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Cognitive Phenomenology:

Feelings and the Construction of Judgment

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Outline:

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Feelings and judgment

It is a truism in the history of science that the last thing to be studied is that which is closest to the scientist. If the stars were the first object of study, perhaps it was inevitable that research on the experience of thought and emotion would be long delayed. Even contemporary psychologists generally avoid dealing with consciousness -- especially feelings and other experiential aspects of consciousness. We are better prepared to study the content of thought than the experience of thinking, preferring to relegate observations about experience itself to phenomenologists, poets, and drug addicts. Even investigators concerned with the role of emotion in social cognition have avoided focusing on experience, despite the fact that one of the most distinctive aspects of emotions is that they are felt. If there is a necessary ingredient in emotion, it is surely experience. One can have an emotion without doing anything or saying anything, but not without feeling anything. It is odd, therefore, that current accounts of emotion and social cognition have left out the experiential aspect altogether. But, while psychologists avoid focusing on conscious experience, the same may not be true of our subjects. Recent research suggests that affective and cognitive feelings are central to a surprising variety of judgments and decisions. Rather than being idle by-products of information processing, affective and cognitive feelings, I argue, are gainfully employed in the construction of everyday social judgments.

Perhaps the amazing fidelity of our senses is responsible for our failure to accord experience its rightful place. Rarely does one have occasion to focus on sensations apart from what they signify. Normally, we focus on the outside world and can safely ignore the fact that sensations of the world and the world itself are not the same. One is more likely, for example, to say, "Feel the velvet fabric," than to say "Feel your skin against the velvet fabric," even though, strictly speaking, our skin is all that we can ever feel. Mostly we separate experience and reality only when confronted with sensory anomalies, as when, at a baseball game, we hear the crack of the bat only after we see the ball sailing into left field. Magic shows, perceptual illusions, and distorting mirrors are all fascinating, presumably because

the connection between experience and reality is usually so seamless. We instinctively believe our senses and our feelings above all else, and it is surprising to discover that they can be in error. Indeed, the very phraseology of this discussion shows how delicate the problem is. Error cannot actually be a property of feelings and senses, but only of the inferences we draw from the information they provide. The conditions of such errors are the focus of much of this chapter.

I focus on two kinds of feelings, emotional and nonemotional feelings, and discuss their respective roles in affective and nonaffective judgment. In the first part of this chapter, a model developed to understand how mood and emotion affect judgment is discussed, along with relevant research. In the second part, I argue that the same processes that govern the role of mood in judgment also govern the role of nonemotional feelings in nonaffective judgments.

Emotional Feelings and Judgment

The most reliable phenomenon in the cognition-emotion domain is the effect of mood on evaluative judgment. The rose-colored glasses effect and its reverse can be readily observed in everyday life and easily produced in the laboratory. Forgas and Moylan (1987), for example, interviewed nearly 1000 people as they left movie theaters after they had seen one of several movies. The movies had been previously classified as happy, sad, or aggressive in affective tone. The interviews covered views on political figures, future events, crime, and life satisfaction. In response to these questions, viewers made judgments that clearly reflected the affective tone of the films they had seen. There were no such differences among patrons entering the theaters, suggesting that the bias was indeed due to their momentary mood states. The list of demonstrations that moods affect judgment in this way is long (see Forgas & Bower, 1988). Rather than review them here, however, let us turn directly to possible explanations of the effect.

In the service of parsimony, most investigators have assumed that the concepts and processes needed to explain emotional phenomena would be found within traditional cognitive psychology. For example, emotions have been treated as equivalent to semantic concepts (e.g., Bower, 1981; Isen, Shalker, Clark, & Karp, 1978). In general, spreading activation theory characterizes both abstract concepts and concrete memories as nodes in an associative network (Anderson & Bower, 1973). In this approach to cognitive processes, activation is believed to spread from one memory or concept to another along associative pathways. By observing the precise time required to go from one concept to another it has been possible to map aspects of a person's implicit cognitive structure (Posner, 1978). Spreading activation theory offers an explanation for many of the effects of emotion on recall and judgment. To make the theory applicable to affective phenomena, emotions and moods are considered to be additional nodes in a network and are assumed to share many of the properties of the concepts and memories to which they are connected. This view, which I refer to as the "priming model," remains a powerful approach, and one that offers a compelling account of many affective phenomena.

