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Affective influences on the formation, expression and change of attitudes

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This work was supported by a Professorial Fellowship from the Australian Research Council, and the Research Prize by the Alexander von Humboldt Foundation to Joseph P. Forgas. Please address all correspondence in connection with this paper to Joseph P. Forgas, at the School of Psychology, University of New South Wales, Sydney 2052, Australia; email jp.forgas@unsw.edu.au. For further information on this research project, see also website at <http://www.psy.unsw.edu.au/Users/JForgas/jforgas/>

What role do temporary mood states play in the way attitudes are formed, maintained, and changed? The study of attitudes and attitude change has been historically one of the key topics of social psychology. As historians of our discipline noted, it was the study of attitudes, an intrinsically mentalistic concept, that ultimately saved social psychology from succumbing to the more absurd excesses of doctrinaire behaviourism (Allport, 1968). The concept of attitudes is unique in that it captures the complex, multifaceted ways that human beings are capable of symbolically synthesising and representing their social experiences, and then use such mental representations to form predispositions that guide their subsequent social behaviours. It was George Herbert Mead who in his symbolic interactionist theory first highlighted the key role that mental processes play in the way representations of social experiences are formed, and eventually come to regulating social behaviour (Mead, 1934). However, the term 'attitude' was not used by Mead. Rather, it was first introduced into the social science literature in the work of Thomas and Znaniecki (1928), who used the concept of attitudes to describe the changing patterns of cultural adaptation among Polish emigrants to the USA.

Social psychologists conceive of attitudes as individual constructs that consist of distinct cognitive, affective and conative (behavioural) components (Eagly & Chaiken, 1993). Even though the affective dimension has always been a key feature of the attitude concept, relatively little work has been done exploring the dynamic role that fluctuating affective states and moods play in the way attitudes are generated, maintained, cognitively represented, organised and expressed in social situations. This chapter will present a brief review of the origins of recent work on affect and attitudes, focusing especially on contemporary cognitive theories linking affect and attitudes. The main objective of the chapter is review our empirical research demonstrating how mild temporary mood states can have a significant influence on attitudes towards the self and others, as well as intergroup attitudes. Further, research will be reviewed demonstrating that affective states can also influence processes of attitude change, especially the quality and effectiveness of persuasive messages.

Affect and attitudes: A brief overview

Even though affect has always been recognised as a critical part of attitudes, empirical research on its functions was rare until quite recently. How can we explain this surprising neglect? Historians of psychology such as Hilgard (1980) argued that affect has been neglected in psychology because of the discipline's traditional assumption that different components of the human mind, such affect, cognition and conation, can be studied in separation from each other as independent, isolated entities. After decades of the dominance of first the behaviorist, and later the cognitivist paradigm, affect has remained the most 'neglected' member of the trilogy of mind, at least until recently (Hilgard, 1980).

Interestingly, research on attitudes is one of the areas in social psychology where the traditional attempt to separate affect, cognition and conation is most problematic. Although attitude theories clearly recognise that affect is a key component of attitude, there has been disproportionate preoccupation with the study of the cognitive and conative components, to the relative neglect of affective features (Eagly & Chaiken, 1993). Just how important is affect as a component of, and as a determinant of attitudes and attitude change?

In an influential article that augured the re-emergence of affect as a central topic for social psychologists, Zajonc (1980) argued that affective reactions often constitute a sovereign and primary reaction to social situations. In a concluding review two decades later, closing the debate on the primacy of affect, Zajonc (2000) maintained that affect indeed functions as an independent, primary, and often dominant force in determining people's responses and dispositions to social situations, citing a variety of studies supporting such a conclusion. It seems that people can readily acquire an affective, evaluative attitude towards stimuli even though they may have no awareness of having encountered it before (Zajonc, 1980; 2000). Such affective reactions can be extremely enduring, and may influence subsequent behaviors even in the absence of any associated memory or beliefs (Zajonc, 2000). Such evidence suggests that affect may be not just one of the three components of attitudes – and a relatively neglected one at that – but is often the driving force behind responses to social stimuli, and perhaps the primary dimension of all interpersonal behavior (Zajonc, 1980).

Such a view is also supported by evidence indicating that affect also plays a crucial role in how people organise their social experiences, and how they cognitively represent their attitudes about them. The human ability to symbolically represent social events is a key requirement for orderly social behaviour (Mead, 1934), and affective reactions seem to play a key role in how attitudes towards, and implicit cognitive representations about common, recurring social experiences are organised (Forgas, 1979, 1982). It is connotative rather than denotative features, such as feelings of confidence, anxiety, intimacy, pleasure or discomfort that seem to be the key dimensions that define the implicit structure and complexity of people's mental representations of social episodes. It seems that social "stimuli can cohere as a category even when they have nothing in common other than the emotional responses they elicit" (Niedenthal & Halberstadt, 2000, p. 381).

