

## The Logic of Feeling

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The contribution of the feelings-as-information hypothesis to our understanding of the role of affect in judgment and decision making is discussed. Basic principles and regularities in how affective feelings guide judgments and decisions are then identified. Based on these principles and regularities, it is argued that the role of feelings in judgment and decision making may be more adaptive than has been assumed in most academic circles. This adaptivity transpires (a) in the variety of goal-relevant signals that feelings convey, (b) the flexibility with which feelings are interpreted, (c) the judgmental properties of feelings, and (d) the selectivity with which feelings are invoked. It is speculated that affective feelings may tap into a separate system of judgment and decision making with its unique strengths and weaknesses.

A man of intelligence feels what others can only know.  
—C.-L. de S. Montesquieu (1892, p. 135)

Charles–Louis de Secondat, the French nobleman better known as Montesquieu, was not only a great political philosopher; he was also a shrewd intuitive behavioral scientist. In the latter capacity, he strongly believed in the power of feelings in judgment. In the aforementioned quote from his *Essay on the Causes Affecting Minds and Characters* (Montesquieu, 1892), he seemed to imply the following: (a) that feelings and descriptive knowledge provide alternative forms of intelligence, and (b) that it is feelings that may be the superior form.

Norbert Schwarz's outstanding body of work speaks extensively to the first proposition. Consumer psychologists, marketing researchers, and behavioral decision theorists (not to mention economists) have historically defined the notion of information in judgment and decision making rather narrowly. To them, information has traditionally meant beliefs, perceptions, and declarative knowledge structures (e.g., attributes, features, benefits, traits, stereotypes, etc.). Schwarz's major contribution has been to expand the notion of information significantly and demonstrate that judgments and decisions also involve inputs that are more experiential and phenomenal in nature. He first demonstrated this with affective feelings (e.g., moods, emotions, affective reactions) in his work on "feelings-as-information" with Clore (Schwarz, 1990; Schwarz & Clore, 1983; Schwarz & Clore,

1988; Schwarz & Clore, 1996). He then demonstrated this with cognitive feelings (e.g., accessibility, fluency, familiarity) in his more recent work on the ease-of-retrieval effect (e.g., Schwarz et al., 1991) and related work on metacognitive feelings (Schwarz, this issue). Overall, his findings intimate a close connection between the phenomenology of feeling and the rules of thinking. His earlier work on feelings-as-information suggested that feelings are interpreted through some thinking rules (e.g., "I feel good about it: I must like it"); his more recent work suggests that feelings also convey metacognitive information about thinking processes (e.g., "Retrieving examples feels difficult: I must know little about this subject").

With regard to Montesquieu's (1892) second proposition (about the superior "intelligence" of feelings), Schwarz appears mostly agnostic. He has carefully eluded any normative discussion of the relative merits of feelings versus more descriptive inputs in judgments and decisions. Others, however, have been less reserved. It is widely held in many academic circles that affect, feelings, and emotions are mostly detrimental to sound judgments and decisions (see Elster, 1999). The prejudice against feelings and emotions in judgments and decisions has deep and ancient roots. In Western cultures, it was fueled for centuries by the Cartesian assumption that mind and body could be separated (see Damasio, 1994, for a discussion)—an assumption that Montesquieu explicitly rejected. To quote a very famous statement from another French philosopher, Blaise Pascal, "The heart has its reasons of which reason knows nothing" (1662/1942, p. 182).

Focusing on feelings associated with affective and emotional experiences, I review selected findings from the feelings-as-information literature and other literatures, and dis-

cuss what these findings could mean regarding the normative status of feelings in human judgment and decision making. These findings are organized in terms of basic principles of how feelings seem to inform judgments and decisions. Although feelings may not be, as implied by Montesquieu (1982), a necessarily superior basis for judgments and decisions, I argue that the reliance on feelings is more adaptive than currently assumed in most academic circles. This adaptivity transpires (a) in the variety of relevant signals that feelings convey, (b) the flexibility with which feelings are interpreted, (c) the judgmental properties of feelings, and (d) the selectivity with which feelings are invoked. These findings lead me to speculate that affective feelings may tap into a separate system of judgment and decision making with their unique strengths and weaknesses.

### A PREAMBLE ON FEELINGS, EVALUATIONS, AND FEELINGS-AS-INFORMATION

Whereas behavioral decision research is only beginning to realize the importance of feelings in human judgment and decision making (see Slovic, Finucane, Peters, & MacGregor, 2002), other disciplines, including ours, came to this realization a long time ago. It has long been known to social psychologists and to consumer researchers that feelings associated with a target—the attraction exerted by a charismatic leader, the frustration caused by a defective product, or the pleasure induced by a Rachmaninoff symphony—are often incorporated into a summary evaluation of the target. This phenomenon has been shown, decades ago, with feelings experienced as a genuine integral affective response to the target (e.g., Abelson, Kinder, Peters, & Fiske, 1982), as well as feelings arising incidentally from the person's mood state (e.g., Isen, Shalcker, Clark, & Karp, 1978).