A different explanation is offered by the feelings-as-information view (Schwarz & Clore, 1983, 1988). According to this approach, whether or not mood influences a particular judgment is governed by the degree to which the feelings occasioned by being in a mood state are seen as a reaction to the object of judgment. When one makes an affective appraisal, some affective feedback in the form of feelings and thoughts is produced that serves as input to subsequent processes. The quality of the affective experience provides information about the nature of the personal relevance of a situation. The quantity or

intensity of the experience provides information about the relative importance of the situation for one's concerns. On the basis of this feedback, one makes implicit decisions regarding action, the distribution of attention (Frijda, 1986) and processing priorities (Simon, 1967).

The affective feedback from this appraisal process involves cues that are not different in kind from the affective feedback characteristic of moods and emotions. In the case of moods, which are often ongoing and of low intensity, one may fail to attend to such cues until the occasion arises to make a decision or judgment. During the judgment process, as one attends to the output of the appraisal process, it is generally not possible to discriminate appraisal-produced cues from pre-existing, mood-produced cues. This, we have suggested, is one process whereby moods affect judgments and decisions.

Mood-as-information

For readers not familiar with the basic data of the mood-as-information approach, I now review the studies reported by Schwarz and Clore (1983) which can be thought of as a prototype for the other studies considered. Two experiments were conducted using a misattribution paradigm. The basic procedure in each case involved inducing a happy or a sad mood and making an external plausible cause for subjects' feelings salient for some subjects but not others. The results showed that moods influenced evaluative judgments in a mood-congruent manner, but when an external plausible cause was made salient, this effect disappeared.

In the first of these experiments, moods were induced by having subjects spend fifteen minutes writing a detailed description of a happy or a sad event in their recent past. A check at the end of the experiment showed that subjects who had written about a happy event were indeed in a better mood than those who had written about a sad event. After the writing task, subjects answered two questions about life satisfaction which served as the primary dependent variable. Those who were in the happy mood condition rated themselves as more satisfied with their life as a whole than did those in the sad mood condition.

In addition, the salience of a possible external cause for subjects' momentary feelings of happiness or sadness was varied. The experiment was conducted in a small and unusual sound-proof room with its own ventilation and lighting system. Before they began, half of the subjects were given reason to think that the room might make them feel tense. They were told that other subjects had reported that being in the sound-proof room made them feel tense after a period of time, a technique used previously by Fazio, Zanna, and Cooper (1977). To lend credibility to this story, subjects were asked to fill out a questionnaire about the room, the lighting, and the ventilation. The results showed that making salient a plausible external cause for subjects' feelings eliminated the effect of mood on judgments, as shown in Figure 5.1. These subjects misattributed their negative feelings to the room, and were therefore less likely to read them as an indication of how they felt about their life as a whole. The moods reported by subjects in the external attribution group did not differ from the moods reported by other subjects, but their implicit understanding of these momentary affective experiences did differ.

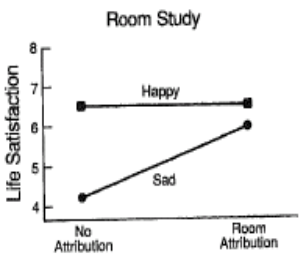

FIG. 5.1. Mean life satisfaction scores after a sound-proof room has or has not been made salient as a possible cause of feelings of tension for happy and sad subjects (after data from Schwarz & Clore, 1983).

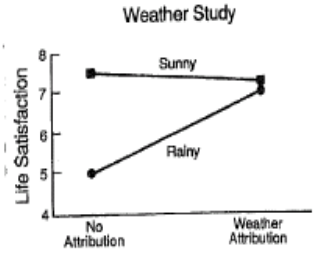

FIG. 5.2. Mean life satisfaction scores for respondents interviewed on rainy or sunny days when weather was or was not made salient as a source of their mood states (after data from Schwarz & Clore, 1983).

The results were consistent with the idea that the proximal cue for many kinds of affective judgments is the information provided by one's feelings as one considers the object of judgment. Schwarz and Clore (1983) interpreted them as support for an informational hypothesis rather than a cognitive priming hypothesis, because priming is supposed to be an automatic cognitive process. Spreading activation theory offers no reason to assume that such automatic and unconscious priming processes should depend on subjects' conscious attributions about their momentary affective experience.