Such findings suggest that affect is indeed a primary dimension of social attitudes, a conclusion that has been anticipated over thirty years ago by Pervin (1976) who argued that "what is striking is the extent to which situations are described in terms of affects (e.g. threatening, warm, interesting, dull, tense, calm, rejecting) and organized in terms of similarity of affects aroused by them" (p.471). Thus, affect – the way we feel about situations, people, and social experiences – plays a predominant role in how attitudes about the social world are structured. In addition to influencing how attitudes are organised, affect also plays a dynamic role how attitudes towards the self, others and social situations are formed. Several studies show that experiencing temporary positive or negative affect feeds into the way attitudes about the social world are formed (Forgas, 2002). There is good evidence for a general affect-congruent pattern, where feeling good tends to make unrelated attitudes more positive, and feeling bad produces more negative, critical attitudes (Clore & Storbeck, 2006; Forgas, 1995, 2002). There are several theories that seek to explain how such affect infusion into attitudes may occur, as we shall see below.

Explanations of affect infusion into attitudes

Despite its professed lack of interest in mentalistic phenomena such as affect, **conditioning and associationist theories** were among the first to offer an explanation of how affect infusion

into attitudes may occur. Watson's 'little Albert' studies were among the first to show that attitudes towards a previously neutral stimulus, such as a cute animal, can be rapidly changed by associating the attitude object with intrinsically fear-arousing stimuli, such as loud noise. According to this view, all our complex affective reactions acquired throughout life – and thus all our attitudes - are constructed as a result of a complex pattern of cumulative and mostly incidental associations. This notion was experimentally confirmed in the domain of political attitudes in an intriguing experiment by Razran (1940), who found that people who were made to feel bad or good (being exposed to highly aversive smells, or receiving a free lunch) subsequently reported significantly more negative or positive attitudes towards persuasive messages incidentally associated with their manipulated feelings.

Decades later, Byrne and Clore (1970) and Clore and Byrne (1974) in conceptually similar experiments showed that incidentally aroused affect can infuse a variety of interpersonal attitudes. For example, persons placed into aversive environments (noisy, unpleasant rooms - the unconditioned stimuli) experienced negative affect (the unconditioned response), and responded with more negative attitudes to people encountered in such situations (the conditioned response). In other words, an incidentally elicited affective reaction can be readily associated with social stimuli encountered in this situation. Thus, simple temporal and spatial contiguity is enough to link an independently elicited affective state and an incidentally encountered stimulus or person. Numerous studies demonstrated just such a conditioning effect (Griffitt, 1970; Gouaux, 1971; Gouaux & Summers, 1973).

Psychoanalytic theory also played an important role in highlighting the importance of affective phenomena, and in particular, pointing to the invasive and hard-to-control nature of affective reactions. Psychoanalytic theories suggested that affect can 'take over' attitudes unless adequate psychological resources are available to control these impulses. Feshbach and Singer (1957) in an interesting early study found that attempts to suppress affect (such as fear induced by electric shocks) increased the 'pressure' for the suppressed affect to be projected to other people, and so infused unrelated attitudes. Fearful subjects were more likely to see "another person as

fearful and anxious" (p.286), especially when they were trying to suppress their fear, suggesting that "suppression of fear facilitates the tendency to project fear onto another social object" (p. 286).

Cognitive theories of affective influences on attitudes

Ultimately, neither the psychoanalytic, nor the associationist explanations offered a fully convincing theory of just how and why temporary feelings may influence attitudes. More recent cognitive, information processing theories proposed that affect has two kinds of effects on attitudes. First, affective states can have an (1) **informational effect**, informing the **content and valence** of attitudes through one of two complementary mechanisms : (1.1) memory-based processes (eg. the affect priming model; see Bower & Forgas, in press), and (1.2) inferential processes (eg. the affect-as-information model; see Clore et al., 1994). Further, affect can also exert a second (2) **processing effect**, influencing **how** information is processed.

1.1 Memory based mechanisms.

Affect may infuse attitudes through selectively facilitating the retrieval and use of affect congruent information from memory to be used when constructively interpreting social information. The associative network model proposed by Bower (1981) suggests that affect, cognition and attitudes are integrally linked within an associative network of mental representations. An affective state should thus selectively and automatically prime associated ideas to be used in constructive cognitive tasks that require the active elaboration and transformation of information. There is strong evidence for mood-congruent effects on attitudes (Bower, 1981; Clark & Isen, 1982; Fiedler & Stroehm, 1986; Forgas & Bower, 1987); however, affect priming is also subject to important boundary conditions (Eich & Macauley, 2000; Forgas, 1995a). It appears that affect congruence in attitudes is most likely to occur in when the affective state is strong, salient and self-relevant, and the task calls for the active generation of information.