What has been less clear is the mechanism by which the feelings are incorporated into the evaluation. One possible mechanism is that the feelings enter the evaluation directly by mere association. Consistent with the idea of classical conditioning, a close proximity between a target and a feeling experience may result in the evaluative meaning of the feelings (mostly their valence) being carried over to the target (e.g., Gorn, 1982). In this mechanism, sometimes called *affect transfer*, feelings are presumed to influence evaluations in a noninferential, “automatic” fashion. Another possibility is that the feelings enter the evaluation indirectly by changing the person's perceptions or beliefs about the target (e.g., Fishbein & Middlestadt, 1995). For instance, feelings of frustration toward a service provider might reinforce perceptions that “they are not reliable” or trigger beliefs that “they don't care about the customer.” It is these perceptions and beliefs—not the feelings that triggered them—that are then summarized and integrated into the overall evaluation. This type of mechanism is consistent with a major explanation of incidental mood-congruency effects on evaluations: Evaluations tend to be assim-

lated toward people's incidental mood states because these states cue mood-consistent materials in memory, which then color people's perceptions of the target (Isen et al., 1978).

One of Schwarz and Clore's (1983) major contributions was to articulate and demonstrate a third mechanism. Building on an idea advanced earlier by Wyer and Carlston (1979), they suggested that people use their momentary feelings as actual sources of information. People interpret pleasant feelings as evidence of liking, satisfaction, well-being, and so on, and unpleasant feelings as evidence of disliking, dissatisfaction, misery, and so on. In doing so, they may fail to recognize that sometimes the actual source of the feelings is not the target being evaluated but some incidental factor (e.g., good weather), which explains the mood-congruency effect on evaluations. This general idea became known as the “feelings-as-information” hypothesis (Schwarz, 1990) and the specific mechanism involved was called the “how-do-I-feel-about-it?” heuristic (Schwarz & Clore, 1988). Unlike the affect-transfer mechanism described earlier, the “how-do-I-feel-about-it?” heuristic is inferential, not purely associationistic. That is, people are assumed to reflect on what their feelings mean for the judgment to be made, not just rely on these feelings automatically. Unlike the second mechanism mentioned earlier, in the “how-do-I-feel-about-it?” heuristic feelings are assumed to enter the judgment directly, not through the activation of feeling-consistent cognitions.

Although identifying the “how-do-I-feel-about-it?” heuristic was a major contribution in and of itself, I believe that the main contribution of the feelings-as-information hypothesis lies in the very idea that feelings could be treated as sources of information. This idea is revolutionary in three respects. First, it is an extremely compelling metaphor. As is discussed in the next section, this metaphor has enormous explanatory power—explanatory power that goes beyond the “how-do-I-feel-about-it?” heuristic. Second, this idea makes clear predictions as to the kind of mental operations that the reliance on feelings in judgment and decision making involves. For instance, if feelings operate just like any other sources of information, their influence on judgments and decisions should depend on the same kind of factors that are known to moderate the influence of other types of inputs such as accessibility and diagnosticity (Feldman & Lynch, 1988) or goal relevance (Pham, 1998). Similarly, if judgment and decision making involves the metacognitive assessment of beliefs and thoughts, feelings should also be amenable to metacognitive reflections (Avnet & Pham, 2004). Finally, the idea of feelings as sources of information is revolutionary in that it provides a radically different perspective on the role of affect, feelings, and emotion in judgment and decision making. Whereas feelings and emotions have historically been depicted as detrimental to sound judgment and decision making, regarding feelings as information opens the door for a more positive, functional view of affect in human judgments and decisions (e.g., Damasio, 1994; Pham, Cohen, Pracejus, & Hughes, 2001).

## PRINCIPLES OF FEELING

Leveraging the feelings-as-information metaphor further, I will now attempt to sketch the basic principles through which feelings seem to inform judgments and decisions. As shall be seen, there appears to be a logic in how feelings guide judgments and decisions. This logic suggests that feelings (and affect and emotion) may play a more adaptive role in judgment and decision making than was previously assumed.

### The Multiple Meanings of Feelings

Although the feelings-as-information hypothesis has historically been associated with the “how-do-I-feel-about-it?” heuristic as an explanation of mood-congruent evaluations, this general hypothesis can account for a broader class of phenomena. Momentary affective feelings are used to make a wide range of inferences and judgments, not just simple judgments of liking–disliking. (As reviewed in Schwarz’s article in this issue, additional inferences are drawn from cognitive feelings, which are not discussed here.)

*Direction of attitudes and preferences.* In the “how-do-I-feel-about-it?” heuristic, people use the valence of their feelings to infer the direction of their attitudes and preferences. If I feel good about something, I must like it; if I feel bad, I must not like it. This is the most intuitive inference people can draw from their feelings, and probably the one most commonly drawn. This type of reasoning has been observed in a variety of evaluative judgments (e.g., Gorn, Goldberg, & Basu, 1993; Schwarz & Clore, 1983; Schwarz, Strack, Kommer, & Wagner, 1987). According to Pham (1998), the same reasoning may also be used anticipatorily to guide consumption decisions: Consumers may construct mental representations or “pictures” of the alternatives and assess how they anticipatorily feel toward these pictures.