The second experiment was a field replication of the first. Following research by Cunningham (1979), the weather was used as a naturalistic mood manipulation. The research was conducted on the first warm and sunny days of spring and a few days later when, as is inevitably the case in the Midwest, the weather turns cold and damp again. The life satisfaction data were collected in telephone interviews in which the same two questions were asked as in the laboratory experiment. Results showed that people were indeed in a better mood on sunny than on rainy days, and that mood affected their life satisfaction ratings just as before. In order to manipulate attributions, the caller pretended to be telephoning from a Chicago survey organization. This allowed the caller to ask at the beginning of some but not all of the calls, "By the way, how's the weather down there?" It was expected that answering this question would make the weather salient as a plausible (and in this case true) cause of subjects' momentary affective feelings. As before, the results showed that the effect of mood on life satisfaction ratings was disrupted by having an external plausible cause made salient (see Fig. 5.2).

Two additional things are worthy of note in these experiments. First, in both experiments the misattribution effect occurred for negative moods only. A possible reason for this result is that the mood manipulation had been successful only in the negative and not also in the positive condition. Indeed, in the first experiment, subjects in the happy conditions did not differ in mood from subjects in a no-mood control condition. Because college students generally rate themselves as in a somewhat positive mood anyway, it may be easier to decrease than to increase their moods. In addition, mood affects processing style (Schwarz, 1990). People in happy moods are more likely to rely on heuristic strategies and less likely to be analytical. Negative moods, on the other hand, signal problems and tend to elicit analytical problem-solving that may make subjects more alert to possible causes of their affect. Such a mental set should also make them more susceptible to attributional manipulations.

A second, and especially important, fact about the results is that the attribution manipulations affected subjects' life satisfaction ratings but not their moods. Responses to a mood item collected afterward showed that positive and negative mood groups still differed, and that their attributions had not affected their moods. Attributing their experience to the soundproof room or to the weather did not influence the intensity of subjects' moods, but only interpretations of their mood-based feelings. This fact is important because some alternative explanations for the results of misattribution studies (e.g., Calvert-Boyanowsky & Leventhal, 1975) assume that attribution manipulations decrease or eliminate moods.

The results of this experiment are consistent with our emphasis on the fact that emotions involve experiential states, and these experiential states convey information. By and large, this is not the position that has been taken in the literature. The more common priming view outlined earlier is that the effects of emotion on judgment operate automatically and unconsciously, and that the person is passive in the process. Our view was inspired

by Wyer and Carlston's (1979) book, in which they suggested that one way that affect might influence cognition is by serving as information to judges about their own reactions. Like the role of touch in allowing one to locate an object in a drawer without looking, affective experience allows one to navigate the interpersonal world (Ortony, 1991). Affective feelings are a readout of the computations involved in appraising events. They serve as feedback from such processes around which evaluations of associated stimuli are formed. But because we have only one window on our affective experience, the merging of appraisal-based cues and mood-based cues tends to result in bias.

Direct versus Indirect Effects of Mood

Underlying the issue of whether mood effects are due to the priming of concepts or to the conscious experience of feelings is a more basic question. This question concerns whether mood acts directly on judgment, by being interpreted as evidence of one's reaction to the object of judgment, or only indirectly on the stored representation of the object that is then retrieved and judged.

Indirect Effects. It has long been assumed that most influences on judgment are mediated by changes in beliefs (or in the weights attached to beliefs) about the object of judgment (e.g., Anderson, 1981; Fishbein & Ajzen, 1975), or in a more cognitive account, by changes in one's interpretation of presented information (e.g., Higgins, Rholes, & Jones, 1977). During the last decade or so, social cognition research has been pre-occupied with problems of how information about people is represented, stored, and retrieved (Wyer & Srull, 1984). As attention has turned toward the effects of mood and emotion on social judgment, a natural tendency has been to devise accounts that use this same framework. Thus, according to the priming model, as indicated earlier, emotions activate emotion-congruent facts or beliefs in memory (Bower, 1981; Isen, 1984). From this view, mood is believed to have its effects on the interpretation or encoding of new material (Bower, 1981) or on the retrieval of material about known objects. In either case the effects of mood are mediated by changes in either one's temporary or one's permanent representation of the object of judgment.

However, a variety of findings have cast doubt on some of these proposals. In many cases, for example, little or no relationship is evident between memory and judgment, leading to the inference that many judgments may not be based on memory (Schwarz & Clore, 1988). Also, unlike most priming effects, which generally occur when encoding new material (Srull & Wyer, 1979), mood effects are frequently found to occur at the judgment stage (Clore, Parrott, Schwarz, & Wilkin, 1990; Fiedler & Stroehm, 1986).

