably influenced by positive incidental affect (Carnevale & Isen, 1986), but it remains to be seen how integral affect may influence strategic interpersonal behavior.

One way in which integral and incidental affect may differ is that incidental affect has no rational bearing on judgments of unrelated stimuli (i.e., in this context, one's interaction partner), such that when its potential influence is detected, perceivers may feel inclined to engage in corrective action to eliminate the contaminating influence of their unrelated moods (see, e.g., Schwarz & Clore, 1983). In contrast, when affective reactions legitimately arise from one's interaction partner there would seem to be little reason, in general, to try to eliminate or correct for those influences. Indeed, Damasio (1994) argued that these integral affective reactions serve as our constant touchstones in navigating a course through the social landscape and that when they become unavailable (e.g., because of localized damage to the emotion centers of the brain), marked social dysfunction ensues. Yet there are some cases where people indeed attempt to avoid being influenced by integral affect. Much depends upon the person's awareness of his or her affective states and beliefs about the appropriateness or permissibility of these feelings (Moreno & Bodenhausen, 2001). Incidental states, when recognized as such, are by definition seen as inappropriate bases for reactions, as reflected in commonly held rules of thumb that dictate, for example, that one should not make important decisions when in a bad mood. However, integral states may or may not be seen as appropriate, depending on the prevailing social norms as well as the relevant personal standards of the individual.

One case where integral affect may be especially likely to be perceived as inappropriate arises when the affect stems from the interactants' social identities (for a recent review, see Bodenhausen & Moreno, 2000). When interacting with a member of a stigmatized social group (e.g., the physically handicapped, or an ethnic minority group), people may be especially motivated not to let negative affect infuse their dealings with the person in question. Devine, Evett, and Vasquez-Suson (1996) analyzed such interaction situations in some detail, concluding that effectively inhibiting unwanted emotional influences in these contexts requires not only the desire but also the ability or skill to do so. The process of affect inhibition appears to be, at least initially, an effortful and resource-consuming one. Moreno and Bodenhausen (2001) further showed that, in some cases, perceivers are also readily able to construct self-justifications that they use to rationalize the expression of otherwise taboo emotional reactions.

All these considerations underscore the more general point that understanding affective influences on interpersonal behavior entails knowing when people are motivated (and able) to resist such influences. As currently developed, the AIM focuses on either situations in which people are generally unaware of the influence of affect on their reactions (as when it infuses their open, constructive thinking) or situations in which they knowingly use (or misuse, via misattribution processes) their subjective feelings to inform their judgments. Although AIM recognizes that people are sometimes motivated to modify their own moods, it is largely mute with respect to the fact that affective self-regulation can go beyond simple mood maintenance and mood repair motivations. Specifically, people in the throes of affective reactions may often seek to suppress possible emotional influences on their thinking and behavior (see Berkowitz, Jaffee, Jo, & Troccoli, 2000). A comprehensive theoretical account of the role of affect in interpersonal behavior should incorporate an understanding of the circumstances and mechanisms whereby affective self-regulation of this latter sort enters the picture. The most central variables in this regard appear to be: (a) people's degree of awareness of their affective states; (b) their lay theories about the source(s) of their affect and the nature of its influence on their thinking and behavior; (c) their beliefs about the appropriateness of such influences; and (d) their motivation and ability to engage in corrective action when inappropriate affective reactions are experienced.

Although the AIM may provide a fuller account than its predecessors of the effects of incidental affect on interpersonal behavior, we have argued that there are at least two useful ways in which its explanatory reach may be broadened. First, a consideration of the roles of chronic and episodic integral affect is required. It remains very much an open question

whether these types of affect operate on the same general principles as those that have been documented in studies investigating incidental affect. Of course, studies involving integral affect present more of a logistical challenge than ones focusing on incidental affect, which lends itself nicely to experimental manipulation. It is difficult to think of appropriate ways to manipulate chronic integral affect experimentally; consequently, reliance on less powerful correlational methodologies may be necessitated. Nevertheless, episodic integral affect is definitely amenable to experimental investigation, and we believe that it will be important to determine the degree to which its effects are similar to the effects of incidental affect that Forgas has so impressively documented. Second, it is important to recognize the possibility that perceivers may sometimes engage in active self-regulation directed at preventing their affective states from having unwanted effects on their judgments and behavioral choices. Recent developments in our understanding of affective self-regulation (e.g., Salovey, Hsee, & Mayer, 1993) could provide a great deal of conceptual leverage in the process of incorporating the concerns we have raised into existing models, such the AIM, or in developing free-standing theories of the affective dynamics inherent in social interaction. Whether or not these particular concerns are ultimately integrated into the AIM, we suspect that Forgas's systematic investigations will succeed in stimulating a great deal of exciting new research in which thinking and behaving are reunited with feeling.