1.2 Inferential mechanisms.

Alternatively, rather than computing a judgment or an attitude on the basis of recalled features of a target, "individuals may... ask themselves: 'How do I feel about it? /and/ in doing so, they may mistake feelings due to a pre-existing state as a reaction to the target" (Schwarz, 1990,

p. 529). This 'how-do-I-feel-about-it' heuristic suggests that affect influences attitudes because of an inferential error, as people misattribute their affective state to an attitude target. This theory makes predictions that are indistinguishable from the earlier conditioning research reported by Clore and Byrne (1974). Typically, people only seem to rely on affect as a heuristic cue when they are unfamiliar with the attitude object, have no prior evaluations to fall back on, their personal involvement is low, and have insufficient cognitive resources to compute a more thorough response. For example, in one study we asked almost one thousand people who were feeling good or bad after seeing happy or sad films to complete an attitude survey on the street after leaving the movie theatre (Forgas & Moylan, 1987). As they presumably had little time and little capacity to engage in elaborate processing before producing a response, they may well have relied on their temporary affect as a heuristic cue to infer a reaction. It is an important limitation of this theory that the informational value of affective states for attitudes often depends on the particular situational context (Martin, 2000).

2. The processing consequences of affect.

In addition to such informational effects (influencing what people think), affect may also influence the process of cognition, that is, how people think about an attitude object (Bless & Fiedler, 2006; Clark & Isen, 1982; Forgas, 2006). People experiencing positive affect appear to employ less effortful and more superficial processing strategies, reach decisions more quickly, use less information, avoid demanding, systematic thinking, and are more confident about their decisions. In contrast, negative affect seemed to trigger a more effortful, systematic, analytic and vigilant processing style (Clark & Isen, 1982; Isen, 1984; 1987; Mackie & Worth, 1989; Schwarz, 1990). More recently, Bless (2000) and Fiedler (2000; Bless & Fiedler, 2006) suggested a fundamental evolutionary significance associated with positive and negative affect, triggering equally effortful, but fundamentally different processing styles. Thus, positive affect generally promotes a more assimilative, schema-based, top-down processing style, where pre-existing ideas, attitudes and representations dominate information processing. In contrast, negative affect produces a more accommodative, bottom-up and externally-focussed processing strategy where attention to situational information drives thinking (Bless & Fiedler, 2006). These processing strategies can

influence the way people construct attitudes and the way they produce more or less effective persuasive arguments, as we shall see later.

Towards an integrative theories: The Affect Infusion Model (AIM).

Affect may thus influence both the content, and the process of how people think. However, these effects are subject to important boundary conditions, and recent integrative theories such as the Affect Infusion Model (AIM; Forgas, 2002) seek to specify the circumstances that facilitate or inhibit affect infusion. For example, affect priming is most reliably observed when cognitive tasks call for highly constructive processing that necessitates the use of memory-based information. Similarly, the inferential model is only likely to be used when people lack the motivation, ability or resources to deal with a task more exhaustively.

The AIM predicts that affective influences on cognition and attitudes depend on the processing styles recruited in different situations that can differ in terms of two features: the degree of effort, and the degree of openness of the information search strategy. By combining processing quantity (effort), and quality (openness, constructiveness) the model identifies four distinct processing styles: direct access processing (low effort, closed, not constructive), motivated processing (high effort, closed, not constructive), heuristic processing (low effort, open, constructive), and substantive processing (high effort, open, constructive). Affect infusion is most likely when constructive processing is used, such as substantive or heuristic processing. In contrast, affect should not infuse thinking when motivated or direct access processing is used. The AIM also specifies a range of contextual variables related to the task, the person, and the situation that influence processing choices and thus affective influences.

Evidence for the role of affect in attitudes

As the previous review suggests, affect plays a significant and interactive role in how we represent the social world and organise and express our attitudes towards various social objects. This section will review a range of empirical studies illustrating the multiple roles of affect in attitudes, including (a) affective influences on attitudes about the self, (b) affect and attitudes

towards others, (c) affect and intergroup attitudes, and (d) the role of affect in attitude change and persuasion.

Affect and attitudes to the self

Fluctuating affective states play a particularly strong role in influencing our attitudes towards ourselves (Sedikides, 1995). Most research suggests a basic affect-congruent pattern: positive affect improves, and negative affect impairs self-attitudes. For example, when students were asked to form attitudes about their success or failure on a recent exam, induced positive or negative mood had a significant mood-congruent influence. Those in a negative mood blamed themselves more when failing, and took less credit for their successes, whereas those in a positive mood claimed credit for success but refused to accept responsibility for their failures (Forgas, Bower & Moylan, 1990). However, other studies indicate a somewhat more complex picture, suggesting that affect congruence in self-related thinking is subject to a number of boundary conditions.