Direct Effects. By contrast, the feelings-as-information approach (e.g., Clore & Parrott, 1991; Schwarz & Clore, 1983, 1988), maintains that emotions affect judgment and decisions directly rather than indirectly. By "directly" I mean that emotion enters the equation at the judgment stage rather than solely at the encoding or the retrieval stages. It contributes to impressions by combining with stimulus information additively, that is, mood affects subjects' evaluations independently of their representation of the object of judgment (Schwarz, Robbins, & Clore, 1985).

As an analogy, consider how we would answer related questions about food. To answer the question, "How much do you like your lunch?" we would attend to our momentary gustatory sensations and reply accordingly. Most models of evaluative judgment imply that we would answer such questions by listing the ingredients in our lunch, accessing stored evaluations of them, and adding up the values. Or we might categorize the dish as a whole (as say, lasagna) and then look up the stored value for that. In

other words, "I must like my lunch because it is lasagna, and I know I like lasagna." Such an account is quite odd, and this oddity suggests that the traditional approach is wrong or at least that its domain of application is limited. (In addition, it suggests that one might want to avoid judgment theorists as dining companions.) As an alternative view, I assume that the liking judgment includes information directly from the enjoyment of the taste of the food. A similar process presumably underlies other on-line affective appraisals. For example, if asked how much we like a person we have only recently met, we are likely to formulate an answer by bringing the person to mind and noting any overall affective reactions. Often we may not be able to say why we like them, because we may not have accessed reasons when we made our appraisal -- rather we simply read off our momentary experience.

This basic issue is in fact an old one in social psychology. In the 1970s, for example, the affective model of interpersonal attraction also assumed direct affects (Byrne & Clore, 1970; Clore, 1966; Clore & Byrne; 1974). It focused on how the affective reactions occasioned by rewards and punishments from others influenced liking and disliking. The theory and the research surrounding it, sparked some debate on this same issue. At the time, standard judgment theory maintained that liking and other evaluative social judgments derived solely from pre-existing evaluative beliefs about the person or inferences from those beliefs (e.g., Ajzen, 1974; Fishbein & Ajzen, 1975; Kaplan & Anderson, 1973a, 1973b). These theories assumed that affect and emotion influence judgment only indirectly, by first influencing a person's beliefs about the object of judgment.

The "reinforcement-affect model of attraction", as it was referred to, proposed instead that emotion had direct effects on judgment (e.g., Byrne, Clore, Griffitt, Lambreth, & Mitchell, 1973a,b; Clore & Byrne, 1974). Indeed, to avoid an infinite regress, it was felt that some source for judges' evaluations other than prior evaluative beliefs was logically required. The local question in the similarity-attraction experiments around which the model was designed was whether being agreed with by someone affected liking for that person directly (through associated affect) or only indirectly (through belief change). The idea that the influence of affective states was not always mediated by belief change was supported by evidence that liking was affected even when affective states were due to completely irrelevant causes. These included happy and sad films (Gouaux, 1971), hot and crowded rooms (Griffitt & Veitch, 1971), and good or bad news on the radio (Veitch & Griffitt, 1976). In each case, being in a good or bad mood influenced social judgments in a mood-congruent way. Thus, the issue in this sub-literature was similar to the issue in the recent mood literature-- to what degree do changes of judgment necessarily reflect changes in beliefs about the object of judgment? Because the intervening years have seen increased attention to questions about how social information is represented, this issue has even greater relevance to contemporary "social cognition research" than it did to the "impression formation" and "interpersonal attraction" research of that period.

A question that arises concerns the relation between information from one's momentary affective reactions and information from the retrieval of previously stored values. Are these two kinds of information comparable; are they integrated into the same mental equation? Schwarz and Clore (1988) have characterized mood effects as the result of a heuristic process, suggesting that one either bases one's judgment on beliefs about the object or uses the "how-do-I-feel-about-it" heuristic. However, many judgments may involve a two-stage process in which both are involved. One may first retrieve or compute an evaluation by integrating the values of one's beliefs about the

object (as in traditional judgment theory), and then appraise how one feels about that tentatively evaluated object (the "feelings-as-information" heuristic). Even if one has a clear opinion, one must often make a further evaluation to answer the question posed --"I know I like the person, but on a 10-point scale, how much do I like him?"