*Strength of attitudes and preferences.* When people ask themselves “how do I feel about it?” they seem to monitor not only the valence of their feelings, but also the intensity of these feelings (i.e., the physiological arousal that accompanies the feelings). Support for this proposition can be found in studies of the effects of residual arousal on subsequent evaluations. For instance, recent incidental arousal (e.g., after a roller-coaster ride) has been found to make people more attracted to good-looking individuals of the opposite sex and more unattracted to individuals of the same sex (e.g., Dienstbier, 1979; White, Fishbein, & Rutstein, 1981). This effect can be interpreted from a feelings-as-information perspective. When asked to judge their attraction to another person, people naturally ask themselves “how do I feel about him (her)?” In so doing, they record not just the valence of their feelings (which, in these studies, was dictated by the gender and physical attractiveness of the other person), but also the intensity of their feelings, which, unbeknownst to them, had

been amplified by residual incidental arousal. Gorn, Pham, and Sin (2001) obtained similar results in a recent study of advertising evaluations. In this study, music was used to manipulate both the valence and the arousal of participants’ incidental mood. Participants were then asked to evaluate an ad whose affective tone was either pleasant or unpleasant. As predicted, the arousal of participants’ mood magnified the effect of the ad’s affective tone on participants’ evaluations: Under high arousal, evaluations became even more favorable when the ad’s tone was pleasant and more unfavorable when the ad’s tone was unpleasant. (The valence of the mood did not have any effect.) This result is, again, consistent with the idea that people monitor the intensity of their feelings when making target evaluations. In so doing, they may fail to realize that the intensity of these feelings may be inflated by residual incidental arousal.<sup>1</sup> Thus, whereas people use the valence of their feelings to infer the direction of their attitudes and preferences, they use the intensity of these feelings to infer the strength of these attitudes and preferences.

*Situational and task requirements.* Feelings also seem to be used to infer the level of vigilance and effort required by a task or situation—a phenomenon Schwarz (2002) called *cognitive tuning*. In general, negative affective states are interpreted as calling for increased vigilance and effort, whereas positive affective states are interpreted as allowing more nonchalance and less effort. According to Schwarz (1990, 2002), this is because negative affective states signal that the environment is potentially threatening, whereas positive affective states signal that the environment is safe. Consistent with this idea, it is typically found in persuasion studies that negative incidental moods increase people’s processing of the substance of the message and decrease their reliance on heuristic cues, whereas positive incidental moods have the opposite effect (e.g., Bless, Mackie, & Schwarz, 1992; Bless, Bohner, Schwarz, & Strack, 1990; Mackie & Worth 1989).<sup>2</sup> Conceptually similar results have been observed with other types of judgments (e.g., Bodenhausen, Kramer, & Susser, 1994). A need for vigilance also seems to be inferred from heightened levels of arousal (independent of valence). For instance, in persuasion settings, states of high arousal seem to trigger a selective processing of whatever in-

<sup>1</sup>As discussed by Gorn et al. (2001), the misattribution of residual arousal is more likely when the arousal is relatively mild. Intense arousal tends to be too salient to be misattributed. The effect of intense incidental arousal seems to be to moderate the type of information used in persuasion. Sanbonmatsu and Kardes (1988) suggested that intense arousal increases the reliance on peripheral cues and decreases the reliance on central arguments. However, subsequent research revealed that intense arousal increases the reliance on whatever information is more diagnostic, whether it is execution cues or message arguments (Pham, 1996).

<sup>2</sup>Although, here, this phenomenon is interpreted from an affect-as-information perspective, its underlying explanation has been debated. Mackie and Worth (1989), for instance, attributed this phenomenon to a reduction in processing capacity under positive mood. Isen (2001) attributed it to a greater efficiency of processing under positive mood.

formation is most diagnostic to the person's goal (Pham, 1996). Although this finding was originally interpreted as an adaptive attention-narrowing process resulting from a reduction in processing capacity, it may also indicate that intense feelings are interpreted as a call for increased vigilance.

*Emotion-specific signals.* The information conveyed by feelings goes beyond their valence or intensity. Keltner, Ellsworth, and Edwards (1993) found, for instance, that incidental states of sadness versus anger (states of the same valence) prompt individuals to make different causal attributions. Whereas sad individuals tend to attribute events to situational factors (e.g., I missed the flight because the traffic was bad), angry individuals tend to attribute the same events to human factors (e.g., I missed the flight because the cab driver was terrible). This is presumably because anger is typically caused by the actions of people and sadness by factors that are situational. As a result, people make different attributions when angry than when sad, even if the actual source of the affect is unrelated to the object to be judged. Similarly, Tiedens and Linton (2001) observed that respondents made predictions with greater confidence when under states of disgust or happiness than when under states of fear or hopefulness. This is presumably because both disgust and happiness typically arise in situations appraised as certain (e.g., witnessing something repulsive or receiving very good news), whereas fear and hope typically arise in situations appraised as uncertain (e.g., going up for tenure). Similar results have been reported with different sets of emotions (e.g., Lerner & Keltner, 2001, Raghunathan & Pham, 1999). From a feelings-as-information perspective, these results suggest that a person experiencing a specific affective state tends to draw inferences that are consistent with essential characteristics of the situations that typically elicit this type of affective state—characteristics known as appraisals. Appraisal-consistent inferences are drawn even if the affective state is incidental.