Mood effects on self-judgments seem to depend on which **aspect** of the self is being judged (Sedikides, 1995). Peripheral, less important self-attitudes are much more likely to be influenced by temporary mood than are central, important self attitudes. As central self-attitudes are what people believe is their 'true' self, they are frequently affirmed. Central self-conceptions are well-rehearsed and require less on-line elaboration, reducing the scope for affect to infuse these attitudes. This was confirmed by Sedikides (1995), who found that temporary affect had less influence on attitudes judgments related to central traits, but had a significant mood-congruent influence on attitudes related to peripheral traits. The process mediation of this effect was confirmed when it was found that encouraging people to think more extensively about peripheral self-conceptions - paradoxically – further increased the influence of mood on these judgments.

The nature of the **task** also moderate mood effects on self-attitudes (Nasby, 1994). When happy or sad participants were asked to affirm or reject the relevance of a number of characteristics to themselves, when the task involved rejection there was no mood effect. However, affirming the relevance of a feature to the self was highly mood sensitive. This pattern seems to be due to the different processing strategies that affirmative and rejection tasks require.

Rejecting a feature as not relevant to the self is a short and direct process that requires little elaborate processing. Affectively primed information is thus less likely to influence such tasks. In contrast, affirming a trait as relevant to the self requires more elaborate thinking, and affectively primed information is more likely to impact on the outcome of such tasks, as predicted by the Affect Infusion Model (Forgas, 2002).

Self-esteem is another variable that moderates mood effects on self-attitudes. Low self-esteem persons generally have more uncertain and less stable self-attitudes, and affect may thus have a greater influence on their self-attitudes compared to high self-esteem individuals (Brown & Mankowski, 1993). The role of self-esteem in mediating mood effects on self-attitudes was also confirmed by Smith and Petty (1995) who found that mood had a significant influence on the quantity and quality of responses by the low, but not by the high self-esteem group. Low self-esteem people seem to engage in more open and elaborate processing when thinking about themselves, and their current mood is thus more likely to infuse what they report (Sedikides, 1995).

Motivational factors also influence how affective states impact on self-attitudes (Sedikides, 1994). When happy, neutral and sad persons were then asked to write self-descriptive statements, early responses showed a clear mood congruent effect. However, with the passage of time, negative self-attitudes were spontaneously reversed, suggesting the operation of a spontaneous, automatic motivated mood repair strategy. Such motivated ‘mood management’ was also confirmed in a series of our experiments (Forgas, Ciarrochi & Moylan, 2002). Negative mood effects on self-descriptions were spontaneously reversed with the passage of time, and people who scored high on self-esteem were better able to spontaneously reverse the negativity of their self-attitudes, while low self-esteem individuals persevered with negative self attitudes.

Affect may also influence on self-related attitudes as positive mood may also serve as a **resource** that allows people to overcome defensiveness and deal with potentially threatening information about themselves (Trope, Ferguson & Ragunathan, 2006). Facing negative information about the self is threatening. Those in a positive mood are more able to voluntarily expose themselves to threatening but useful information about themselves. In other words, positive

mood functions as a buffer, enabling people to handle the costs of receiving negative information. Thus, positive mood plays an important role in facilitating the process of acquiring relevant self-knowledge. The evidence thus suggests that affect often has a strong mood-congruent influence on self-related attitudes, but only when some degree of open and constructive processing is required, the attitudes are more likely to be peripheral rather than central, and there are no motivational forces to override affect congruence. Low self-esteem also seems to promote affect infusion into self-attitudes.

Affective influences on attitudes towards others.

The attitudes we form towards other people play a crucial role in social life, and are an essential symbolic guide to effective interpersonal behaviour (Mead, 1934). Many of the early experiments demonstrating affective influences on attitudes focused on interpersonal attitudes, including the experiments discussed previously by Feshbach and Singer (1957), Clore and Byrne (1974), Griffitt (1970) and others, typically finding that those in a positive mood formed more lenient, positive attitudes and those feeling bad were more negative and critical in their attitudes towards others. How and why do these effects occur?

Several experiments shed light on the cognitive mechanisms responsible for affect infusion into interpersonal attitudes. Attitudes may be coloured by affect because even the most basic **interpretation of observed behaviours** can be affectively distorted, due to greater availability and use of affectively primed information when interpreting ambiguous observed behaviours. This prediction was tested when we induced happy or sad affect in participants, and then showed them a videotape of their own recorded social interactions with a partner from the previous day (Forgas, Bower and Krantz, 1984). Participants were simply asked to make a series of rapid, on-line judgments evaluating the observed behaviours of themselves and their partners. There was a significant affect infusion even into these basic, on-line behaviour observations. Happy people saw more positive, skilled and fewer negative, unskilled behaviors both in themselves and in their partners than did sad subjects. These results establish that even the simple interpretation of directly observed interpersonal behaviors is distorted by affect, because affect priming influences the kinds of interpretations, constructs and associations that people rely on as they form attitudes

about indeterminate social behaviors. For example, the same smile that may be seen as 'friendly' in a good mood may well be interpreted as 'awkward' or 'condescending' when the observer experiences negative affect. Subsequent experiments found that such affective distortions occur even when people are forming attitudes about familiar and well-known others, such as their intimate partners (Forgas, 1995a).