Non-emotional Feelings and Judgment

Some of the clearest examples of the role of feelings in judgment involve the influence of affective feelings on evaluative judgments. I argue, however, that the same kinds of feedback processes govern the role of nonaffective feelings in nonevaluative judgments. I take "affect" to refer to something valenced, that is, something that is positive or negative, and I take "affective appraisal," to be an appraisal of some event, action, or object with respect to one's own goals, standards, or attitudes (Ortony, Clore, & Collins, 1988). The term "feelings" is often assumed to refer to affective feelings, but this need not be the case. Many of the most common feelings are not affective. For example, when we say we feel hungry, tired, or dizzy, we are not referring to emotions but to bodily feelings. Such feelings also provide information that affects judgment and decision making, but the information concerns the state of one's body rather than the state of one's goals, standards, and attitudes. Similarly, when we say we feel certain, confused, or surprised, these are not assertions primarily about the state of our goals, or the state of our body, but about our state of knowledge. Saying that these are not affective does not mean that they cannot be the cause of affective or emotional reactions. We may find it distressing that we are tired, happy that we are certain about something, or frustrated that we are confused, but being tired or certain or confused are not themselves emotional feelings (Clore, Ortony, & Foss, 1987).

I now attempt to show that these nonaffective cognitive experiences or feelings also affect judgment and decision making, and that when they do, they obey the same principles that guide decisions based on affective feelings. In the studies to be discussed, some momentary cognitive experience is induced, some attributional variable is generally manipulated, and some judgment is made. Depending on the attributional manipulation, all produce some form of assimilation or contrast effects in a predictable way. The content of each of these factors varies widely, and with them the nature of the implications for different judgment domains. Few of the authors would, a priori, have grouped their study with the others. Their similarity lies in the fact that some aspect of a person's phenomenal experience of thinking is used as data for making a judgment in each study, and, I argue, each involves a common set of processes. To make clearer the similarity, the following summary information will be given for each of the major studies:

(a) the momentary experience studied, (b) the method of inducing the experience, (c) the method of manipulating attributions, if any, (d) the kind of judgment, and (e) the results

The Availability Heuristic:

Psychologists have generally approached the study of decision making as a search for the algorithm that people use to weight and combine the available information. An exception to this trend was Kahneman and Tversky's (1973) work on heuristics. What was innovative and exciting about the idea of heuristics was that Kahneman and Tversky looked for an explanation of various judgmental effects in a place that no theorist focusing on normative variables would ever have looked. They focused on the phenomenology rather than the content of cognition. They suggested that people attend to the experience of thinking itself -- for example, to the ease with which an idea comes

to mind. In the case of the availability heuristic people's likelihood estimates for certain events were inflated by manipulating the readiness with which relevant examples occurred to them. When one finds it easy to imagine a given scenario or to retrieve from memory a given example, one is likely to judge it as more probable or more frequent than events that are less easy to imagine.

Despite the volume of research stimulated by the heuristic notion, psychologists have by and large failed to pick up on the most revolutionary aspect of the conceptualization -- the notion that an important input to judgment and decision making is the information provided by the momentary experience of aspects of one's own cognitive processes. Such a heuristic is subject to error, however, because one is generally unable to say whether the experience of ease resulted from the frequency of the event or from an irrelevant property of the event that made it salient. Like the other examples I cite, the subjective experience involved is subject to misattribution, as can be seen by considering an experiment reported by Schwarz. Bless, Strack, Klumpp, Rittenauer-Schatka, and Simons (1990).

Subjects participated in an experiment on autobiographical memory. They were asked either to recall situations in which they had behaved assertively and felt at ease or to recall situations in which they behaved unassertively and felt insecure. In each of these conditions, half were instructed to recall six examples and half to recall twelve examples. Afterward, subjects made a series of ratings purportedly to explore their interest in an assertion-training program. They were also asked to evaluate their assertiveness, feelings of security, and feelings of anxiety. Together these served as a measure of assertiveness.

The results showed a significant interaction between the number of examples requested (6 vs. 12) and the content of recall (assertive vs. unassertive). Subjects who had described six examples of assertive behavior rated themselves as more assertive than those describing twelve examples (and vice versa for recalling examples of unassertiveness). This was the case even though subjects in the twelve-example condition came up with more examples. One explanation is that subjects were attending, not to the number of examples they thought of, but to the ease with which examples of a certain kind came to mind. The authors considered the possibility that the results might simply reflect a tendency for subjects required to think of more examples to come up with poorer ones, but ratings of the last few examples given in each case showed no difference in the quality of examples in the twelve-example as opposed to the six-example condition.

