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Media-Induced Affects and Opinion Formation: How Related and Unrelated Affects Influence Political Opinions

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Reason and emotion are often seen as two distinct mental faculties, with optimal decision-making assumed to require the protection of cognitive reasoning processes from the intrusion of irrational emotions. Accordingly, the media are expected to cover political issues without appealing to the emotions of the citizen, in order to support rational opinion formation. However, recent research indicates that the media often elicit affective responses in the recipients. This article focuses on the question of how such affective responses influence recipients' political opinions. The effects of moods, arousal, and emotions in judgment processes are reviewed. Importantly, the article addresses the question as to whether affects, which are relevant for a judgment, have the same impact as affects, which are not relevant for a judgment.

Introduction

Citizens in a democratic society are, by definition, participants in the process of formulating the common rules for their community. Democratic theory addresses the normative demands made of the citizen that ensure the success of the democratic process. Among other things, the citizen is assumed to possess a certain level of cognitive competence, which enables him or her to participate in the political discourse. This competence includes some basic knowledge about the functioning of the political system and current political events as well as the ability to make autonomous and reasonable judgments (Berelson 1952; Detjen 2000). In this context, emotions are perceived as a hindrance to rational decision-making that promotes the development of suboptimal solutions. Reason and emotion are often seen as two distinct mental faculties, with optimal decision-making assumed to require the protection of cognitive reasoning processes from the intrusion of irrational emotions (Elster 1996; Marcus 2002).

Democratic theory also ascribes to the news media a central role in the promotion of political discourse. News media have the obligation to help the citizen exercise his or her participation rights by disseminating reliable information and presenting the relevant points of view on important issues (e.g., Christians et al. 2009). Furthermore, the media are expected to cover political issues without appealing to the emotions of the citizen because emotions can undermine a reasonable discourse (e.g., Martinsen 2009).

However, content analyses have repeatedly demonstrated that political news reporting contains significant emotional appeal. For example, Jerit (2004) observed that, during the Canadian General Election Campaign of 1988, the opponents of a free trade agreement with the U.S.A. heavily relied on arguments related to anger and fear. Anger appeals consisted of allegations that the Canadian Prime Minister was selling out, betraying his country, and turning Canada into a U.S. satellite by promoting the free trade agreement. Fear appeals cited economic threats of the proposal, such as potential job losses. Further studies have shown that appeals to emotions including hope or pride are conveyed to voters during campaigns (Marmor-Lavie & Weimann 2005) and that such appeals are often included in politicians' speeches (De Castella, McGarty, & Musgrove 2009), political advertisements (Kaid & Johnston 1991), and news reports about events, such as 9/11 (Cho et al. 2003). More importantly, such semantic depictions of political issues, candidates, and events have been shown to evoke emotional reactions in recipients (e.g., Gross & Brewer 2007; Nerb & Spada 2001).

In addition to semantic information, visual and auditory elements as well as formal features of articles and news programs may elicit emotional reactions. In an experimental demonstration by McHugo and colleagues (1985), video clips of Ronald Reagan displaying happiness, fear, or anger had a significant impact on viewers' emotional reactions. Furthermore, emotional reactions were induced by video clips of emotional facial displays that had the audio track removed (i.e., with no semantic information communicated). Similarly, Bucy (2003) found that, in the context of short news segments, the depicted potency of President Bush's behavior influenced viewers' arousal and their experience of sympathy. Thus, visual information about political candidates may be an agent of emotion.

Researchers have also demonstrated a relationship between emotional reactions and formal or structural features of audiovisual media, such as edits, motion, zooms, and sounds (Lang 1990; Lang et al. 2000; Simmons et al. 1999). According to Lang (2000), structural features can augment emotional arousal by urging the recipient to assess a novel stimulus configuration (e.g., a new setting after a scene change). In other words, the higher the pacing and complexity of an audiovisual production, the stronger the emotional activation on the part of the recipient.

Thus, previous research indicates that various aspects of political news may trigger emotional reactions. This finding has important implications for public opinion formation because the

media are the most important source of political information for the majority of citizens. When learning and forming opinions about political issues and candidates, citizens may regularly experience emotions with the potential to influence their judgments.

Furthermore, not only political news but also entertainment programs, commercials, and non-political news trigger emotions that might influence political judgments. For instance, Wirth, Schemer, and Matthes (2010) found that moods induced by commercials influenced the evaluation of two political news stories that were aired before and after the commercial break. This finding implies that the political reasoning process is susceptible to the influence of emotions, even those that are irrelevant to political judgment.

The numerous sources of emotional triggers in the media suggest that the influence of relevant and irrelevant affect on political opinion formation may be the rule rather than the exception. Thus, investigations of media effects on political opinions must take affective responses into account. This article addresses the ways in which media-induced affect influences political opinion formation by reviewing research on the influence of affect on judgment. The review not only addresses the attitudinal outcomes of affective influences but also considers the mechanisms that produce these effects. In particular, I focus on the differential effects of relevant versus irrelevant affect that are of particular importance for communication science, given that media may induce both types of affect. Because affective influences have traditionally been disregarded in key theories regarding the effects of mass media (cf. Schenk 2007), empirical findings from communication science and political science fields focusing on the influence of affect on opinion are still scarce (cf. Marcus, 2002; Nabi 2009; Wirth & Schramm 2005). However, psychological research has yielded substantial insight into the effects of affective states on attitudes (cf. Blanchette & Richards 2010) and the underlying processes that produce such affective influences. Accordingly, I draw primarily on psychological research to explain how affect influences political opinion formation. Whenever possible, studies from communication science and political science are included.

The review is organized as follows: First, the basic concepts of affect and cognition are defined. Next, I address the effects of media-induced affect on political judgments. In addition to empirical findings, I further discuss the underlying mechanisms and the differential influence of relevant versus irrelevant affect. The review ends with a synopsis of the central findings on the influence of affect on political opinion and a discussion of the implications associated with these findings.

Emotion, mood, arousal, and cognition

Posing the question of how emotions influence political judgments implies the perception of emotion as an extraneous factor that intrudes into political thinking. The dualistic view of reason and emotion as two distinct entities has a long tradition in philosophy (cf. Ulich & Mayring 2003). In psychology, it is generally accepted to broadly distinguish between cognition and affect as two categories roughly corresponding to reason and emotion (cf. Clore, Wyer et al. 2001; Otto, Euler, & Mandl 2000; Zajonc 1998). Nevertheless, modern psychology has struggled to arrive at clear-cut definitions of concepts such as emotion and cognition and methods of differentiating between them (LeDoux 1999; McDermott 2004). In particular, scholars vary in how they define cognition and affect. Broadly defined, cognition and cognitive processes comprise all forms of information processing and the corresponding mental representations within the brain (e.g., Bodenhausen, Macrae, & Hugenberg 2003; Lazarus 1984; Leventhal & Scherer 1987). In this account, cognition is not bound to consciousness but may function outside of an individual's awareness. Based on a more narrow definition rooted in the dualistic view of reasoning, cognition comprises all conscious thoughts, beliefs, and recollections (e.g., Marcus 2002). Such a narrow understanding of cognition emphasizes reflective and rule-based processes and deemphasizes reflexive and automatic processes (cf. Lieberman et al. 2002; Smith & Neumann 2005). Cognition is more or less equated with conscious and effortful reasoning and processes such as interpretation, judgment, and decision-making (cf. Blanchette & Richards 2010). This review takes the broad definition of cognition, with cognitive states perceived to lie on a continuum between the extremes of automatic versus intentional. Political reasoning and judgment processes are examples of higher (i.e., conscious and controlled) cognitive processes. In contrast, implicit and automatic processes, such as awareness and recognition, are regarded as lower cognitive processes (cf. Bodenhausen et al. 2003). Thus, we focus on higher cognitive processes in our review of affective influences on political judgment. Accordingly, affect must be conceptually differentiated from higher cognition.

Generally perceived as complementary to (higher) cognition, affect includes all types of emotional reactions. Emotions, moods, and arousal are referred to as affective phenomena (Frijda 1993; Otto et al. 2000; Petty, Gleicher, & Baker 1991). In other words, moods, emotions, and arousal represent certain types of affect. However, what is the shared characteristic underlying different types of affective phenomena? According to Wyer, Clore & Isbell (1999, p. 3) "*affect* refers to the positively or negatively valenced subjective reactions that a person experiences at a given point in time. These reactions are experienced as either pleasant or unpleasant *feelings*." Hence, affect has two characteristics. First, affect is a subjective reaction that is experienced as a feeling. Second, affect informs the individual about the valence or value of something. However, affect differs from cognition, which can also contain evaluative meaning (e.g., Breckler & Wiggins 1989; Eagly & Chaiken 1993), in that the former represents feeling, that is, the subjective experience of bodily changes and reactions (Damasio 1994; Frijda 1993; Wyer et al. 1999; Zajonc 1998). For example, feeling happy is the subjective experience of pleasant bodily changes and reactions. However, when an individual reflects on his or her current mood, the notion "I am happy" would represent cognition. Neuropsychological studies demonstrate that different (but interacting) brain systems underlie cognitive and affective responses (Damasio 1994; LeDoux 1999).