Raghunathan and Pham (1999) further proposed that, when experiencing specific affective states, people also draw inferences about the goals that should be prioritized given the situation. In other words, affective states convey not only situational appraisal information, but also motivational information. Consistent with this motivational hypothesis, Raghunathan and Pham found that, in choices between a high-risk and high-reward option and a low-risk and low-reward option, sad individuals consistently favor the former, whereas anxious individuals consistently favor the latter. This is presumably because sad individuals tend to infer that they have lost something of value (a typical cause of sadness), even if the sadness is purely incidental. This inference activates a goal of reward acquisition that shifts preferences toward high-reward options. In contrast, anxious individuals tend to infer that the situation is uncertain and beyond control (typical causes of anxiety). This inference activates a goal of risk avoidance that shifts preferences toward low-risk options. This chain of inferences need not be conscious. Ac-

ording to Raghunathan and Pham (1999, p. 72), it may be performed intuitively by asking "What would I feel better about?" with sadness leading to the conclusion that one would feel better about higher reward (but higher risk) options and anxiety leading to the conclusion that one would feel better about lower risk (but lower reward) options.<sup>3</sup>

## Rules of Interpretation

I now describe two principles that seem to govern how feelings are interpreted in judgments and decisions.

*Necessity and sufficiency of feelings.* In real life, feelings are generally associated with specific cognitions (e.g., appraisals, beliefs, and thoughts). For instance, when our favorite sports team wins, the feelings of pride or happiness that we experience are difficult to dissociate from our knowledge and attributions about the victory. It is therefore legitimate to ask whether the information conveyed by feelings lies in the feelings themselves or instead in the thoughts that typically accompany these feelings. Several findings suggest that feelings convey information in and of themselves. For example, in one study (Keltner, Ellsworth, & Edwards, 1993, Experiment 4), participants were instructed to assume physical poses that, unbeknownst to them, were characteristic of anger (e.g., eyebrows down with hands and teeth clenched) or sadness (e.g., inner corners of the eyebrows raised while gazing down). Although no explicit cognition was involved, participants unknowingly modeling anger made causal attributions consistent with anger, whereas participants modeling sadness made attributions consistent with sadness. Similarly, Martin, Harlow, and Strack (1992) asked participants to make evaluations while either (a) holding a pen lightly between their teeth, which resulted in the unknowing mimicking of a smile; or (b) biting strongly on a paper towel, which activated facial muscles associated with anger. Participants unknowingly mimicking smiling reported more favorable evaluations than those mimicking anger. Therefore, even feelings induced through noncognitive means are sufficient to convey judgment-relevant information.<sup>4</sup>

Other studies suggest that the experience of feelings may also be necessary for their informational and motiva-

<sup>3</sup>These findings bear a certain resemblance to predictions of regulatory focus theory (Higgins, 1997). Anxious respondents behaved as if they were prevention-focused and sad respondents as if they were promotion-focused. Subsequent research by Raghunathan, Pham, and Corfman (2004) suggests, however, that feelings of anxiety and sadness influence decision making above and beyond the mere activation of promotion and prevention thoughts.

<sup>4</sup>Admittedly, one cannot rule out the possibility that some low-level cognitions were activated by these sensory-motor inductions and contributed to these effects. However, to the extent that the effects seemed to occur in the absence of overt higher-order cognitions, these results are consistent with the idea that the signaling value of feelings cannot be completely attributed to the type of mental content and operations usually assumed in judgment and decision making.

tional signals to be conveyed. For instance, Raghunathan, Pham, and Corfman (2004) exposed respondents to the same anxiety- or sadness-producing scenarios as those used by Raghunathan and Pham (1999). Using a manipulation adapted from Strack, Schwarz, and Gschneidinger (1985), respondents in the “hot” condition were asked to empathize with the situation described in the scenario, whereas respondents in the “cold” condition were asked to analyze the situation described in the scenario. Although both groups of respondents were exposed to the same cognitive content, a pretest had shown that genuine feelings of anxiety or sadness would be more likely among respondents in the hot condition than among respondents in the cold condition. As expected, respondents in the hot condition exhibited similar choice tendencies as those uncovered by Raghunathan and Pham (1999). In contrast, respondents in the cold condition were not influenced by the affective content of the scenarios. This finding suggests that genuine feelings of anxiety and sadness may be necessary for people to shift their preferences toward lower risks or toward greater rewards (for similar results, see Keltner, Ellsworth, & Edwards, 1993, Experiment 3).

The necessity and sufficiency of feelings as information has important methodological implications. Genuinely experienced feelings (e.g., experienced anger), including those experienced anticipatorily at the thought of the object, may function very differently from mere affective beliefs (e.g., anticipated anger). It is not clear how much one can learn about the role of affect in judgment and decision making from the type of vignette studies that are popular in behavioral decision research. These vignette studies may tell us more about affective beliefs and naive theories of affect than about real feelings and emotions. Similarly, it is not clear that the effects of feelings on attitudes and behavior can be fully captured in studies that rely exclusively on self-reports of affective responses.

The necessity and sufficiency of feelings is also related to a widely studied phenomenon. People are not necessarily good at forecasting future feelings or at remembering past emotions (see, e.g., Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998; Loewenstein, 1996; Snell, Gibbs, & Varey, 1995). One reason is that people often rely on inadequate intuitive theories when projecting or recollecting affective states that they currently do not experience (e.g., Gilbert et al., 1998; Snell et al., 1995). Another reason is that affective states and feelings that are genuinely experienced have unique qualities that are simply inaccessible to a person not experiencing them. As Loewenstein (1996) pointed out, when we are in a “hot” state (e.g., intense emotion or hunger), it is extremely difficult to imagine what it is like to be in a “cold” state (e.g., to be calm or not hungry). Similarly, when we are in cold state, it is very difficult to comprehend what it feels like to be in a hot state. Systematic errors are bound to arise whenever judgments or decisions call for affective inferences that are intertemporal. As I will discuss further, I believe that this is because affect is part of a decision-making system of the present.