Schwarz, Bless, Strack, Klumpp, Rittenauer-Schatka, and Simons (1990)

Experience: Ease of retrieval

Induction: Asked to recall either 6 or 12 examples of assertive (or unassertive) behavior

Attribution manipulation: Music was played that was said to facilitate memories of being insecure or memories of being assertive.

Judgment: Own assertiveness

Results: Assertiveness judgments depended on the ease of retrieval (6-example condition) rather than the number of examples recalled (12-example condition). The effect was eliminated when subjects misattributed the experience of ease to an external source (music).

In an additional experiment, the same basic procedure was used but the apparent diagnosticity of the ease or difficulty was varied. This was done by having subjects listen to "meditation music" over headphones as they completed the recall task. In half of the

cases, subjects were told that the music was known to facilitate the recall of autobiographical memories either concerned with assertiveness or concerned with insecurity. In conditions where the music was believed to facilitate the kind of recall requested, the experienced ease of retrieval would have been seen as nondiagnostic of one's true assertiveness, whereas in conditions where the music was believed to facilitate the opposite kind of recall, experienced ease would have been diagnostic.

The results of this manipulation showed that the effect of experienced feelings on judgment depend on their apparent informativeness. A significant three-way interaction showed the action of the availability heuristic in the high diagnostic condition, but not in the low diagnostic condition. Indeed, in the low diagnostic condition, the reverse was found. That is, when diagnostic, subjects used the experience of the ease of bringing relevant examples to mind as information about their own assertiveness. But when their feelings were assumed to be nondiagnostic, subjects attended to the number of examples retrieved rather than to the experience of ease.

Familiarity and Fame

A prime example of the processes I have in mind can be seen in the experiments on perceived famousness by Jacoby and his collaborators. In one particular study (Jacoby, Kelley, Brown, & Jasechko, 1989), a list of nonfamous names was presented for subjects to read. They were informed that all of the names were nonfamous, and that the study concerned the factors that influence the pronunciation of names. In a second part, the names were presented again along with some new nonfamous names and some famous names. The task was to indicate which were in fact famous. The famous names were only moderately well known, ones that undergraduates would be likely to recognize as famous without necessarily being able to recall why -- Helmut Schmidt, Marsha Mason, Anne Hathaway, Arthur Rubinstein, Thomas Hobbes, and so forth. The list of comparable nonfamous names included such names as Sandra Brophy, Adrian Marr, Sebastian Weisdorf, Joseph Parcenti, and Larry Jacoby.

The results showed that when nonfamous names were familiar, they were sometimes assumed to be famous. A comparison was made between judgments of old and new nonfamous names made immediately or delayed to the next day. Compared to the immediate condition, judgments after a delay showed a small but significant familiarity effect: Nonfamous names that had appeared in the initial list were more likely to be judged famous than nonfamous names that had not been presented.

It is noteworthy that the effect occurred only in the delayed condition. Subjects had been told at the time that the names on the first list were nonfamous. If they recognized a name as having been presented earlier, therefore, they knew it was not famous. Because this true source of familiarity was relatively more salient in the immediate condition, the same effect was not seen there. A test of reaction times showed parallel effects. Subjects were slower to decide about the famousness of old nonfamous names than new nonfamous names on the delayed test. With time, the source of the feelings of familiarity apparently became harder to identify.

Jacoby, Kelley, Brown, and Jasechko (1989)

Experience: Feelings of familiarity

Induction: Having subjects read names as part of a separate study of name pronunciation.

Attribution manipulation: Judgments made either immediately after or a day after initial name presentation.

Judgment: Whether or not names were famous

Results: When the prior presentation of nonfamous names was not salient (delay condition), familiar names were more often judged famous than when the prior presentation was salient (immediate condition).

Consistent with the approach taken here, Jacoby et al. interpreted the results as indicating that participants made famousness judgments on the basis of feelings of familiarity in response to the names they had previously seen. They also had a similar view of the key role of attribution. The effect requires that subjects assumed their experience of familiarity to have been caused by the famousness of the names rather than by their prior presentation in the experiment. Knowing why the names seemed familiar would not have made them seem any less familiar, of course, but it would have changed the diagnostic value of the experience for judging fame.