Moods and emotions are two distinct affective states that are typically differentiated based on three criteria: their duration,

intensity, and specificity (or reference to an object) (Forgas 1992; Frijda 1993; Lazarus 1991; Otto et al. 2000). Moods are low in intensity, high in longevity, and do not refer to an object. Emotions are high in intensity, low in longevity, and refer to an object. The most important criterion for differentiating between moods and emotions concerns object relations (Frijda 1993; Otto et al. 2000). Emotions are typically geared toward a specific object: One is afraid *of* or angry *about* something. In contrast, moods often lack any direct relation to an object. A person in an irritated mood might react to various objects or events with annoyance (Frijda 1993).[1] The varying specificity of emotions and moods entails that moods, compared to emotions, can influence a bigger set of judgments (cf. Clore & Huntsinger 2009; Forgas 1995; Schwarz & Clore 1988). This idea will be further discussed in a later section.

In addition to mood and emotion, arousal has been described as an important affective phenomenon. In contrast to mood and emotion, arousal is regarded as a dimension or component of an affective state instead of being an affective state per se (e.g., Russell 1980; Schachter & Singer 1962). According to two-dimensional models of affect, affect is structured in terms of valence and arousal. In other words, all affective states can be arranged in a two-dimensional space with "valence" and "arousal" as the two axes. Arousal has also been defined as a central component of emotional experiences. Schachter and Singer (1962) proposed that emotional feelings result from the cognitive interpretation of physiological arousal. Although some have described arousal as a multidimensional construct (e.g., Thayer 1978), most researchers perceive arousal as a bipolar continuum between deactivation and activation (Russell & Feldman Barrett 1999). According to Kroeber-Riel (1979), arousal or activation "provides the organism with energy and is responsible for the psychological and motor activity of the organism." (p. 241). In contrast to valence, which is perceived as a feeling of pleasantness, arousal is experienced as a feeling of mobilization or energy (Russell 2003). Arousal is often associated with affective intensity. However, whether arousal contributes to or constitutes affective intensity is a matter of continued debate (cf. Reisenzein 1994; Sonnemans & Frijda 1994; Storbeck & Clore 2008). In the following discussion, arousal is regarded as an affective reaction ranging from low to high activation, with high activation being associated with high affective intensity and low arousal being associated with low affective intensity.

Reconsidering the object relations of affect, it should be noted that the reference object of an affective state is not necessarily its cause (Frijda 1993). Moods may not refer to a specific object, although they may be triggered by a specific object or event. In fact, moods can relate to various objects as the residual of an emotion that has dissipated and lost its object focus. Similarly, residual arousal may be projected onto objects that did not originally cause the affective reaction (Zillmann 1991). An emotion may also be directed toward an object that was not its original trigger. Specifically, as the initial object focus diminishes, the associated affect becomes attributable to a wider range of objects (Schwarz & Clore 1988; Wyer et al. 1999). Nonetheless, compared to moods, emotions are less likely to influence judgments that are not inherently related to the emotion-inducing event (e.g., Schwarz 1990). The reason for the selectivity of emotional influence lies in the cognitive content of emotions: "Emotions arise in response to the meaning structures of given situations; different emotions arise in response to different meaning structures." (Frijda 1988, p. 349). In other words, a particular emotion, such as anger or fear, is the result of an assessment of a specific situation or object. Different situations and objects tend to trigger different emotions. Likewise, the currently prevalent appraisal approach to emotion postulates that an emotion is evoked by the evaluation of an event on multiple cognitive dimensions (e.g., Ellsworth & Scherer 2003; Lazarus 1991; Smith & Ellsworth 1985).[2] For example, fear is elicited when an individual appraises a situation as threatening and perceives no possibility to cope with the threat. Thus, emotions exhibit a cognitive specificity that reduces their sphere of influence (Frijda 1993; Han, Lerner, & Keltner 2007). In contrast, moods have little or no cognitive content, can typically be reduced to their valence, and, thus, be projected onto a broad range of objects (e.g., Forgas 1992; Schwarz & Clore 1988). The same is true for arousal, which sphere of influence is not cognitively constrained.

The previous remarks suggest that judgment can be influenced by both affect that is related and affect that is unrelated to the judgment itself. An affective state (such as moods, emotions, and arousal) is considered related to a judgment when the affective state is caused by the object being evaluated. An affective state caused by a different object is considered unrelated.[3] In social psychological research, unrelated affect is typically induced by presenting subjects with emotional stimuli (e.g., Forgas 1992; DeSteno et al. 2004) or instructing subjects to recall emotional life events (e.g., Small & Lerner 2008; Tiedens & Linton 2001). These approaches may be suitable in social psychological models that assume the effects of related and unrelated affects to be similar and are less concerned with the specific source of affect (e.g., Forgas 2002; Han et al. 2007; Schwarz 1990). However, whether related and unrelated emotions indeed have the same persuasive impact is an open question.

On the one hand, related and unrelated affects are unlikely to differ with regard to their experiential quality. Given that both forms of affect are experienced as feelings, then related and unrelated affect should influence judgments similarly. On the other hand, related and unrelated affects differ with regard to

[1] It is a semantic question whether to term a mood state with a reference object a "mood" and to term an emotional state without a reference object "emotion". The crucial issue is that such affective states exist and that they may influence judgments (cf. Han, Lerner, & Keltner 2007).

[2] Appraisal theories are usually based on a broad understanding of cognition, that is, cognitive appraisal may be automatic or conscious (cf. Leventhal & Scherer 1987).

[3] According to this clear-cut definition, affect is or is not relevant to a particular judgment. Alternatively, one might perceive the judgment-relatedness of affect on a continuum. Depending on its cause, affect may be more or less relevant to various judgments. For instance, affect that is elicited by a news article about the economic crisis may be central to an evaluation of the economy but less central to an evaluation of the general state of the nation.

their causes. Related affect may constitute a learned response[4] that is activated regularly when encountering an object. Alternatively, related affect may constitute an immediate reaction toward a present stimulus that is not dictated by preexisting evaluations (Bodenhausen et al. 2001; Perrott & Bodenhausen 2002). In contrast, unrelated affect is neither a learned nor a current reaction toward the object under consideration. Rather, unrelated affect is caused by an object or issue not genuinely related to the object under judgment. Thus, the question must be addressed as to whether the experiential quality or the cause of affect is more dominant in determining the affective influences on judgments. If the experiential quality is more dominant, then related and unrelated affects should yield similar effects. If the cause is more dominant, then related and unrelated affects should yield differential effects.

In summary, political judgment may be influenced by affective reactions with different triggers and of varying cognitive complexity. Affect can influence the evaluation of objects causing the affective reaction and objects that bear no causal relationship with the affective reaction. Moods are low in cognitive complexity, which allows them to influence a broad array of judgments. In a similar way, arousal may be projected onto various objects. In contrast, emotions exhibit a higher cognitive specificity that reduces their sphere of influence. Previous research has mainly focused on the persuasive effects of unrelated affect based on the assumption that related and unrelated affects yield similar effects. In this review, I specifically emphasize the question regarding whether related and unrelated affects might have a differential persuasive impact on higher cognitive judgment processes.

Affective influences on information processing and opinion formation

In the following section, I review the influence of media-induced affect on political opinions. The review focuses on the three affective phenomena that have received the most attention in persuasion research—mood, arousal, and emotion—with an emphasis on the differences between processing effects and persuasive or attitudinal effects of affect. An attitude is an evaluation of an object on a continuum ranging from "completely negative" to "completely positive" (Eagly & Chaiken 1993). In this account, persuasion is the process in which an attitude is changed. Affect has a persuasive effect if its characteristics (e.g., the valence or cognitive structure) are transferred to an attitude, that is, if affect leads to *affect-congruent* attitudes. This is the case, for instance, when the valence of a positive mood is projected onto a politician. Thus, attitudinal effects imply a correspondence between the characteristics of a present affective state (e.g., the valence of the mood) and the characteristics of an attitude that is formed (e.g., the valence of the attitude). In other words, affect influences *what* attitudes are formed.