Affect priming appears to be largely responsible for these effects, according to further experiments. When we asked happy or sad people to form attitudes about other people described in terms of a number of positive and negative adjectives (Forgas & Bower, 1987), happy persons formed more positive attitudes, and sad persons did the opposite. Crucially, affect also influenced processing times. People spent longer reading, encoding and processing affect-congruent details, but were faster in retrieving and producing affect-congruent attitudes. These processing differences support affect-priming theories. When learning new information, affect priming activates a richer activated knowledge base, increasing the time it should take to link new information to this more elaborate memory based. In contrast, when producing affect-congruent attitudes the task is performed faster because the affect-congruent constructs are ready and primed. These results suggest that affective states infuse social attitudes because of the selective use of affectively primed information in the way social stimuli are encoded, retrieved and interpreted.

Different **processing strategies** significantly influence affect infusion into attitudes, as the AIM suggests. Surprisingly, the more people need to think in order to compute an attitude, the greater the likelihood that affectively primed ideas will influence the outcome. In several studies, we manipulated the complexity of the task in order to create more or less demand for extensive, elaborate processing styles (Forgas, 1993, 1994, 1995b). It turns out that, paradoxically, when people have to form an attitude about a complex, ambiguous or indeterminate person, couples or events, they need to engage in longer, more elaborate and constructive processing, and affectively primed associations have a greater influence on the outcome. For example, when happy or sad participants were asked to form attitudes about more or less 'typical' couples, happy participants

formed more positive attitudes than did sad participants. However, mood effects were far greater when the couples were atypical and required longer and more extensive processing.

Similar results were obtained when we looked at mood effects on interpersonal attitudes (Forgas, 1992b). Forming attitudes towards atypical persons took longer to process, and was more influenced by affect. Do these effects also occur in realistic interpersonal attitudes? In several studies, we studied mood effects on peoples' attitudes of their real-life interpersonal relationships (Forgas, 1994). Partners in long-term intimate relationships also formed more mood-congruent attitudes, and these mood effects were accentuated when the events judged were complex and serious and so required more elaborate, constructive processing. It seems then that affect infusion into forming social attitudes is highly dependent on the processing strategies used. More elaborate, constructive processing increases the extent of affect infusion, by increasing the likelihood that affectively primed information will be used.

Can such affectively biased attitudes, once formed, also influence **interpersonal behaviours**? The links between attitudes and behaviour is one of the perennial questions in attitude research (Eagly & Chaiken, 1993). If affect can influence attitudes, will it also influence subsequent social behaviors? Positive affect should in general prime positive information and produce more confident, friendly, and cooperative 'approach' attitudes and behaviors, whereas negative affect should prime negative memories and produce avoidant, defensive or unfriendly attitudes and behaviors. In one field study we found that affect had such an affect-congruent influence on attitudes towards, and responses to a person who unexpectedly approached participants with an impromptu request (Forgas, 1998b). Students in a library received an unobtrusive mood induction, and soon afterwards were approached by another student (a confederate) who requested, either politely or impolitely, several sheets of paper needed to complete an essay. There was a clear mood-congruent pattern in attitudes and behavioral responses to the requester. Negative mood resulted in a more critical, negative attitude to the request and the requester and less compliance than did positive mood.

These results suggest that affect infusion can have a significant effect on determining attitudes and behavioral responses to people encountered in realistic everyday situations. Other

experiments found mood effects on strategic interpersonal behaviors such as requesting (Forgas, 1999a,b). Affective states should play a particularly important role in influencing attitudes and behaviours in elaborately planned interpersonal encounters such as **negotiations and bargaining** (Forgas, 1998a). We found that positive mood produced more positive and optimistic attitudes about the negotiation, led to more ambitious negotiating goals, and the formulation of more optimistic, cooperative and integrative negotiating strategies. These findings suggest that affective state can influence the attitudes people form about novel social situations, the goals they set for themselves, and the way they behave in subsequent social encounters. These effects occur because uncertain and unpredictable social encounters, such as negotiation call for open, constructive processing allowing affective states to selectively prime the thoughts and associations used in formulating attitudes, plans and behaviors.