This kind of experiment works because the experience of familiarity is the proximal cue for identifying both previously presented names and famous names. If, instead of identifying which were famous, subjects had been asked which names they had seen the day before, some of the famous names would presumably have been falsely identified as nonfamous names that had been previously seen. The effect depends only on the presence of cues that are relevant to the judgment goal and that are not attributed to an irrelevant source.

There are other examples of this same set of processes that I do not discuss in detail. One particularly nice example cited by Jacoby (1988) showed that prior presentation of a statement of trivia resulted in increased judgments of its truth (Begg, Armour, & Kerr, 1985). These results suggest that one of the cues we use to judge whether something is true is whether or not it is familiar. It is often observed that if one tells a lie often enough, people begin to believe it.

Expectations

Another set of phenomena susceptible to the same analysis are expectation effects. A strong expectation that a particular event may occur shares many of the properties with an actual occurrence of the event. Indeed, to be in a state of expectation regarding a particular experience (as opposed to simply holding the belief that a particular experience is possible) may sometimes involve simulating some level of the experience itself. A related point was made by Neisser (1976) with regard to the relationship between perceptual and imaginal experience. "I believe the experience of having an image is just the inner aspect of a readiness to perceive the imagined object" (p. 130). As Neisser pointed out, imagining is not normally confused with perceiving in the moment, because the latter involves the continual pick-up of new information. When retrieved at a later time, however, the imaginal and perceptual experience of a situation might be more difficult to separate. Indeed the neuropsychological evidence indicates that an imagined image of a particular scene involves the same circuitry as a perceived image of the same scene (Farah, 1989).

An analogous state of affairs may exist for expectation. It may sometimes be difficult to disentangle the cognitive content left from prior experience and the cognitive content left from prior expectation unless the two are well marked in memory. Indeed, whether prior expectation leads to contrast or assimilation effects in judgment might be controlled by whether or not subjects verbalize their expectations before they have the experience itself. Labeling the expectations, rating their strength, or otherwise isolating expectations mentally should create contrast effects when experience does not match expectations. But if such mental segmentation is not encouraged by the procedures, one might expect assimilation effects in which judgments tend to conform to expectations. This was the case in a series of

studies undertaken by Wilson and his colleagues.

Wilson, Lisle, Kraft, and Wetzel (1989) had subjects judge cartoons that they either expected to be funny or about which they had no expectation. From the perspective of the analysis outlined here, it seems likely that expectation-based cues would mingle with perception-based cues in subjects' experience, and such intermingling of cues would produce expectation effects. The results showed that funniness ratings were indeed affected by expectations for some cartoons. Specifically, expectations influenced ratings of cartoons that were not very funny, but did not do so for truly funny cartoons. Reactions were not affected for truly funny cartoons presumably because the expectation-based cues were redundant with perception-based cues. And reactions were affected for less funny cartoons presumably because the combination of expectation-based cues of funniness and perception-based cues were funnier than perception-based cues of unfunniness alone.

Wilson, Lisle, Kraft, and Wetzel (1989):

Experience: Expectation that cartoons would (or would not) be funny

Induction: False information about reactions of previous subjects

Attribution manipulation: None

Judgment: Funniness ratings of cartoons

Results: Judgments were expectation-congruent, and expectation-congruent judgments were faster accompanied by more (or less) facial mirth.

In this study, however, expectation appeared to induce an experiential change rather than merely a rating bias. Evidence for this comes from the fact that for the three cartoons that were not very funny, subjects not only rated them as funnier but showed more facial mirth when they expected them to be funny than when they had no expectations. This is of some interest given Neisser's argument, cited previously, that imagination is unlikely to be confused with perception because of the continual pick-up of information in perception. In this situation, however, it appears that expectation can be confused with on-line experience. This is presumably due to the peculiar nature of humor. The action in humor occurs all at once when the elements of a joke come together in the punch line (or analogously in the moment of comprehension of a cartoon). Unlike Neisser's example of visual perception, humor does not involve a continual pick-up of information, but only a single moment at which expectation and experience come together to create a single experience.

Well-known comedians presumably enjoy similar expectation-driven effects. In many cases, the audience may begin to smile and even to laugh before the comedian actually says anything. There is no way to correct for our expectations because we generally do not focus on having an expectation as a separable event. Under conditions in which one is led to isolate one's expectations or specify them with precision, a contrast effect may occur when expectations and experience do not match. However, no contrast effects were found in the studies by Wilson et al. (1989).