*Contingent answers to task-specific questions.* Martin, Ward, Achee, and Wyer (1993) identified an important boundary condition of the finding that negative mood increases task effort and positive mood decreases it. In their studies, respondents who were either in a positive mood or in a negative mood were asked to perform various tasks under one of two sets of instructions. One group was asked to keep working until they were satisfied with their performance. The other group was asked to keep working until they no longer enjoyed the task. When instructed to keep working until they were satisfied with their performance, respondents in a negative mood worked longer than those in a positive mood (a result consistent with the typical finding discussed earlier that negative mood leads to more careful processing compared to positive mood). However, when instructed to keep working until they no longer enjoyed the task, the effect reversed: respondents in a negative mood stopped sooner than those in a positive mood. Apparently, when the instruction was to keep working until satisfied with the performance, a negative mood was construed as dissatisfaction with one’s effort, producing greater perseverance, whereas a positive mood was construed as satisfaction with one’s effort, triggering an early stop. In contrast, when the instruction was to keep working until the task was no longer enjoyed, a negative mood was construed as the task not being fun, producing an early stop, whereas a positive mood was construed as the task being fun, producing perseverance. Therefore, the same feelings can have very different interpretations depending on the question that people are asking themselves. Positive and negative feelings will have different implications if the question is “Am I happy with my performance?” or “Am I having fun?” Conceptually related results were obtained by Martin, Aben, Sedikides, and Green (1997). They observed that, when asked to evaluate a story that was meant to be happy, participants in a happy mood reported more favorable evaluations than participants in a sad mood. However, when asked to evaluate a story that was meant to be sad, participants in a sad mood reported more favorable evaluations than participants in a happy mood. Again this finding shows that the same feeling can be interpreted very differently depending on the question that people are asking themselves. If the question is “Is this a good, happy story?” feelings of happiness mean “yes” and feelings of sadness mean “no.” If the question is “Is this a good, sad story?” feelings of happiness mean “no” and feelings of sadness mean “yes.”

Overall, these results demonstrate that the information value of the feelings lies not so much in the feelings themselves as in the interaction between these feelings and the questions that people are trying to answer when consulting their feelings. These questions will be dictated not only by situational demands (e.g., “Stop when you’re satisfied with your performance” vs. “Stop when you no longer enjoy it”), but more generally by the judgments or choices to be made and the person’s currently active goals. For instance, in a decision involving a single focal option (e.g., whether to see a given movie), a natural question to ask is “How do I feel about it?” However, in a choice between multiple explicit options (e.g., which movie to

see), a more appropriate question would be “Which one do I feel better about?” (see Huber, 2004; Raghunathan & Pham, 1999). The nature of the question may also be dictated by the set of options from which to choose. For instance, a choice that pits a secure but lower paid job against a less secure but higher paid job naturally invites the interpretation of sadness and anxiety in terms of preference for low risk versus high reward (see Raghunathan & Pham, 1999).

### Judgmental Properties of Feelings

Any assessment of the normative status of feelings should also consider the properties of feelings as they relate to judgment. These properties are generally not evident in feelings-as-information studies because in these studies, (a) feelings are manipulated experimentally, not assessed directly; and (b) feelings are typically incidental, not integral to the object being evaluated. In assessing the properties of affective feelings, it is useful to distinguish three types of affect-elicitation mechanisms (e.g., Cohen & Areni, 1991; Pham et al., 2001). Type-I affect is based on the triggering of hardwired programs related to bio-regulation (e.g., the disgust elicited by the intake of spoiled food). Type-II affect is based on the activation of emotional schemas acquired through conditioning (e.g., the fear triggered by suspense-related features in movies). Type-III affect is based on a controlled appraisal of the stimulus (e.g., the guilt experienced when attributing one’s failure to a lack of effort). Type-I and Type-II affective responses tend to be elicited very rapidly (e.g., LeDoux, 1996), whereas Type-III affective responses, which involve significant cognitive mediation, tend to be elicited more slowly (Cohen & Areni, 1991).

*Speed of judgment.* Various lines of evidence suggest that feelings generally allow greater speed of judgment. As mentioned earlier, affective feelings (especially of the Type-I and Type-II varieties) tend to arise rapidly (LeDoux, 1996). In addition, feelings tend to have a clear interpretation (Strack, 1992). It is therefore not surprising that affective evaluations of a variety of everyday stimuli have been found to be performed faster than cognitive evaluations of the same stimuli, both in online judgment tasks (Pham et al., 2001) and in memory-based judgment tasks (Verplanken, Hofstee, & Janssen, 1998). Additional evidence comes from the finding that the reliance on feelings in evaluations tends to increase under time pressure (Pham et al., 2001; Siemer & Reisenzein, 1998).<sup>5</sup>

<sup>5</sup>Zajonc’s (1980) well-known primacy-of-feelings argument does not speak directly to the prediction that the reliance on feelings provides a faster basis of judgment. His argument rested largely on “mere-exposure” studies involving low-level affective responses to nonmeaningful stimuli that were presented subliminally. These low-level responses may not be genuine affective responses, but nonspecific sensations of fluency (Mandler, Nakamura, & van Zandt, 1987). Even if these responses were genuine affective feelings, it is not clear that such feelings would have similar judgmental properties as those monitored consciously in response to meaningful stimuli. In addition, a rapid elicitation of feelings does not necessarily entail a rapid interpretation of these feelings in judgment.