Affective influences on stereotyping, prejudice and intergroup attitudes

Attitudes towards members of in-groups vs out-groups are among the most important, and most frequently research topics in attitude research. Given the frequently demonstrated and almost universal tendency for people to prefer those similar to themselves and members of their own groups to dissimilar others, it has long been assumed that intergroup attitudes are particularly prone to irrational, affective distortions (Allport, 1954). Early attempts to explain the 'emotionalism' of intergroup attitudes were based on psychodynamic ideas of projection and displacement, and the frustration-aggression hypothesis. More recent work distinguished between affective states that are enduring vs short term, and affective states that are integral vs incidental to the intergroup experience (Bodenhausen, 1993; Haddock, Zanna, & Esses, 1993; Stangor, Sullivan, & Ford, 1991). Intergroup attitudes can certainly be influenced by transient, incidental moods as a result of conditioning processes (Clore & Byrne, 1974; Griffitt, 1970). If one regularly encounters members of out-groups in a particular affective state – such as fear, discomfort, disgust or embarrassment – such cultural conditioning can result in deeply ingrained and enduring attitudes. It seems that affective biases in intergroup attitudes tend to be stronger when people are unaware of their feelings, are not motivated and/or lack the cognitive resources to control their biases, and have relatively little information about the target group (Bodenhausen & Moreno, 2001).

After all, contact with an out-group may often produce feelings of anxiety, uncertainty and insecurity (Stephan & Stephan, 1985). The experience of anxiety may reduce information processing capacity, and amplify reliance on stereotypes, producing a tendency to see all out-group members in stereotypic ways (Wilder & Shapiro, 1989). In several experiments we found that trait anxiety significantly moderated the influence of negative mood on inter-group judgments (Ciarrochi & Forgas, 1999). Low trait anxious whites in the US reacted more negatively to a threatening Black out-group when experiencing negative affect. Surprisingly, high trait anxious individuals showed the opposite pattern: they went out of their way to control their negative tendencies when feeling bad, and produced more positive judgments. It appears that low trait anxious people processed automatically and allowed affect to influence their judgments, while high trait anxiety combined with aversive mood triggered a more controlled, motivated processing strategy designed to eliminate socially undesirable inter-group judgments.

Temporary positive affect can sometimes also improve intergroup attitudes, according to the so-called 'contact hypothesis' (Allport, 1954; Amir, 1969; Brewer & Miller, 1996). According to this view, contact with out-group members in a positive affective state may reduce aversive feelings and improve inter-group relations. Contact episodes that generate positive feelings – such as successful cooperation - are likely to be especially effective.

Alternatively, positive affect may also promote more inclusive cognitive categorisations increasing the schema-driven, top-down processing of social information (Bless, 2000; Fiedler, 2000). This effect may improve intergroup attitudes when the categories activated are superordinate categories. However, according to some experimental studies, when group membership is of low relevance, positive mood may facilitate instead the use of in-group vs. out-group categories, and inter-group discrimination may be increased rather than reduced as a result (Forgas & Fiedler, 1996).

Not all affective states have the same effects, however. For example, sadness, anger and anxiety can have quite different consequences for intergroup attitudes, with sadness reducing, but anger and anxiety increasing reliance on stereotyped attitudes (Bodenhausen, Sheppard, & Kramer, 1994; Keltner, Ellsworth, & Edwards, 1993; Raghunathan & Pham, 1999).

Affect is thus likely to influence inter-group judgments both by influencing the information processing strategies used, and influencing the way additional information is selected and used. As positive moods often facilitate top-down, schematic processing (Bless, 2000; Fiedler, 2000), happy persons may produce less accurate social judgments (Forgas, 1998c; Sinclair & Mark, 1995) and are more likely to rely on stereotype information than neutral or sad persons (Abele, Gendolla & Petzold, 1998; Bodenhausen, Kramer, & Süsser, 1994; Park & Banaji, 1999). However, negative affective states other than sadness, such as anger or anxiety may also increase reliance on stereotyping according to evidence from several experiments (eg. Bodenhausen et al., 1994b). In addition to such processing effects associated with mood, affective states may also have informational effects, simply facilitating the use of mood-congruent knowledge in stereotype judgments. For example, Esses and Zanna (1995) found in several studies that negative moods increased the tendency to form negative judgments about ethnic minorities.

The final attitude may further be influenced by people's motivated tendency to correct what they perceive as undesirable or socially unacceptable judgments (Bodenhausen, Macrae, & Milne, 1998). This may involve a genuine attempt to correct for affective biases by either abandoning or re-computing an unacceptable judgment (Strack, 1992). There is some evidence that negative affect generally facilitates a more cautious, defensive interpersonal style (Forgas, 1999a,b). Consistent with this notion, sad persons seem to be more likely to engage in stereotype correction and are less likely to give expression to negative stereotypes in responding to others (Unkelbach, Forgas & Denson, 2009; Lambert, Khan, Lickel, & Fricke, 1997). Other negative affective states such as guilt also produce a motivated tendency to reduce or eliminate stereotyping, especially among otherwise low-prejudiced persons (Devine & Monteith, 1993). It almost appears as if negative affect sometimes functions as a warning signal, and this 'alerting' effect of negative mood is particularly strong for individuals who are habitually anxious and score high on trait anxiety (Ciarrochi & Forgas, 1999).