Note

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Where Are the Unique Predictions?

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Joseph Forgas's target article has two main thrusts. First, it reviews a series of laboratory and field experiments that extend the investigation of mood effects from the domain of cognitive processes to the domain of interpersonal behavior. This extension provides important contributions to our understanding of social behavior and documents that moods matter in the real world. Second, Forgas suggests that the affect infusion model (AIM) has unique explanatory power in accounting for these findings. Unfortunately, the reviewed research fails to support this claim.

As Forgas (this issue) notes, "the usefulness of theories depends on how well they can explain the available evidence and how effective they are in suggesting new and interesting hypotheses." Crucial to an evaluation of the AIM is the second criterion, namely the generation of "new and interesting hypotheses." Given that the AIM adopts most of the previously documented processes without theoretical modification (aside from unwarranted simplifications), it is obvious that it can account for the "available evidence" generated by the original theories as well as any new findings that can be derived from them. In fact, the AIM should fare better than any one of the original theories—if one particular theory-turned-AIM component doesn't fit, chances are that another one will. Hence, the key criteria for an evaluation of the AIM are whether it correctly specifies the conditions under which a given, previously documented, process comes to bear and whether it generates new hypotheses that are not direct derivatives of the component theories. Unfortunately, the reviewed research falls short on these counts. First, the research strategy focuses on predictions that can be derived from several of the original component theories, and predictions that are unique to the AIM are missing. Second, the characterization of the component processes is often oversimplified, limiting the explanatory power of the adopted theory. Third, as a result of these oversimplifications, the studies fail to include conditions that are crucial for diagnosing the underlying process, thus thwarting the goal of the AIM to identify the conditions under which different processes come to bear. Two examples may illustrate these concerns.

What Drives the Effects of Task Complexity?

A core argument of the target article holds that "the more complex and ambiguous a social situation, the more likely it is that people will need to engage in open, elaborate, and constructive thinking, drawing on their own memory-based ideas to produce an appropriate response" (Forgas, this issue). In a nutshell, the chain of inference is that people are subject to mood-congruent recall biases in drawing on "memory-based ideas" and that as these biases are more pronounced, the less the recall task provides helpful cues (as illustrated by the observation that mood effects on free recall are more pronounced than mood effects on recognition; Bower, 1981). Moreover, any recalled memory-based idea is more likely to affect the interpretation of ambiguous rather than unambiguous social situations, consistent with the findings of the extant priming literature (Higgins, 1996). Hence we may expect that mood-congruent recall processes exert a stronger influence in "complex and ambiguous" situations. This is correct and a derivative of the logic of Bower's (1981) network model. However, the reverse inference does not follow: The observation that a complex situation shows stronger mood effects than a less complex one does not necessarily entail that the underlying process is one of mood-congruent recall. Instead, the same pattern is predicted by the mood-as-information approach (Schwarz & Clore, 1983, 1996). According to this theory, people may simplify the judgment task by asking themselves, "How do I feel about this?" using their apparent affective response to the object of judgment as information. This strategy is likely under the conditions known to foster heuristic processing, which include limited information, relevance, motivation, time, or cognitive resources, as well as a level of task complexity that renders substantive processing overly burdensome (for a discussion with regard to moods see Schwarz, 1990; for a general discussion of complexity and heuristic processing see Payne, Bettman, & Johnson, 1993). As a result, observed effects of task complexity per se cannot serve as a criterion for the presence of substantive or the absence of heuristic processing. Instead, task complexity can increase mood effects in two different ways, namely by increasing the likelihood that heuristic processing is applied in the first place or by increasing the impact of mood-congruent recall, provided that a substantive processing strategy is chosen.

Any attempt to differentiate between these processes requires manipulations of the informational value of the mood through (mis)attribution manipulations, which provide the acid test for the mood-as-information process. The usually correct assumption that

heuristic processing is fast, whereas substantive processing is slow, does not hold in the case of complex tasks: People may ponder the complex task only to decide to go for a heuristic shortcut once they realize how burdensome the task would otherwise be. Such a situation cannot be inferred from global response time measures, which do not distinguish between the components of the response process. Similar ambiguities apply to memory measures. The observation that recalled stimulus information or self-generated associations are mood congruent does not, by itself, imply that this information mediated the judgment. Instead, the mood-congruency may be a consequence rather than an antecedent of the judgment: A person who arrived at a positive judgment on the basis of a heuristic process may subsequently use this judgment as a starting point for associations and retrieval efforts, resulting in mood congruency in the obtained reports (e.g., Bless, 1996). Hence, the general conclusion that "we can now distinguish empirically between affect infusion produced during slower, substantive processing (due to affect priming) and affect infusion produced during faster, heuristic processing (due to affect-as-information mechanisms)" (Forgas, this issue) is erroneous and based on an inadequate simplification of the process assumptions.