Note that the comparative speed of feelings in judgment should be attenuated under two conditions. First, the interpretation of Type-III feelings may be slower. Second, certain types of cognitive evaluations—those involving a few well-defined criteria and those involving the retrieval of a prior attitude—can also be very rapid.

*Consensus.* Interpersonal agreement is generally considered a desirable property in judgment and decision making. The reliance on feelings in judgment has been criticized in part because of a widespread belief that feelings are bound to be idiosyncratic compared to cognitive assessments, which are thought to be more objective. A growing body of evidence suggests, however, that affective judgments are in fact quite consensual, sometimes even more so than cognitive judgments. For instance, judgments of physical attractiveness, long thought to be purely subjective (“beauty is in the eye of the beholder”), have recently been shown to be largely universal (Etcoff, 1999). It has also been observed that, although juries may disagree widely on the amount of punitive damages they are willing to award in legal cases, they tend to agree strongly on how outraged they feel in response to each case (Kahneman, Schkade, & Sunstein, 1988). In fact, for a variety of everyday stimuli, people seem to agree more on how they feel toward the stimuli than on how they would cognitively assess these stimuli (Pham et al., 2001). According to Pham et al. (2001), affective judgments tend to be consensual when they involve Type-I and Type-II feelings, which are based on hardwired structures that are universal and emotional schemata that are widely shared. I also suspect that, unlike cognitive judgments, feeling-based judgments have a natural biological scale with a well-defined range, which contributes to their interpersonal consistency.<sup>6</sup>

*Thought Mobilization.* Spontaneous thoughts toward the object are generally assumed to be part of a cognitive route to judgment. For instance, cognitive-response models of persuasion posit that spontaneous thoughts in response to a message are the primary determinant of how the message will be evaluated. However, recent evidence suggests that people’s spontaneous thoughts toward objects are in fact heavily determined by their initial affective responses to

<sup>6</sup>The high interpersonal agreement observed with feeling-based judgments raises an interesting question: Would feeling-based judgments be more consistent over time than judgments based on more descriptive inputs? Although this question still needs direct testing, there is some indirect evidence that the answer might be yes. Wilson, Lisle, Schooler, and Hodges (1993) observed that participants who were asked to introspect on their reasons for choosing a poster prior to making a choice were more likely to regret their choice a few weeks later than participants who made their choice without thinking about their reasons. If it can be assumed that participants who were not asked to think about their reasons based their choice on spontaneous feelings, this finding would be consistent with the hypothesis that feelings can provide a more stable basis of judgments. However, a requirement may be that the object of feeling be present across time periods. As mentioned earlier, feelings tend to lose their judgmental properties unless genuinely experienced, and genuine feelings are more likely when the object is available for experience.

these objects. Pham et al. (2001) found, for instance, that feelings toward a variety of stimuli are almost perfect predictors of the thoughts generated spontaneously by the stimuli. It appears that initial feelings toward a target initiate a confirmatory search for information that supports or helps explain these initial feelings (Pham et al., 2001; Yeung & Wyer, in press). Based on neurophysiological evidence, Damasio (1994) similarly concluded that “somatic states, negative or positive, caused by the appearance of a given representation, operate not only as a marker for the value of what is represented, but also as a booster for continued working memory and attention” (p. 198). That initial feelings mobilize subsequent thoughts has important implications for judgment and decision making. Spontaneous thoughts may not be as independent of feelings as is generally believed. These thoughts may often be direct correlates of initial feelings, even if they are often (ironically) called *cognitive responses*. Seemingly reason-based judgments and decisions could in fact be heavily tainted by initial feelings.

In summary, affective feelings have three important judgmental properties: (a) they generally allow for faster judgment to be made, (b) they elicit strong interpersonal agreement, and (c) they mobilize people’s thoughts. To the extent that efficiency of judgment, consensus in judgment, and feeling-thought consistency, are deemed desirable properties of judgment inputs, feelings do not appear to be a necessarily inferior form of information.

### Selective Reliance on Feelings

The normative status of feelings in judgment and decision making also depends on how discriminating people are in their reliance on feelings. In general, people’s reliance on feelings tends to increase under conditions of low motivation, ability, or opportunity to process information (see Clore, Schwarz, & Conway, 1994, for a review). This kind of evidence has been interpreted as suggesting that the reliance on feelings is mostly a way of simplifying judgment (Clore et al., 1994), and that the “how-do-I-feel-about-it?” heuristic operates mainly under “peripheral” modes of judgment (e.g., Forgas, 1995). I believe, however, that feelings are invoked more selectively than would be implied by a strict effort-minimizing, peripheral judgment strategy.