It appears then that affect plays a complex and multiple role in intergroup attitudes, prejudice and stereotyping, potentially influencing every stage of the stereotyping process. Most of these effects can be understood in terms of the informational and processing consequences of affect discussed previously. However, contextual and situational factors also play a critical role in

mediating these effects (Martin, 2000). For example, the quality of the particular affective state, whether it was directly elicited by the out-group, and individual differences such as trait anxiety all seem to influence when and how affect will impact in inter-group judgments. A comprehensive explanation of these effects will require an integrative model, an issue that we will return to in the final section of this chapter.

The role of affect in persuasion and attitude change

Students of rhetoric and persuasion have long assumed that the ability to induce an emotional response in an audience is an important prerequisite for effective communication. Experimental studies also showed that induced positive affect promotes a positive response to persuasive messages (McGuire, 1985; Petty, Gleicher & Baker, 1991; Razran, 1940). In contrast, fear-arousing messages can also promote attitude change (Boster & Mongeau, 1984). However, this effect is undermined when fear triggers a defensive, self-protective reaction or a level of anxiety and arousal that is distracting (Ditto & Lopez, 1992; Janis & Feshbach, 1953). In fact, fear seems most effective when the audience believes that following the message is effective in avoiding negative consequences.

Affect may influence the kind of information processing strategies people use when dealing with a persuasive message (Petty et al, 1991). An affect-attitude link can also be explained in terms of the direct 'how do I feel about it?' heuristic suggested by Schwarz and Clore (1983). For example, Sinclair, Mark and Clore (1994) showed that college students were significantly more likely to agree with persuasive messages advocating comprehensive exams when they were interviewed on a pleasant, sunny day rather than an unpleasant, rainy day. Such direct effects of mood on responses are particularly likely when people are not able or willing to engage in detailed processing.

The way the persuasive message is framed may also moderate the consequences of affect, as shown in an interesting study by Wegener, Petty and Klein (1994). When persuasive arguments emphasized positive outcomes, happy mood produced more favorable responses. When the arguments pointed to the negative consequences of failing to follow the recommended course, it was sad mood that produced more favorable responses. It seems like good mood selectively primed positive ideas that helped persuasion only when thinking about positive outcomes was

helpful. When it was thinking about negative outcomes that most helped persuasion, it was bad mood that was more effective.

Affect in dissonance-induced attitude change. The experience of dissonance between attitudes and behaviors is one of the more potent mechanism producing attitude change (Cooper & Fazio, 1984; Harmon-Jones, in press; Zanna & Cooper, 1974). Cognitive dissonance produces negative affect because discrepancy among cognitions undermines our clear and certain knowledge about the world, and thus our ability to engage in effective action (Harmon-Jones, 1999a; Harmon-Jones et al., 1996). However, other experiments suggest that negative affect is only triggered when consequences are 'real' and there is an experience of personal responsibility (Cooper & Fazio, 1984). Qualitatively different dissonance experiences also seem to trigger qualitatively different affective reactions. Belief disconfirmation is more likely to produce anxiety, whereas post-decisional dissonance is more likely to induce regret. However, the availability of alternative attributions for aversive affect may also reduce subsequent attitude change (Losch & Cacioppo, 1990). Generally, positive affect decreases, and negative affect increases the dissonance experience and resulting attitude change. Once consonance is restored, affective state also tends to improve (Burris, Harmon-Jones & Tarpley, 1997; Elliot & Devine, 1994). Thus, affective states seem to play an important role in attitude change, influencing both the way people respond to persuasive messages, and the way they resolve attitude-behaviour discrepancies. However, much work remains to be done in discovering the precise cognitive mechanisms responsible for these effects.

Affective influences on the Production of Persuasive Messages

Affect may also influence the effectiveness of the persuasive messages people produce to bring about attitude change (Bohner & Schwarz, 1993). Despite much research on affective influences on responding to persuasion, there has been little work on how such messages are produced. We looked at this possibility in a series of recently published experiments (Forgas, 2007). In one experiment (Forgas, 2007, Exp. 1), participants received an audiovisual mood induction, and were then asked to produce persuasive arguments for or against an increase

in student fees, and Aboriginal land rights. They produced an average of seven arguments, and each argument was rated by two raters blind to the manipulations for overall quality, persuasiveness, level of concreteness, and valence (positive-negative). Results showed that those in a negative mood produced arguments on both issues that were of significantly higher quality and were judged to be more persuasive than the arguments produced by happy participants. This mood effect was largely due to the greater specificity and concreteness of arguments produced in a negative mood. A mediational analysis confirmed that it was mood-induced variations in argument concreteness that influenced argument quality.