In contrast, processing effects refer to the influence of affect on information processing (e.g., depth of information processing). Processing effects do not entail a correspondence between the characteristics of an affective state and a formed opinion, that is, they do not produce affect-congruent attitudes. For example, a positive mood may decrease the depth of processing without directly increasing the positivity of a political judgment. Nevertheless, processing effects of affect have persuasive implications. In other words, by influencing information processing, affect determines *how* attitudes are formed. Hence, in the next sections, the processing effects of moods, arousal, and emotions are first addressed, followed by a discussion of the attitudinal ramifications of affect. Each section is divided into three parts: First, empirical findings on the influence of mood, arousal, or emotion are reviewed. Second, theoretical models that explain these influences are described. Finally, the differential effects of related and unrelated affects on political judgment are discussed.

The processing effects of affect

Effects of mood on information processing

Empirical findings. When investigating the effects of mood on information processing, social psychologists are generally interested in how the amount and quality of information processing are differentially impacted by positive versus negative moods that are unrelated to the information being processed. In other words, the mood is induced by stimuli that exhibit no thematic relation to the object or message to be evaluated. Findings indicate that positive moods are typically associated with a cursory, heuristic, and creative processing style, whereas negative moods tend to prompt an attentive, detailed, and conservative style of processing information (cf. Bless & Fiedler 2006; Bless & Schwarz 1999).

Mackie and Worth (1989, experiment 1) demonstrated that positive mood decreased processing depth in comparison to neutral mood. The results showed that, when the time to process the message was limited, individuals in a good mood were equally persuaded by strong and weak arguments surrounding the issue of governmental regulation and acid rain. These mood effects on processing were replicated in follow-up studies. In addition, these studies demonstrated that positive mood, relative to neutral mood, increased the impact of source expertise in the evaluation of issues such as gun control (Mackie & Worth 1989, experiment 2), and reduced the recall of processed information (Stroessner & Mackie 1992, experiment, 2). Happy individuals tend to process information only superficially and base their decisions on heuristics such as party identification, the credibility of the communicator, or the opinion of the majority, even though the happy mood bears little relevance to the judgment being made.

In contrast, negative moods have been shown to induce a more systematic processing of information and more elaborated judgments (Chartrand, van Baaren, & Bargh 2006; Forgas &

[4] Emotional learning can be accomplished by both elaborated and automatic processes (LeDoux 1999; Leventhal and Scherer 1987; Smith and Neumann 2005). However, once an association has been established, the affective reaction will be automatically activated when the stimulus is encountered (LeDoux 1999; Smith and DeCoster 2000). Importantly, neuropsychological findings suggest that individuals do not store the affect itself but associations between a stimulus and an affective reaction (i.e., reaction patterns) and that such associations can be activated at a later encounter (LeDoux 1999).

Bower 1987; Schwarz 1990). Bless and colleagues (1990) found that sad individuals were more persuaded by strong arguments than by weak arguments, whereas happy individuals were equally persuaded by weak and strong arguments. Furthermore, the authors found that negative mood led to counter-arguments in response to weak arguments, whereas positive mood did not. This finding suggests that negative mood facilitates more careful processing of available information, which allows individuals to identify weak arguments.

Mood effects on processing have been shown to be contingent on political expertise. Hsu and Price (1993) found that negative mood increased processing depth in comparison to positive mood only when political expertise was high. Mood had no influence on information processing when political expertise was low. This finding implies that negative mood promotes better analytical processing only for individuals whose cognitive abilities permit such processing.

Moods have also been shown to influence the reliance on stereotypes during judgment formation. Bodenhausen, Kramer, and Süsser (1994) found that, compared to neutral mood, positive mood increases the use of stereotypes. In a series of experiments conducted at a U.S. university, the researchers showed that happy participants rated the guilt of an alleged delinquent as significantly higher when the delinquent was identified as member of a stereotyped group (e.g., the Hispanic minority). No such difference emerged for participants in the neutral mood condition. Similarly, Park and Banaji (2000) discovered that happy individuals judged more African American names than European American names as the name of a criminal. For individuals in a neutral mood, the effect was significantly weaker. In contrast, negative mood has been shown to prompt individuals to rely on individuating information instead of category information when forming an opinion (Bless, Schwarz, & Wieland 1996).

The findings indicate that unrelated positive mood hinders the analytical processing of information. Happy individuals tend to produce fewer counter-arguments in response to persuasive messages, to fail to differentiate between strong and weak arguments, and to rely on cognitive shortcuts and stereotypes during judgment formation. In contrast, unrelated negative moods are associated with systematic processing and the analysis of individuating information instead of category information. The effects of mood on processing have been found across issues such as student service fees (Bless et al. 1990), the adoption of comprehensive university exams for graduation (Kuykendall & Keating 1990; Mitchell 2000), condom usage and health-related food choice (Armitage, Conner, & Norman 1999), character judgment (Chartrand, van Baaren, & Bargh 2006; Forgas & Bower 1987), and attitudes toward social groups (Stroessner & Mackie 1992).

Mechanisms. Researchers have proposed different theoretical explanations for the effects of mood on information processing. On the one hand, some have argued that moods may reduce the cognitive capacity of individuals to process information (e.g., Mackie & Worth 1989; Isen 1987). For example, Mackie and Worth (1989) argue that positive moods activate a large amount of memory content with positive valence, which, in turn, occupy and diminish the available cognitive resources. This notion is supported by the finding that positive mood impaired discrimination between strong and weak arguments only when processing time was limited. When processing time was not constrained, the compensation of reduced processing resources became possible.

The capacity hypothesis of mood effects on processing has been questioned by different authors (Bless 2000; Fiedler 2001; Forgas 1992). According to Bless (2000), the major point of criticism is that the capacity hypothesis has never been adequately tested given that cognitive capacity has not been directly assessed. A more prominent position relates to the argument that mood does not influence cognitive capacity but rather the motivation to process information. According to the affect-as-information approach (e.g., Schwarz 1990, Schwarz & Clore 2003)[5], affective states serve as adaptive indicators of whether a situation is benign or hazardous. Specifically, positive moods convey to the individual that the environment is benign, that no personal goals are threatened, and that no particular effort has to be expended. Negative moods signal to the individual that the situation is threatening and that some effort has to be expended to achieve a positive outcome. In turn, positive mood is associated with a weak motivation to process information, whereas negative mood is associated with a strong motivation to process information.

An argument that aligns with the mood-as-information perspective has been put forward by Bless (2000, 2001). Bless argues that mood influences a person's reliance on established schemata and knowledge structures. Because positive moods suggest that a situation is benign, an individual can depend on everyday routines that have proven reliable (and have, thus, been consolidated over time). Negative moods signal the existence of a problem that necessitates refraining from standard procedures and performing a detailed analysis of the situation. Similarly, Fiedler (2001) argues that positive moods support assimilative (top-down) information processing and negative moods support accommodative (bottom-up) information processing. In other words, individuals in a positive mood tend to impose learned schemata on external stimuli (e.g., stereotypes), whereas individuals in a negative mood seek the detailed dissection of a stimulus.

Related versus unrelated moods. The notion that affective states help individuals adapt to their environment is based on the assumption that information processing is typically influenced by relevant moods. Thus, mood can support an individual's adaptation only if it is relevant to a judgment situation. However, studies on the effects of moods on processing have generally involved the induction of unrelated moods (e.g., Mackie & Worth 1989; Schwarz & Clore 1983). Furthermore, theorizing about the differential effects of related and unrelated moods has taken place mainly in the context of attitudinal mood effects. The mood-as- information approach postulates that mood influences on attitudes may be discounted when the irrelevance of the mood is acknowledged (cf. section on moods and opinion formation for a detailed discussion). Thus, one might expect that

[5] The approach was originally applied to explain the effects of mood on judgment. Following Schwarz and Clore (2003), I refer to the corresponding effects as "mood-as-information" to avoid any misunderstanding.

mood effects on information processing to be discounted in a similar fashion. Specifically, once an individual realizes that his or her mood state is not relevant for the current processing task, the mood-induced processing motivation may be corrected. In other words, individuals may actively correct mood influences on processing when prompted to do so (cf. Schwarz 2001). This notion received corroboration from Bless and colleagues (1990), who found that individuals in a positive mood processed information systematically when they were instructed to pay attention to the quality of arguments. The possibility of cognitive correction implies that unrelated moods should be discounted more often than related moods as individuals may notice the irrelevance of the unrelated moods for the processing task. Accordingly, compared to unrelated moods, the influence of related moods on information processing should have greater consistency.

Effects of arousal on information processing

Empirical findings. Emotional arousal is generally assumed to facilitate information processing. Studies have shown that arousing television content increases one's level of attention (Lang, Newhagen, & Reeves 1996), enhances information processing (Grabe & Kamhawi 2006; Lang, Bolls et al. 1999), and improves comprehension and recall (Grabe & Kamhawi 2006; Grabe, Yegiyan, & Kamhawi 2008; Lang et al. 1996).