The very idea of feelings-as-information implies that people should be selective in their reliance on feelings. If people rely on their feelings because they attribute information value to these feelings, they should logically refrain from using these feelings whenever they perceive these feelings to be uninformative (Schwarz, 1990; Schwarz & Clore, 1988). The classic demonstration of this contingency comes from Schwarz and Clore’s (1983) original mood-as-information studies. In these studies, respondents were found to report more favorable judgments of life satisfaction if they were in a positive mood than if they were in a negative mood. However, when it was made salient to them that the actual source of their feelings was unrelated to the object of their evaluation, the effect disap-

peared. This basic result has been replicated in numerous studies (e.g., Gorn et al., 1993; Keltner, Locke, & Audrain, 1993). It indicates that people rely on their feelings to the extent that they perceive these feelings to be representative of the target being evaluated (Pham, 1998; Strack, 1992).

Yet, the finding that people seem to take into account the representativeness of their feelings does not fully convey the extent to which people are selective in their reliance on feelings in judgment. By default, people tend to assume that their feelings are representative of the target, even if the actual source of the feelings is incidental (Schwarz, 1990). It is only when an alternative explanation for their feelings is made salient that people question the representativeness of their feelings (see Schwarz & Clore, 1983; see also Gorn et al., 1993). Therefore, people’s ability to spontaneously assess the representativeness of their feelings (and adjust their judgment accordingly) may be limited, unless they have a very high motivation and ability to process information (Albarracín & Kumkale, 2003).

Even if people do not always question the representativeness to their feelings, they appear to take into consideration other aspects of the feelings’ information value. For example, Pham (1998) observed that people are more influenced by their mood when making decisions guided by experiential motives (e.g., assessing a movie for an evening out) than when making decisions guided by instrumental motives (e.g., assessing the same movie as material for a school project). Presumably, this is because feelings are perceived to be more relevant for assessing the potential fulfillment of experiential goals (e.g., “Would I have fun at this movie?”) than for assessing the potential fulfillment of instrumental goals (e.g., “Would seeing this movie help me for the project?”). Similarly, Schwarz et al. (1987) found that mood states have greater influence on judgments of well-being than on reported satisfaction with one’s work or current housing. Again, this is presumably because people’s momentary feelings are more diagnostic of their overall well-being than of their satisfaction with more specific issues. Raghunathan and Pham (1999) additionally found that anxiety and sadness have more influence on individuals making decisions for themselves than on individuals making decisions for someone else. Again, this is presumably because feelings are more diagnostic of one’s own preferences than of someone else’s.

People’s selectivity in their reliance on feelings is also evident in recent studies by Avnet and Pham (2004). Participants were primed to trust or not trust their feelings using a procedure adopted from Schwarz et al. (1991).<sup>7</sup> Participants were then asked to make evaluations while their feelings were manipulated integrally or incidentally. It was found that integral

<sup>7</sup>In the high-trust condition, participants were asked to recollect 2 instances of successful reliance on feelings in judgments or decisions—a relatively easy task. In the low-trust condition, participants were asked to recollect 10 such instances—a more difficult task. Based on Schwarz et al.’s (1991) findings, it was expected that the ease of retrieving 2 instances of successful reliance on feelings would temporarily raise participants’ confidence in their feelings, whereas the difficulty of retrieving 10 instances would lower their confidence in their feelings.

or incidental feelings had more influence on evaluations when participants were primed to trust their feelings than when they were primed not to trust their feelings. However, if processing resources were reduced, feelings influenced evaluations even when participants were primed not to trust their feelings. Avnet and Pham speculated that the reliance on feelings involves a metacognitive stage in which people assess whether they should be relying on their feelings. This metacognitive assessment requires processing resources. When resources are insufficient, feelings are relied on without much consideration of their diagnosticity.

To summarize, although the reliance on feelings generally increases in situations calling for the simplification of judgment, feelings seem to be used more selectively than would be predicted by a simple effort-minimizing, peripheral judgment strategy. Whenever feelings are used selectively, it appears to be out of concern for the diagnosticity of the feelings to the judgment at hand (see Pham & Avnet, 2004). Although people do not always realize that, occasionally, their feelings are not representative of the target, they seem to be sensitive to other aspects of the diagnosticity of their feelings. Aspects considered include the relevance of the feelings given the decision goals, the appropriateness of the feelings given the object to be judged, the validity of the feelings in assessing someone else's preferences, and the perceived trustworthiness of the feelings.

## FEELINGS AND THE AFFECTIVE DECISION SYSTEM

The aforementioned regularities of how feelings seem to inform judgments lead me to speculate that feelings are part of an overall system of judgment and decision making. I suspect that affective feelings are the primary medium of an ancient judgment and decision-making system that we inherited from our distant evolutionary past. Like any system, this system has its advantages and disadvantages.

### The Adaptive Value of Feelings in Judgment and Decision Making

Affective feelings provide a variety of goal- and task-relevant signals to the individual. A major type of signal is of course a signal of value. What feels good must be good. Feelings are such a compelling signal of value that affect and value are often confused in the ambiguous notion of "utility." Although the two are related (at least in people's minds), affect and value are different. When people make decisions based on what "feels good" to them, they are not being hedonic maximizers, as utility theorists would suggest. Rather, they are simply using their feelings as proxies for value. At some point in our evolutionary past, our biological apparatus probably learned to tag objects of value (e.g., food, shelter, reproductive partners) with positive feelings and tag objects of harm (e.g., poison, danger, competitors) with negative feelings. The question then be-

comes the following: Are affective feelings good proxies for value? As Egon Brunswik (1952) would have said, it depends on the relative magnitude of two correlation coefficients in the representative universe of objects to be evaluated: (a) the correlation between the feelings elicited by this universe of objects and these objects' true criterion value (the ecological validity of the feelings) and, (b) the correlation between other available proxies of value and the objects' criterion value (the ecological validity of alternative bases of evaluation). Although it is easy to come up with examples of objects such as junk food whose true value is poorly predicted by affective feelings, I suspect that, for much of our history (and perhaps still to this day), our affective feelings had good ecological validity for the universe of objects that we had to evaluate.