In a further experiment, happy or sad participants (N=125) were asked to produce persuasive arguments on two political issues, for or against Australia becoming a republic, and for or against a radical right-wing party. Two raters ($r=.91$) assessed each argument in terms of (a) persuasiveness and argument quality, (b) valence (the use of positive or negative contents), and (c) self-relevance (the extent to which participants used personal, self-relevant themes). Sad mood again resulted in higher quality and more persuasive arguments (see Figure 6), consistent with the theoretical prediction that negative mood should promote a more careful, systematic, bottom-up processing style that is more attuned to the requirements of a particular situation (Bless, 2001; Bless & Fiedler, 2006; Fiedler, 2001; Forgas, 2002).

However, do the arguments rated as 'persuasive' by trained raters actually produce real attitude change in real persons? In experiment 3 the arguments produced by happy or sad participants were presented to a naïve audience of 256 undergraduate students. Their baseline attitudes on the four issues were assessed at the beginning of the term. After reading one of the pro- or contra persuasive arguments on one of the issues written by one of the happy or sad participants in Experiments 1 and 2, their attitude on all four issues was again assessed. Observed changes in attitudes in response to the persuasive arguments were assessed against the baseline measurement obtained earlier. Results showed that arguments written by negative mood participants in Experiments 1 and 2 were significantly more successful in producing a real change in attitudes than were arguments produced by happy participants. Attitudes were also more likely to change when the arguments advocated a popular rather than an unpopular position, and

negative mood arguments were especially successful in producing attitude change when they advocated a popular position.

What happens when persuasive arguments are presented in an interpersonal context, as is usually the case in interactions prior and during criminal and civil trials? Do people in a negative mood still produce more effective and more persuasive communications? In a further experiment (Forgas, 2007, Exp. 4) persuasive attempts by happy and sad people were directed at a 'partner' to volunteer for a boring experiment using email exchanges to convince them. The motivation to be persuasive was also manipulated by offering some participants a significant reward if their persuasive attempts were successful (movie passes). Mood again had a significant effect on argument quality: people in a negative mood produced higher quality persuasive arguments than did the neutral group, who in turn did better than the positive group. However, the offer of a reward reduced mood effects on argument quality, confirming a key prediction of the Affect Infusion Model (Forgas, 1995, 2002), that mood effects on information processing – and subsequent social influence strategies – are strongest in the absence of motivated processing. A mediational analysis confirmed that it was indeed mood-induced variations in accommodative processing and argument concreteness that mediated mood effects on argument quality.

These experiments extend earlier work and demonstrate the benefits of negative mood on the performance of cognitive tasks such as effective persuasion. Strategic social behaviors such as persuasive communication involve the same kinds of cognitive processes we considered earlier, so it is not surprising that more accommodative, careful processing should also improve the quality of strategic communications. Persuasive arguments produced in negative mood are not only of higher quality as judged by raters, but are also significantly more effective in producing genuine attitude change in people, largely because they contained more concrete details and more factual information (Cooper, 1932). These results are generally consistent with other studies suggesting that negative affect typically promotes a more concrete, accommodative, externally focused information processing style that also can reduce the incidence of judgmental errors and improve eye-witness memory (Forgas, 1998; Forgas et al., 2005). This kind of concrete, accommodative thinking should also have direct benefits when it comes to the effective use of

attitude change strategies, such as the production of persuasive arguments, something that happens frequently in everyday life, in organisations, in courtroom settings and in legal work. This finding may have interesting applied implications, for example in training participants in organisations and in the legal system to become more aware of mood effects on their strategies (Forgas & George, 2001).

Summary and Conclusions

The evidence reviewed in this chapter shows that mild everyday affective states can have a highly significant influence on the way people form, maintain, and change their attitudes, and how attitudes and social information are cognitively represented and categorized (Forgas, 1979; Niedenthal & Halberstadt, 2000). Further, the experiments discussed here show that different information processing strategies play a key role in linking affect and attitudes. The multi-process AIM (Forgas, 2002) in particular offers a simple and parsimonious explanation of when, how and why affect infusion into attitudes is or is not likely to occur. A number of studies support the counter-intuitive prediction based on the AIM that more extensive, substantive processing enhances mood congruity effects (Forgas, 1994; 1995b; Nasby, 1994, 1996; Sedikides, 1995). Affect infusion influences not only attitudes but subsequent social behaviors as well (Forgas, 1998a,b; 1999a,b). In contrast, affect infusion is absent whenever a social cognitive task could be performed using a simple, well-rehearsed direct access strategy, or a highly motivated strategy that offers little opportunity for primed mood-congruent information to infuse information processing (Fiedler, 1991; Forgas, 1995a). Affect infusion occurs not only in the laboratory, but also in many real-life situations, as evident in attitudes formed in intimate relationships (Forgas, 1994). Obviously considerably more research is needed before we can fully understand the multiple influences that affect has on attitudes and interpersonal behavior. Hopefully, this review will stimulate further interest in this fascinating and rapidly developing area of inquiry.

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