Grabe and Kamhawi (2006) presented male and female participants with positively and negatively framed news stories. The results show that men reported higher arousal for negative news stories than they did for positive news stories. In contrast, women perceived positive news stories as more arousing. Accordingly, men encoded the negative messages more deeply and had a better comprehension of the negative stories compared to positive stories, whereas women encoded and comprehended the positive stories better than they did the negative stories. Similarly, Martin, Laing, Martin, and Mitchell (2005) found that arousal fostered more systematic processing of a persuasive message concerning euthanasia (i.e., strong and weak arguments could be better distinguished). The findings support the notion that arousal prompts individuals to process messages more carefully.

However, some studies have shown that high levels of arousal may impair detailed information processing. Newhagen and Reeves (1992) found that highly negative images (e.g., images of war or catastrophes) reduce the level of recall for a news story. Compared to news stories without a negative image, stories with compelling negative images increased long term memory for visual information but decreased the number of topics and the amount of narrative information remembered. Similarly, Sanbonmatsu and Kardes (1988) demonstrated that judgment heuristics had a stronger influence on one's attitude toward a persuasive message when the level of arousal was high rather than moderate. At the same time, argument strength was more important under moderate arousal compared to high arousal.

It has been argued that excessive emotional arousal diminishes information processing and that optimal levels of processing are reached at moderate arousal levels (Easterbrook 1959; Kroeber-Riel 1979). Therefore, the relationship between arousal and the depth of processing is assumed to be curvilinear. Accordingly, Lang and colleagues (Lang, Potter, & Bolls 1999; Grabe, Lang, & Zhao 2003) demonstrated that media messages that contained multiple arousing components hindered information processing. Compared to a standard presentation of a news story, a tabloid presentation (i.e., an arousing presentation style) was shown to increase the accuracy of recall for calm stories but not for arousing stories (Grabe et al. 2003). Similarly, faster pacing of television messages facilitated the recognition of semantic content for messages with calm content but hindered recognition for arousing messages (Lang, Potter, & Bolls 1999).

Mechanisms. Arousal is generally assumed to influence information processing by affecting the allocation of cognitive resources. Accordingly, emotion-eliciting stimuli activate the automatic attention system and compel the allocation of resources to the sub-processes of encoding and storage (Lang 2000; Cahill & McGaugh 1998; Phelps 2004). Storbeck and Clore (2008) propose that, similar to mood, arousal helps individuals adapt to their environment by signaling importance or urgency—an effect they name arousal-as-information. However, recall for processed content is impaired once a certain arousal threshold is exceeded. Easterbrook (1959; also cf. Clore & Schnall 2005; Pham 1992) argues that increasing arousal tends to narrow one's focus. Accordingly, high arousal may reduce the total amount of information processed given that attention is focused on the most relevant aspects of the stimulus. The narrowed focus may initially facilitate information processing by ignoring irrelevant information. However, highly aroused individuals are likely to also ignore relevant information, which can impair their processing performance.

Related versus unrelated arousal. Studies on the effects of arousal on processing have focused on the effects of both related and unrelated arousal. Formal features of political news stories, such as tabloid presentation or fast pacing, may induce unrelated arousal that, in turn, intensifies the related arousal induced by the actual content of the news messages. Depending on the level of arousal associated with the news content, the formal features of the news story may increase (if a topic is weakly arousing) or decrease message processing (if a topic is highly arousing). In a similar vein, the excitation transfer hypothesis (cf. Zillmann 1991) suggests that residual arousal, stemming from preceding affective reactions, may intensify current emotional reactions. Accordingly, unrelated and related arousal may accumulate, and the total arousal level may be perceived as a genuine reaction to the current content of thought. This process may have implications for the processing of current media content, that is, it may facilitate or hinder processing depending on the level of total arousal.

Effects of discrete emotions on information processing

Empirical findings. Research on emotions has demonstrated that affective states of the same valence may have differential effects on information processing. These studies have mainly focused on the processing effects of anger, fear and sadness. Other negative emotions, such as guilt (Bohner & Weinerth 2001) or disgust (Tiedens & Linton 2001), and positive emotions (Griskevicius, Shiota, & Neufeld 2010) have received less attention. Fear has been shown to encourage more careful processing,

whereas anger has been associated with cursory information processing. Some studies found argument strength to be more important when individuals were fearful (Bohner & Weinerth 2001; Meijnders, Midden, & Wilke 2001). Meijnders and colleagues (2001) demonstrated that fear of climate change promoted systematic processing of information. The quality of arguments in a message about an energy efficient light bulb influenced the attitude toward the light bulb for individuals in the moderate fear condition but not for individuals in the low fear condition and the control group. In other words, only fearful individuals were able to distinguish between strong and weak arguments. Similarly, fear has been shown to increase attention and learning. Brader (2005) found that a fear-inducing political ad (compared to a negative baseline ad) stimulated higher vigilance and encouraged the consideration of current issues and trait evaluations of political candidates during judgment formation. Valentino, Hutchings, Banks, and Davis (2008) found that fear increased attention to political campaigns and improved the learning of political information. Further studies show that fear not only increases processing depth but also reduces the reliance on judgment heuristics. Tiedens and Linton (2001) found that fear and hope (i.e., emotions associated with low certainty), relative to disgust and happiness (i.e., high certainty emotions), led to more careful information processing. More precisely, emotions associated with certainty increased the tendency to use judgment heuristics and rely on stereotypes and decreased the tendency to engage in systematic information processing. In contrast, emotions associated with uncertainty reduced the tendency to rely on shortcuts and promoted more careful processing of information. Along similar lines, fear has been shown to reduce the use of the party heuristic in voting decisions (Marcus & MacKuen 1993) and decrease the reliance on prior preferences (Brader 2005).

Anger is generally associated with a more cursory processing of information and a reliance on heuristics. Small and Lerner (2008) found that anger, relative to sadness, led to less elaborated information processing of a message about a welfare case. Angry individuals processed information less carefully and retained their first impression of individual responsibility, whereas sad individuals processed more systematically and corrected for their initial bias. Specifically, sad individuals favored increasing the provision of social welfare more strongly than did angry individuals. Similarly, anger has been shown to reduce the number of cues that individuals take into consideration (Lerner, Goldberg, & Tetlock 1998) and decrease the time needed to process information (Tiedens 2001). Anger has also been shown to increase the reliance on stereotypes, heuristics, and chronically accessible explanations (Bodenhausen, Sheppard, & Kramer 1994; Tiedens 2001). Bodenhausen and colleagues (1994) found that angry individuals were more likely to make judgments based on ethnic stereotypes and were more strongly influenced by source expertise than were individuals in the sadness condition or the control group.

However, findings on the effects of anger and fear on processing are not unequivocal. Nabi (1999) found that anger did not impair but rather increased information processing in comparison to fear. In this experiment, participants processed a message that contained weak arguments in favor of a proposed domestic terror legislation. Compared to individuals in the fear condition, angry individuals processed the message more carefully. Specifically, individuals in the anger condition, compared to those in the fear condition, generated more negative thoughts about the weak message, perceived the arguments to be weaker, and were less supportive of the legislation.

Much of the research on emotional influences on information processing has focused on negative emotions. Griskevicius and colleagues (2010) investigated the way in which information processing was influenced by positive emotions including anticipatory enthusiasm, contentment, attachment love, nurturant love, amusement, and awe. Participants read a persuasive message containing either weak or strong arguments regarding a university policy. The results show that the strong arguments were equally persuasive across all emotion conditions. The weak arguments were more persuasive for participants in the amusement, anticipatory enthusiasm, and attachment love conditions than those in the neutral control condition. In contrast, participants in the awe and nurturant love conditions rated the weak arguments to be significantly less persuasive than did those in the control group. Thus, positive emotions of the same valence had differential effects on the depth of information processing.

Mechanisms. Researchers have explained mood influences on information processing by appealing to the signaling function of moods. In this account, the valence of a mood has informative value for the individual and facilitates the required information processing (Schwarz 1990). Research on the processing effects of emotion has extended this perspective by arguing that emotions also have informative value and similarly influence information processing (Griskevicius et al. 2010; Nabi 1999; Tiedens & Linton 2001). The argument is based on functional emotion theories asserting that emotions have an adaptive function for humans (e.g., Frijda 1988; Lazarus 1991; Ortony, Clore, & Collins 1988). Based on these theories, emotions result from the cognitive appraisal of a situation and motivate the individual to perform appropriate actions with regard to situational demands. For instance, in a threatening situation in which it is impossible to avert the threat, an individual is likely to experience fear, which motivates him or her to escape from the threatening object. According to the cognitive appraisal perspective, specific emotions result from cognitive evaluations of a situation (e.g., valence, goal congruency, action tendency, and agency) (Ellsworth & Scherer 2003; Roseman 2001). In other words, each emotional response is associated with a given configuration of cognitive appraisals. Considering the signaling function of affective states, every dimension of appraisal may carry information and influence information processing. Consequently, in contrast to moods, emotions of the same valence may promote differing processing styles.