None of these ambiguities calls the observed empirical regularity into question: Mood effects are indeed more pronounced for more complex tasks, as many of the reviewed and other examples indicate (e.g., Borg, 1987; Schwarz, Strack, Kommer, & Wagner, 1987). That this finding is highly robust is in part due to the fact that more than one process contributes to it. Unfortunately, however, we won't learn much about the underlying processes by focusing on predictions that are shared by several theories and hence fail to differentiate between them.

What Drives Affective Influences on Requests?

One of the novel and important contributions to our understanding of interpersonal behavior is the observation that people in a negative mood make more cautious, indirect, and polite requests than people in a happy mood. Despite the applied importance of these findings, however, this line of experiments again highlights the extent to which the reviewed findings are theoretically overdetermined. Far from testing a unique prediction of the AIM, this interesting finding can be derived from all the original theories that entered the AIM—and, again, no attempt is made to distinguish among multiple underlying processes.

First, we make more polite and indirect requests of people who are of higher social standing (Brown & Levinson, 1987). Being in a negative mood has been found to reduce the person's temporary self-esteem (e.g., Levine, Wyer, & Schwarz, 1994) and can hence contribute to the perception of a higher status differential. This, in turn, may result in more polite requests, consistent with politeness theory (Brown & Levinson, 1987). The initial negative effect of mood on self-esteem may either be due to mood-congruent recall or to mood-as-information mechanisms.

Second, we make more polite requests when we doubt that the requestee is likely to be cooperative. Being in a negative mood results in more negative impressions of others, and we may hence perceive the recipient as less likely to cooperate. Again, mood-congruent recall as well as mood-as-information mechanisms may contribute to this perception.

Third, we make more polite requests when we assume that the request may not be successful, for example due to limited legitimacy of the request or other variables. Again, moods are likely to affect our assessment of the likely success, with negative moods resulting in a more pessimistic assessment (for a discussion see Schwarz & Bohner, 1996). Once again, mood-congruent recall as well as mood-as-information mechanisms may contribute to this assessment.

Fourth, being in a bad mood generally signals a problematic situation (Schwarz, 1990), and this global signal itself may be sufficient to elicit a more cautious strategy. It is worth noting in this context that the AIM does not trace mood-elicited differences in the spontaneously adopted processing style to the informative functions of mood (see Bless, this issue, for a discussion). Like mood effects on evaluative judgment (Schwarz & Clore, 1983), mood effects on processing style are eliminated when the informational value of the mood is called into question through (mis)attribution manipulations (Sinclair, Mark, & Clore, 1994). As with other simplifications of the component theories, the limitation of the informational functions of moods to evaluative judgment is unwarranted.

Fifth, the systematic, bottom-up processing style elicited by negative moods (Bless & Schwarz, 1999; Schwarz, 1990) increases attention to the situation at hand and decreases reliance on familiar routines, which may enhance the person's consideration of situational characteristics such as status differentials, cooperativeness, or likelihood of success, further contributing to a more polite request.

Although additional plausible mechanisms could be added, this short list suffices to illustrate the degree to which the key finding is likely to be overdetermined. On the positive side, this overdetermination implies that the politeness finding is likely to be robust, making it an important and reliable contribution to the analysis of interpersonal behavior. On the negative side, it illustrates how little theoretical insight we gain from a multiprocess model when the studies focus on predictions that are common to most of the component theo-

ries, without any attempt to separate the relative contributions of different underlying processes.

Summary

As these two examples illustrate, the target article makes original and important contributions by identifying novel mood effects in the domain of interpersonal behavior, yet it fails to advance our understanding of the underlying processes. This shortcoming derives from a research strategy that focuses on common rather than distinct predictions and neglects the identification of conditions that allow for a diagnosis of the underlying processes. Although the need for an integrative multiprocess model is undisputed, the power of such a model needs to be demonstrated by its ability to generate predictions that go beyond the predictions of the adopted component theories. Unfortunately, this cannot be achieved by convenient simplifications of the component theories, nor by an emphasis on their common predictions. The latter emphasis nicely increases the odds that an experiment will work, but there is little of theoretical interest to be learned from the robust yet overdetermined result.

Notes

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