The finding that different feelings of the same valence are interpreted very differently shows that feelings are not just signals of value. Feelings—at least those that are genuinely experienced—also signal (a) environmental and task demands (e.g., allowed nonchalance vs. required vigilance); (b) critical characteristics of the situation (e.g., high certainty vs. low control); and (c) goals that need to be prioritized given the situation (e.g., reward acquisition vs. risk avoidance). Interestingly, the same feelings can be interpreted very differently depending on the questions that people are trying to answer at the time of judgment. In some respect, the idea that affective feelings have contingent, question-dependent interpretations parallels Schwarz's (this issue) observation that cognitive feelings have theory-dependent interpretations. An important avenue for future research would be to identify how the questions that feelings are meant to answer are selected.

Affective feelings generally enable quicker judgment. Everything else being equal (i.e., if ecological validity could be held constant), the greater speed of judgment by feelings is an obvious advantage. Efficiency is desirable if it does not come at a cost of validity of judgment. Affective feelings also provide signals that are interpersonally consistent. This interpersonal consistency may reflect a general reliability and stability of feelings as a basis for judgment. If affect, as a decision system, is truly a remnant of our evolutionary past, a critical characteristic of this system would have been an ability to categorize objects in a consistent fashion. A consistent categorization of inputs increases the correlation between these inputs and the criterion. In addition, interpersonal consistency may be desirable in its own right in certain situations, for example, in family and group decision making, public policy, and jury-based decisions.

Affective feelings mobilize thoughts. The evolutionary purpose of this property may have been to promote more focused and quicker behavioral responses by increasing the intrapersonal consistency of the signals that the person receives. Conflicting signals from feelings and thoughts would clearly inhibit responses to the environment. Finally, it is reassuring that people are somewhat selective in their reliance on feelings in judgments and decisions. They do not blindly use their feelings to evaluate objects, but seem to take into ac-

count the diagnosticity of these feelings, unless processing resources are limited (Avnet & Pham, 2004). The reliance on feelings is not necessarily a peripheral mode of judgment.

### The Drawbacks of the Affective System

Affect, as a decision-making system, is not without flaws. Affective feelings, however compelling, will naturally lead us astray in those domains where they have poor ecological validity. An interesting avenue of future research would be to identify the domains for which feelings have good or poor ecological validity across a representative set of targets. Another research avenue would be to assess people's metacognitive intuition about the ecological validity of their feelings across domains. Issues of ecological validity aside, the design of the affective system of judgment has several drawbacks. As mentioned earlier, the affective system is geared toward the present. This explains why people can be poor oracles of their future feelings and unreliable historians of their past emotions. Affective feelings have a quality that is difficult to grasp unless one is truly experiencing them. Because future feelings are difficult to grasp (e.g., how guilty one would feel after transgressing a diet) compared to current feelings (e.g., an urge to indulge in junk food), feeling-based judgments and decisions will tend to be myopic (see Loewenstein, 1996). By comparison, perceptions, beliefs, and other types of descriptive knowledge tend to be atemporal, which is a useful property in planning. Also, the consistency of feelings as evaluative signals comes at a cost of flexibility. Associations between objects and affective responses are difficult to unlearn, as is evident in phobias. Finally, the strong tendency of initial feelings to mobilize thoughts has the obvious drawback of biasing the search and processing of available information. When initial feelings are strong, reasons invoked on reflection could well be only post hoc rationalizations of the initial feelings.

### What Lies Ahead (or Should)

Whereas Schwarz's (this issue) article has focused primarily on the information value of cognitive feelings in judgment and decision making, this essay has focused exclusively on affective feelings. Both kinds of feelings refer to phenomenological experiences that provide judgment-relevant information in an efficient manner. However, it is not clear that they belong to the same system of judgment. They seem to address very different types of questions. Whereas affective feelings seem to inform us on how to evaluate the world around us and adjust our behavior accordingly, cognitive feelings seem to inform us on what we know about this world. An important mission for future research will be to analyze the similarities and differences between the two kinds of feelings.

Let us return once more to the question that motivated this essay. Are feelings, and affect in general, mostly detrimental in judgments and decisions, as is commonly believed? Or are feelings a superior form of intelligence, as Montesquieu

(1892) once implied? Of course, the answer must lie somewhere between the two views. Yes, affective feelings can (and do) sometimes lead us astray. But they also give us extremely valuable signals—signals without which we could hardly function. As Damasio (1994) recently suggested, people without the ability to experience emotional feelings—the Cartesian ideal—would most likely be terrible decision makers. To that I would add that the ability to experience emotional feelings is not even sufficient: Intelligent decisions makers additionally need the ability to *interpret* their feelings.

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