As demonstrated by Nabi (2002), the associated action tendency, or goal-orientation, is an important aspect of emotions. According to Roseman and colleagues (Roseman 2001; Roseman, Wiest, & Swartz 1994), every discrete emotion entails a specific action tendency that allows the individual to quickly adapt to situational demands. Action tendencies typically belong

to two categories. On the one hand, emotions may entail an appetitive motive, that is, the desire to get more of something rewarding. This first class of emotions, often labeled "approach emotions", comprises emotions such as joy, pride, or anger. On the other hand, emotions may entail an aversive motive, that is, the desire to obtain less of something punishing or harmful. This second class of emotions, often labeled "avoidance emotions", comprises emotions such as disgust, shame, or fear (Nabi 1999; Roseman 2001). Hence, differential information processing may result from an emotion-specific motivation to attend to and process a stimulus (cf. Nabi 1999, 2002). Based on this account, anger should facilitate information processing by motivating the individual to attend to a stimulus, whereas fear should hinder processing by signaling the individual to retreat. Nonetheless, Nabi's (1999, 2002) Cognitive Functional Model postulates that the relationship between emotion and processing may be more complex. In particular, the effect of emotion on information processing may be moderated by expectations about the available message. More precisely, approach and avoidance emotions should only lead to differential message processing when the individual is sure that the available message will be of use for reaching his or her motivational goal determined by the current emotion. Otherwise, approach and avoidance emotions are assumed to trigger comparable processing. However, empirical support for this notion is still weak (cf. Nabi 2002).

Other studies have shown that anger, compared to fear, does not enhance but impairs information processing. The conflicting results may be explained by the fact that certain appraisal dimensions associated with emotions can also influence information processing. Tiedens and Linton (2001; for a similar argument see Lerner & Keltner 2001) argue that certainty appraisals hinder careful information processing. Specifically, certainty appraisals associated with anger may hinder information processing by signaling to the individual that the situation is under control and that no effort has to be expended. In contrast, uncertainty appraisals associated with fear tend to promote more careful information processing.

The theoretical arguments and the empirical findings indicate that different aspects of emotions may have implications (albeit sometimes contradictory ones) for information processing. Multiple mediating processes determine the way in which emotion influences information processing. For example, anger may motivate the individual to pay attention but may, at the same time, reduce processing depth via the increase of experienced certainty. In other words, discrete emotions may have unique effects on processing by exhibiting a unique configuration of appraisals, physiological reactions, and behavioral implications. Accordingly, Griskevicius and colleagues (2010) argue that different processes may underlie the relationship between distinct emotions and information processing. For example, anticipatory enthusiasm may hinder careful information processing via increasing the reliance on internal knowledge structures. In contrast, attachment love may hinder careful processing by being associated with trust, acceptance, and reduced individual responsibility. Indeed, the authors found that, compared to the neutral control group, different positive emotions were associated with more systematic or heuristic processing, with the effects mediated by specific variables including perceived certainty or responsibility.

Related versus unrelated emotions. A further explanation of the inconsistent findings concerns the differential relatedness of emotional states. Nabi (2002) induced in an experiment related emotions given that the induction messages addressed the same topic as the persuasive message (i.e., domestic terrorism). However, in most other studies, the induced emotions were unrelated to the issue that was being evaluated (e.g., Bodenhausen, Sheppard, & Kramer 1994; Griskevicius et al. 2010; Tiedens & Linton 2001). Differential effects of anger on information processing may, hence, be explained by differences in the target object associated with the induced anger. Specifically, related anger should encourage an approach reaction toward the object to be evaluated, whereas unrelated anger should reduce the attention directed toward the experimental stimulus by focus attention on a different object or issue. In other words, related and unrelated emotions differ with regard to the object in focus of the emotion. In addition, one would expect the processing effects of emotions to be discounted (as with the effects of unrelated moods) when their irrelevance for the processing task is noticed. This relationship awaits future empirical validation.

Taken together, the findings indicate that moods, arousal, and discrete emotions have important implications for the processing of political information. Negative moods, moderate arousal, and emotions that are associated with approach and uncertainty are likely to support a careful analysis of political information. Positive moods, low arousal, and emotions associated with avoidance and certainty are likely to impair a detailed analysis of political messages, prompt a reliance on judgment heuristics and stereotypes, and diminish the importance of argument quality in judgment processes. Thus, affect is an important factor in determining how political messages are processed and judgments generated, such as whether citizens make deliberative or automatic judgments. Furthermore, affect may also influence the formation of political attitudes. The attitudinal effects of affect are discussed in the next section.

The attitudinal effects of affect

Effects of moods on opinion formation

Empirical findings. It is generally assumed that moods promote mood-congruent judgments (e.g., Bower 1981; Forgas 1995; Petty et al. 1991; Schwarz 1990). In other words, positive moods should foster the development of favorable attitudes toward a political object, whereas negative moods should nurture negative attitudes.

Several studies have demonstrated that moods may directly influence various political judgments. Isbell and colleagues (Isbell & Wyer 1999; Ottati & Isbell 1996) have demonstrated that moods may color the evaluations of politicians. In a line of experiments, the authors induced a positive or a negative mood in participants, who were then presented with messages about a political candidate. The results showed that mood was used as a judgment heuristic when systematic processing was rendered impossible by weak ability (i.e., weak political expertise) or motivation (i.e., weak political interest). Under these conditions,

positive mood promoted more positive evaluations of the politician than did negative mood. Similarly, mood has been shown to directly influence attitudes toward political institutions such as NAFTA (Rahn 2000), university policies (Albarracín & Kumkale 2003), and news stories (Wirth et al. 2010).

However, mood may also influence political judgments indirectly via coloring the thoughts of individuals. Petty, Schumann, Richman, and Strathman (1993) demonstrated both direct and indirect effects of mood in an experiment in which neutral or positive moods were induced in participants who then read a message about a new foster care program. The results show that positive mood led to more positive attitudes toward the program than neutral mood. More importantly, mood influenced attitudes directly when individuals were low in need for cognition or lacked motivation to elaborate the message. Mood influenced attitude indirectly when individuals processed the message carefully by modifying the positivity of the individuals' thoughts about the program.

Further studies corroborate the notion that mood may indirectly influence political judgments via cognition. These studies show that mood can influence the perceived likelihood of events such as an atomic war or becoming the victim of a crime (Mayer et al. 1992), focus attention on mood-congruent information and promote mood-congruent recall (Forgas & Bower 1987; Bower 1983), and foster the development of mood-congruent interpretations and attributions (Forgas & Locke 2005).

Thus far, only the assimilative effects (i.e., congruence effects) of mood on judgments have been discussed. Nonetheless, moods may also cause affect-incongruent judgments. In a study on mood influences on the evaluation of political candidates, Isbell and Wyer (1999) demonstrated that individuals who were sufficiently motivated to analyze candidate information produced mood-incongruent judgments. The authors interpreted these results to represent a cognitive overcorrection of presumed mood influences when individuals processed information systematically. Similarly, Ottati and Isbell (1996) found that individuals with low political expertise or low recall about candidate information produced mood-congruent candidate evaluations, whereas individuals with high expertise or high recall produced mood-incongruent evaluations.

Mechanisms. Different mechanisms have been proposed to account for mood-congruency effects on judgments. Depending on the amount of processing applied by an individual, mood-congruency effects are regarded as a consequence of the mood-as-information heuristic or affective priming (Forgas 1995; Petty et al. 1993). Low motivation and/or the ability to process political information promote superficial processing of information and the reliance on heuristics. Several cognitive heuristics, such as relying on the expertise of the communicator or the opinion of the majority, have been proposed (e.g., Lau & Redlawsk 2001). More importantly, individuals may also rely on their feelings to evaluate the target of political judgment. For example, a citizen may simply rely on his or her gut reaction toward a politician when being asked for an opinion. The main prerequisite for mood effects is the (mis-)attribution of the current mood to the object under consideration (Clore & Gasper 2000; Schwarz 1990). The individual must consider his or her mood to be related to the object under evaluation. According to the mood-as-information approach, individuals generally link their current mood automatically to their current mental content when there are no concrete cues of their irrelevance (Clore, Gasper, & Gavin 2001). Influences of unrelated moods are believed to be a frequently occurring phenomenon (e.g., Schwarz 1990; Schwarz & Clore 1988). Thus, not only related but also unrelated moods may frequently influence political judgment processes despite their irrelevance to the concrete judgment at hand.

When individuals process information carefully, they do not rely on heuristics but evaluate the arguments in favor of and against a politician or an issue position. Hence, careful processing prevents the use of the mood-as-information heuristic. However, detailed elaboration does not impede mood influences mediated by other mechanisms. In fact, studies have shown that affective priming (or, more precisely, mood priming) may produce mood-congruent judgments under high elaboration. When information is processed carefully, moods may prime (i.e., activate) cognitive content of the same valence. In other words, positive mood should activate positive thoughts and negative mood should activate negative thoughts (e.g., Bower 1981; Forgas & Bower 1987). The mood priming approach is based on the notion that individuals come to a decision not by considering all relevant information (given limitations of their cognitive resources) but only the information that is currently accessible in their memory. By activating mood-congruent cognitive content, mood influences the sample of information used to generate a political judgment (cf. Kühne et al. 2011). Consequently, positive mood promotes more positive attitudes, whereas negative mood promotes negative evaluations.

The mood-as-information heuristic and mood priming are generally seen as operating during different stages of the judgment process. Specifically, the mood-as-information heuristic is considered a judgment heuristic that is applied *after* information processing, when the final evaluation is formed. Mood priming, however, is assumed to operate mainly *during* information processing (Clore & Parrott 1991; Forgas 1995; Schwarz & Clore 1988). In fact, mood priming involves a series of sub-processes that operate during different stages of information processing (Bower 1981; Forgas & Bower 1987; Schwarz & Clore 1988). First, moods may promote selective attention and encoding, that is, individuals are likely to turn to affectively congruent information and process it for a longer duration than for mood-incongruent stimuli. Second, moods promote the selective recall of mood-congruent information. Third, moods influence the interpretation of ambiguous situations by activating mood-congruent categories and concepts that are used during information processing.

All of the above remarks address the question of how moods can produce mood-congruent judgments. However, how might mood-incongruent judgments be explained? One might assume that mood-incongruent judgments are not so much a consequence of mood itself but, rather, cognitive correction processes applied when the individual notices the influence of mood on judgment. Isbell and colleagues (Isbell & Wyer 1999; Ottati & Isbell 1996) explain incongruence effects with their on-line affect-as-information hypothesis. According to this account, it is

typical for moods to pose assimilative effects on judgments for individuals with low processing efficiency who are unable to detect mood influences. In contrast, individuals with high processing efficiency should be able to identify biasing mood effects and, in turn, correct them (also cf. Albarracín & Kumkale 2003; Berkowitz et al. 2000). However, if individuals overestimate the extent of their mood biases, correction processes may result in mood-incongruent attitudes. In other words, mood influences may be overcorrected such that the attitudes that result are opposite in valence compared with the current mood state. Although correction processes have been primarily discussed within the mood-as-information paradigm (e.g., Albarracín & Kumkale 2003; Schwarz & Clore 1983), some have proposed the possibility of discounting taking place during mood priming when the individual notices the absence of a causal link between the mood and the judgment (Clore & Parrott 1991; Forgas 1992; Martin 1986). Thus, when the individual realizes that his or her thoughts have been biased by the current mood, he or she may discount the primed concepts. In this way, mood-incongruent effects may arise when a judgment has been primed by moods.

Related versus unrelated moods. Research on mood effects has typically relied on the experimental induction of unrelated moods. This procedure is popular for two reasons. First, the procedure prevents the confounding of cognitive and affective effects on judgments (cf. Clore, Gasper, & Gavin 2001): By keeping the stimulus information about the target object constant and varying only the induced mood, the true effects of mood can be identified. Second, the mood-as-information approach and the mood priming approach assume that related and unrelated moods have similar effects on judgments (Clore & Storbeck 2006; Forgas 2002; Schwarz 1990).

However, as already discussed, several studies within the mood-as-information paradigm have demonstrated that mood influences on judgments may be diminished or eliminated when the irrelevance of the existing mood is noticed (Albarracín & Kumkale 2003; Isbell & Wyer 1999; Keltner, Locke, & Audrain 1993; Schwarz & Clore 1983). For instance, Isbell and Wyer (1999) demonstrated that the influence of unrelated mood on the evaluation of a political candidate was corrected when individuals were motivated—because of situational demands or their partisanship—to accurately examine the candidate. In fact, only weak partisans with a low motivation to evaluate the politician were subject to a misattribution of incidental mood.

As already noted, the main prerequisite for mood effects is the (mis-) attribution of the current mood to the attitude object. A high motivation to form an accurate judgment and high processing capacity (Albarracín & Kumkale 2003; Berkowitz et al. 2000; Isbell & Wyer 1999; Ottati & Isbell 1996) allow the individual to notice and correct mood influences. The possibility of mood discounting implies that related and unrelated moods may differ in their likelihood of being attributed to an object, with related moods being attributed to judgment objects more often than unrelated moods. On the one hand, related mood is unlikely to be discounted as it has indeed been caused by the object under consideration. In this case, high ability and motivation to process information should not preclude the (correct) mood attribution. On the other hand, unrelated mood should be discounted when the individual forms a careful judgment and notices the misattribution.

What about the differential priming effects of related and unrelated moods? Generally, both related and unrelated moods are assumed to prime judgments (Forgas 1995, 2002). However, the discounting of concepts primed by unrelated moods may also take place during mood priming (Clore & Parrott 1991; Forgas 1992; Martin 1986) and related moods may lead to mood-congruent judgments more regularly than do unrelated moods. Furthermore, it is reasonable to expect mood priming effects to be stronger for related mood. First, related mood is associated with cognitive content that is relevant to the judgment. Accordingly, related mood promotes stronger priming effects because it first activates cognitions relevant to the judgment (i.e., information that can be used to form the judgment). In contrast, there is no intrinsic relationship between unrelated mood and the mental content during judgment. Thus, unrelated mood is likely to activate irrelevant as well as relevant cognitions and mood priming effects are likely to dissipate. Second, unrelated mood is likely to be of lower intensity than related mood as unrelated mood is, by definition, triggered by earlier incidents and not by the object under current consideration. Thus, the activation impulse of unrelated mood should be weaker.

All in all, the evidence suggests that unrelated moods, compared with related moods, should be discounted more often and associated with weaker priming effects. Mood discounting requires the individual to notice the incorrectness of the mood attribution. Accordingly, related and unrelated moods may be similar in effect when cognitive capacity and processing motivation are low. However, with increasing capacity and motivation, it becomes more likely for unrelated mood to be discounted, with only related mood used as a judgment heuristic. At the same time, both related and unrelated moods may prime cognitive content when processing intensity is high. However, some studies indicate that mood discounting may also take place during mood priming, which favors the influence of related mood under high message elaboration.

Effects of arousal on opinion formation

Empirical findings. High arousal has generally been found to foster the development of extreme and polarized judgments (e.g., Giesen & Hendrick 1974; Gorn, Pham, & Sin 2001; Mano 1992; Mintz & Mills 1971). Giesen and Hendrick (1974) induced high and low arousal in participants who then heard a taped speech on the problems associated with the use of pesticides. The results show that highly aroused individuals perceived pesticides to be a bigger problem than did individuals in the low arousal condition.

As with mood discounting, the discounting of arousal influences may occur when the individual recognizes the irrelevance of arousal (e.g., Sinclair et al. 1994; Zillmann, Johnson, & Day 1974). Sinclair and colleagues (1994) manipulated both affect (i.e., valence), using a priming procedure, and arousal, by engaging half of the participants in physical exercise and instructing the other half to sit for the same duration. Immediately after exercising or sitting, or after a 2-minute delay, participants completed measures concerning their emotional state. The individu-

als who were more aroused reported more extreme prime-consistent affect when the judgment was delayed. Participants who indicated their affective state after a delay misattributed their arousal to their affective state, whereas participants who indicated their affect immediately correctly attributed arousal to the exercise. Similarly, Zillmann and colleagues (1974) found that unrelated arousal increased aggressive behavior only when the arousal could not be correctly attributed to its cause. A correct attribution inhibited arousal effects on aggressive behavior.

Not only can arousal influence judgments directly, arousal may also impact attitude extremity through the activation of polarized cognitive concepts. Stangor (1990) showed that aroused individuals interpreted information about a negatively depicted person as more negative than did non-aroused individuals. In another experiment, aroused individuals produced more extreme positive traits to describe moderately positive celebrities. Similarly, aroused individuals produced more highly negative traits in the evaluation of negative judgment objects.

Arousal may also influence judgments by biasing the interpretation of affective states. According to Clark and colleagues (1984), arousal activates memory content with a similar level of arousal which, in turn, influences the interpretation of affective states. For example, high arousal may prompt individuals to interpret a negative affective reaction as anger (a high arousal emotion), whereas low arousal promotes the interpretation of the same negative affective reaction as depression (a low arousal emotion). Clark and colleagues corroborated this result in two experiments. Taken together, the findings indicate that arousal promotes emotion-specific priming (cf. next section) by affecting the interpretation of affective states. For example, during judgment formation, high arousal may promote a reliance on anger-related thoughts and low arousal may promote a reliance on depression-related thoughts.

Further studies indicate that arousal influences not only attitude extremity. Grabe and colleagues (2003) investigated the effects of arousing news content (i.e., related arousal) on the evaluation of the news. The results show arousing news stories, compared to non-arousing news stories, to be evaluated as being less informative and more interesting and the covered situation as being more threatening. Although attitude change was not directly assessed in these studies, the findings suggest that arousing news content may be less persuasive because recipients regard it as less reliable. Mano (1994) investigated the influence of arousal on risk-taking behavior. The results show that higher arousal led individuals to be less willing to pay for insurance to protect themselves from a potential loss but to be more willing to pay for gambles. However, high negative affect (i.e., unpleasantness and high arousal) prompted individuals to avoid risks and be more willing to pay for insurance. Therefore, arousal and valence may interact during decision-making. Strong positive affect indicates that a situation is highly benign, whereas strong negative affect signals danger.

Mechanisms. As with the mood-as-information hypothesis (e.g., Schwarz 1990), the arousal-as-information hypothesis (Storbeck & Clore 2008; also cf. Schachter & Singer 1962) posits that arousal informs judgment when the arousal is attributed to the object under consideration or to an emotional reaction toward the object. Hence, arousal may influence the perceived intensity of emotional reactions and the extremity of judgments. As with mood heuristics, the influence of arousal can be discounted when its irrelevance to a judgment is recognized. However, in contrast to mood, arousal influences not the valence but the extremity of judgments by signaling importance or urgency. In other words, the arousal heuristic informs individuals as to how *strongly* they feel about something. Importantly, attitude importance and extremity have been found related in the context of various political issues (e.g., social welfare, military spending, and women's rights) (Liu & Latané 1998). Thus, arousal may promote more extreme political attitudes by signaling to the individual that an issue is of high importance.

Arousal has also been argued to influence attitude extremity through affective priming (Clark 1982; Clark, Milberg, & Erber 1984; Stangor 1990). Clark (1982) and Stangor (1990) posited that arousal should prime extreme concepts within the associative network (i.e., concepts that are highly positive or negative). As with mood priming, arousal may activate affectively congruent concepts. However, congruence in arousal priming refers not to the valence of concepts but rather to their extremity or importance. The arousal-extremity model (cf. Hansen & Krygowski 1994) suggests that arousal at the time of encoding should favor the retrieval of more extreme categories of information from memory given that more extreme schemata tend to be associated with higher levels of emotions and arousal.

Related versus unrelated arousal. The theoretical approaches of explaining attitudinal effects of arousal parallel the approaches in mood research. Specifically, arousal may be used as affective information during judgment formation or prime cognitive content. Empirical corroboration stems primarily from studies in which unrelated arousal was induced by caffeine, music, or false feedback (e.g., Mintz & Mills 1971; Giesen & Hendrick 1974; Gorn et al. 2001). Nevertheless, related arousal has also been demonstrated to impact political judgments (e.g., Grabe et al. 2003). More important, the excitation transfer hypothesis (cf. Zillmann 1991) states explicitly that unrelated and related arousals may add up and produce an overly intense reaction toward an object. Apparently, individuals have trouble discriminating between related and unrelated arousal. Still, individuals have been found to have the ability to recognize the irrelevance of unrelated arousal and discount its influence during judgment formation (Sinclair et al. 1994; Zillmann et al. 1974). As with mood discounting, the influence of unrelated arousal should be discounted more often than that of related arousal. Following research on mood effects, one would expect this discounting to take place when unrelated arousal is used as a judgment heuristic and during arousal priming. In contrast, the relationship between related arousal and attitude extremity is expected to be more stable.

Effects of discrete emotions on opinion formation

Empirical findings. As discussed above, emotions exhibit unique patterns of appraisal and carry more information than moods, which mainly consist of their valence. Consequently, the influence of an emotion on the formation of political opinion comes not only from the valence but also each appraisal dimen-

sion of the emotion. Emotion-specific effects on attitudes have been corroborated in multiple studies. One line of studies addresses the differential effects of anger and fear. Lerner, Gonzalez, Small, and Fischoff (2003) found that related fear about terrorism increased risk estimates and decreased support for vengeful policies. In contrast, anger decreased risk estimates and support for conciliatory policies while increasing support for vengeful policies. Similarly, Nabi (2003) demonstrated that related anger and fear about drunk driving influenced information seeking and attitudes. Angry individuals were more interested in retributive information and favored retributive policies. In contrast, fearful individuals preferred protective information and protective solutions. Similarly, fear has been shown to decrease support for war (Huddy et al. 2005; Schoen 2006) and enhance support for isolationism (Huddy et al. 2005). The findings indicate that emotions are associated with a tendency to interpret information and act upon it. Fear leads individuals to assess situations as hazardous and motivates them to seek protection. Anger signals that a negative situation is controllable and motivates the individual to punish the culprit.

Further studies have investigated the differential effects of anger and sadness on attitudes. Anger has been associated with more causal attributions (Lerner, et al. 1998; Small, Lerner, & Fischoff 2006). Specifically, anger fosters the generation of thoughts concerning the causes of political events, where sadness leads to a focus on the consequences of events. Furthermore, anger can promote a preference for punitive and retributive policies (Gault & Sabini 2000; Nerb & Spada 2001) and decrease support for social welfare (Small & Lerner 2008) and supportive policies (Nerb & Spada 2001). In contrast, sadness is generally associated with a preference for social welfare and supportive measures.

Raghunathan and colleagues (Raghunathan & Pham 1999; Raghunathan, Pham, & Corfman 2006) investigated the differential effects of anxiety and sadness. Compared to anxious individuals, sad individuals showed a higher preference for high-risk options. According to the authors, the induced emotions were associated with specific goals that influenced the participants' judgments. Sad individuals were more likely to take a risk as their emotions motivated them to compensate for a loss, whereas anxious individuals, being motivated to avoid potential losses, chose more secure options.

Some studies have investigated the way in which discrete emotions are triggered by news reports and subsequently influence political opinion. Nerb and Spada (2001; also cf. Nerb 2000) presented participants in a series of experiments with short news reports about an environmental disaster. The authors manipulated the degree of responsibility that was attributed to the actor that caused the disaster in order to induce anger or sadness in the participants. The news report that induced anger promoted support for retributive action, whereas the news report that induced sadness promoted supportive action. Similarly, Kühne and Schemer (2011) found that an anger-framed news story about a traffic accident, compared to a sadness-framed news story, increased the preference for retributive policies and the behavioral intention to punish traffic offenders. Apparently, news frames may trigger discrete emotions that influence political judgments. DeSteno and colleagues (2004) investigated the interaction of emotional states and news frames during the process of judgment about a tax policy. The authors found that sad participants were more likely to be persuaded by a sadness-framed message in favor of tax increases than neutral participants. Sad participants were also more likely to indicate that they would vote for the tax proposal. The findings imply that news reports can influence political judgments by triggering discrete emotions and that news frames become more persuasive when they appeal to the emotional state of the recipient.

Mechanisms. Lerner and colleagues (Lerner & Keltner 2000; Han et al. 2007) have proposed a framework to explain the persuasive effects of discrete emotions on judgments. Their Appraisal Tendency Framework (ATF) is based on appraisal theories and functional approaches to emotion and postulates that discrete emotions arise as a response to a specific evaluation of a situation. The induced emotional state exhibits a specific pattern of appraisal and is associated with the motivation to follow an adequate course of action. This first step is termed cognition-to-emotion. In a second step, termed emotion-to-cognition, emotions give rise to "an implicit cognitive predisposition to appraise future events in line with the central appraisal patterns that characterize the emotions" (Han et al. 2007, p. 160). Emotions entail cognitive evaluations that are projected onto subsequent judgments and motivate the individual to act accordingly (also cf. Raghunathan & Pham 1999). In other words, emotions increase the tendency to evaluate situations in an emotion-congruent way and motivate the individual to act accordingly. A related proposition stems from DeSteno and colleagues (2004) who argue that discrete emotions influence likelihood judgments by signaling to individuals that emotion-congruent events are more likely. For instance, a fearful individual tends to perceive the world as dangerous and threatening events to be very likely.

Given that emotions result from a combination of multiple appraisals, it follows that emotions may convey more complex information than moods or arousal, which mainly provide information about valence and importance, respectively. However, the cognitive complexity of emotions also reduces their sphere of influence. Specifically, the influence of an emotion is limited to the spheres of judgment related to the dimensions of appraisals associated with that emotion (Han et al. 2007). Any carryover requires a match between the main appraisal dimensions of the emotion and the salient cognitive dimensions of the judgment.

Related versus unrelated emotions. Emotion-specific effects on judgment have been investigated with regard to related and unrelated emotions. Related emotions have been induced by instructing individuals to think about emotional aspects of an issue (Lerner et al. 2003; Small et al. 2006) and by presenting emotional articles (Nerb & Spada 2001; Nerb 2000) or newscasts (Meijnders et al. 2001). Unrelated emotions have been induced by instructing individuals to reproduce emotion-inducing life events (Small & Lerner 2008) or by presenting emotional stories about an unrelated issue (DeSteno et al. 2004; Keltner, Ellsworth, & Edwards 1993). Emotion-specific effects on opinion formation have been demonstrated for both related and unrelated emotions. Theories such as the ATF propose that

related and unrelated emotions have the same effect on judgment (cf. Han et al. 2007). However, as with theories about mood effects, Lerner and Keltner (2000) argue that certain boundary conditions are required for such effects to arise. First, the goal attainment hypothesis suggests that appraisal tendencies will be deactivated when the emotion-related goal is attained. For example, Goldberg, Lerner, and Tetlock (1999) found that anger promoted punitive judgments when the culprit of the anger-inducing crime had not yet been punished. However, when the culprit had already been punished, anger no longer promoted more punitive judgments. Inducing unrelated emotions by instructing individuals to remember emotional life events may, thus, promote emotional reactions that are more likely to be discounted because the emotional goals associated with past events tend to be already attained. In contrast, emotional goals associated with related emotions (i.e., emotions related to the current issue) are likely to be still active during judgment formation.

Second, the cognitive awareness hypothesis asserts that appraisal tendencies will be deactivated when individuals realize that their incidental emotions are irrelevant to the judgment (also cf. DeSteno et al. 2000). As with the mood discounting hypothesis (Schwarz & Clore 1983), unrelated emotions should be discounted when their irrelevance to a judgment is acknowledged, and related emotions are more likely than unrelated emotions to influence judgment processes. This notion has been corroborated by Lerner et al. (1998), who showed that holding individuals accountable for their judgments reduced the influence of unrelated anger on the punitive intensity of their judgments. When held accountable for their judgments, individuals were more motivated to generate valid judgments and corrected for the influence of unrelated anger. Similarly, DeSteno et al., (2000) found that individuals with high need for cognition corrected for influences of unrelated emotions on likelihood estimates, whereas individuals with low need for cognition formed estimates that were consistent with their emotional state.

All in all, the findings on the attitudinal effects of emotions on judgment parallel the effects of moods, that is, emotions generally promote assimilative judgment. In contrast to moods, however, emotions convey not only information about the valence of an event but also multiple cognitive assessments, such as certainty or agency. Furthermore, emotional influences on judgment may have no attitudinal impact when the emotional goal has already been attained or the irrelevance of the emotional state is acknowledged.

The informational value of related and unrelated affects

The reviewed studies and theories indicate that both unrelated and related affects may have a substantial impact on the formation of political opinions. First, affect influences the way in which political information is processed. Happy mood, low and intense arousal, and emotions such as anger and disgust have been found to inhibit a detailed analysis of information and promote a reliance on preexisting preferences, judgment heuristics and stereotypes. In contrast, negative mood, moderate arousal, and fear are associated with a careful, bottom-up analysis of political messages, which enables individuals to assess the quality of arguments and generate counter-arguments. Second, moods, arousal, and emotions influence the nature of the political attitudes formed. Happy mood has been shown to promote positive attitudes, whereas negative mood promotes negative attitudes. Similarly, discrete emotions give rise to emotion-congruent judgments. Fear, for example, prompts the individual to perceive a situation as risky, whereas anger signals that a situation is under control. Arousal has been demonstrated to impact political judgment by influencing the extremity of judgments. More precisely, the extremity of the affective state carries over to the political attitude being formed.

The findings indicate that affect has mainly assimilative effects on political judgments: Individuals typically perceive their affective state as a reaction to current mental content and, in turn, act according to the implications of their affective state. According to the mood-as-information approach (e.g., Schwarz 1990), assimilative effects result from the informational value that affective states convey to the individual: Affect serve as rapid indicators of the way in which messages should be processed or provides information about the nature of political objects. By conveying information rapidly, affect facilitates a quick adaptation to the demands of the environment. The reviewed mechanisms of affective influence suggest that affect typically conveys information through two different processes. On the one hand, individuals may directly rely on their feelings when forming political judgments. On the other hand, affect may prime affect-congruent cognition. In other words, affect may also promote adaptation by influencing the cognitive concepts used during judgment formation.

Depending on the structure of the particular affective state, different information may be conveyed to the individual. Both mood and arousal have limited cognitive content and can be reduced to experienced valence and activation, respectively. Mood provides information about the positive or negative valence of things, whereas arousal provides information about importance. In contrast, emotions arise from specific configurations of cognitive appraisals. Emotions hence carry more information than moods or arousal and exhibit a cognitive specificity. At the same time, the cognitive structure of emotions reduces their sphere of influence. First, individuals are usually aware of the cause of an emotion and are, therefore, less likely to misattribute emotions compared to moods and arousal. Second, emotions may only color judgment if there is a fit between the cognitive structure of the emotion and that of the judgment. In other words, the carryover necessitates a match between the main appraisal dimensions of the emotion and the salient cognitive dimensions of the judgment.

Considering the informational value of affect, empirical findings and the theoretical models both suggest that related and unrelated affects should have a similar impact on judgment formation because they do not differ with regard to their experiential quality. Additionally, related and unrelated affects are assumed to operate through the same processes. However, there exists one major difference between related and unrelated affects: Unrelated affect can be discounted more easily than relat-

ed affect. Individuals typically link their current affect (whether related or unrelated) automatically and implicitly to the currently experienced mental content without reflecting on the plausibility of such an attribution. This feature allows affect to facilitate rapid adaptations to current environmental demands. However, given ample cognitive resources and motivation, individuals may reconsider this implicit association and notice the true relevance of the affective state to the respective judgment. Consequently, during judgment formation, unrelated affect, which is not intrinsically linked to the judgment, should be discounted (i.e., lose its informational value) more often than related affect. Similarly, the validity of a cognitive assessment primed by unrelated affect should be doubted more regularly. In other words, affect, like cognitive information, may be used as a basis for judgments but may also be regarded as incorrect or useless for a specific judgment. This pattern appears to apply for moods, arousal, and emotions. Hence, returning to the question of whether affective influences are determined by the experiential quality or the cause of affect, it appears that the subjective experience of affect is the more decisive determinant of affective influences, whereas one's awareness about the causes of an affective state may moderate the influence.

The reviewed approaches that consider affect discounting (Schwarz 1990; Storbeck & Clore 2008; Lerner & Keltner 2000) suggest that the assimilative effects of related and unrelated affects are the default procedure and that affect discounting requires additional cognitive processing and reflection. Thus, affect should influence political judgments regardless of its relatedness when individuals have limited processing resources (i.e., low motivation and/or ability). However, affective relatedness should become more important with the increase in processing resources. Mood research has also demonstrated that correction processes are often imprecise. Apparently, individuals have trouble in determining the influence of affect on their judgment. Hence, when affective influences are detected, individuals tend to overcorrect them, which results in incongruent outcomes.

It should be noted that the present discussion has focused mainly on the differential attitudinal influences of related and unrelated affects. However, the same arguments should apply also to the processing effects of affect. Specifically, to the extent that individuals do not question the relevance of their affective state, affect may guide information processing. However, when individuals realize the irrelevance of their affect, they may choose to abandon the processing style prompted by the affect.

All in all, the reviewed studies indicate that emotion is an important factor influencing political judgment. Individuals do not rely only on cognitive information (i.e., acquired knowledge and beliefs) but also on their affective reactions when making decisions about political issues. The corpus of empirical findings and theories about affective influences substantiates the notion that the classical rational choice paradigm has a one-sided view on political decision-making (cf. Marcus, Neumann, & MacKuen 2000). In particular, citizens do not exclusively base their decisions on arguments or the cognitive computation of the expectancy values of different options.

This review emphasizes the processes underlying affective influences on judgment. To date, there exist multiple theoretical approaches that address these processes. However, further research is necessary to gain a better understanding about the interplay of higher cognition and affect. A clear understanding of the underlying processes is crucial and will increase the predictive power of models that treat political decision-making as a mainly cognitive process. Furthermore, knowledge about these processes is necessary for a normative assessment of affective influences. Traditionally, it has been assumed that political reasoning should be protected from affective influences (cf. Marcus 2000). However, current findings indicate that affect is not always detrimental to reasoning but may even enhance rational decision-making (e.g., Damasio 1994; Blanchette & Richards 2010; Marcus et al. 2000). A better understanding of cognitive and affective decision-making will, hence, support more informed judgment about the desirability of affective influences.

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