Distraction and Boredom.

A somewhat different example of this process can be seen in a recent study by Damrad-Frye and Laird (1989). Subjects made a series of self-ratings after listening to a tape-recorded presentation of a Psychology Today article. As they listened, distracting sounds came from the next room from which a television soap opera could be overheard. Of primary interest were subjects' ratings of how bored they were. The noise from the next room was loud in one condition, only moderately loud in another, and absent in a third. When present, the noise tended to distract subjects' attention from the tape.

When subjects in the loud condition were asked why their minds wandered, they correctly identified the external stimulus as the source of their distraction. In the moderately loud condition, subjects were equally distracted, but the source of their distraction was less salient. As a result, they perceived the tape to be boring. Danrad-Frye and Laird's interpretation is quite compatible with the present view. They concluded that:

> When subjects were distracted by an outside noise but did not recognize the role of that noise, they reported feeling bored and did not enjoy the task. Apparently then, their feeling of boredom came from the recognition that they were not attending to what they should have been. Lacking any other explanation for their inattention, they had no alternative except to believe that they were bored with the material. (p. 319)

Damrad-Frye and Laird, 1989:

Experience: Distraction, inability to pay attention

Induction: Soap opera playing on TV in next room

Attribution manipulation: Varying salience of true cause of distraction, barely audible TV versus loud TV

Judgment: How bored while listening to taped lecture

Results: Experience of being unable to attend led to self-perception of boredom, but making the external cause of the distraction more salient (loud TV) eliminated the effect.

The authors placed their study in the context of self-perception theory (Bem, 1972), and they discussed the implications of the theory for understanding emotion (and other nonemotional experiences such as boredom). According to self-perception theory, "Emotional feelings are presumed to arise from emotional actions rather than the reverse" (Damrad-Frye & Laird, 1989, p. 315). Although this view has generated interesting research, it mistakenly assumes that because the emotion cycle can be activated by expression, that expression is therefore the seat of emotion. In fact, emotion can be triggered by entering the system at any of a number of places. This fact indicates only that the components of the emotion system are richly intertwined and influence each other, not that behavior or expression is more basic than, say, thought or feeling.

Self-perception theory may be too committed to a behavioral view to yield a successful general account of emotion. A cardinal principle of the theory is that the subjective experience of emotion depends on the same cues that outside observers might use. Such a starting point requires us to assume that facial and behavioral expressions are essential to emotional experience. In contrast, the mood-as-information hypothesis (Schwarz & Clore, 1983, 1988) simply stresses the informative properties or the feedback functions of momentary subjective experience, regardless of whether the experience is of one's behavior, thoughts, or feelings.®IP0,0¯

Feelings of Knowing

What have been referred to as "cognitive feelings" (Clore & Parrott, 1991) have not been a common topic of psychological inquiry, perhaps because they rarely occur apart from the mental content that elicits them. There are also times, however, when such feelings do occur without relevant mental content, as in the tip-of-the-tongue phenomenon or in feelings of knowing. Some relevant work has been done by developmental psychologists interested in metamemory and in reading. In these areas one can encounter studies of such topics as "the illusion of knowing" (Glenberg, Wilkinson, & Epstein, 1982), "subjective certainty" (DeLoache & Brown, 1984), "realizing that you don't know" (Markman, 1977), and "feeling of knowing experiences" (Wellman,

1977). For example, Harris, Kruithof, Meerum Terwogt, & Visser, 1981) studied the reactions of eight- and eleven-year-old readers to anomalous sentences in a brief story. Only the older group was able to pick out the anomalous line as not fitting the story, but both groups read the anomalous sentences more slowly. The authors interpret their results as an indication that at both ages children generate "internal signals of comprehension failure," but that the older children tend to have learned better how to use such signals as information to locate the source of their comprehension difficulty.

Where Harris, and others, have tended to use the more neutral term "internal signals," I have used the term "feelings". In part, this is because my goal is to study the similarity between such signals and affective feelings. I propose that the important function of cognitive and bodily feelings, as well as affective feelings, is precisely their signal or information value. We cannot claim, however, that the nature and source of cognitive feelings is at all clear. Most of us have had the experience of holding steadfastly to a position in an argument because we felt certain, and also perhaps, with the emergence of new information or a different perspective, of having the feeling of certainty fade along with our persistence. Perhaps finding a match between the content of one's working hypothesis and the momentary content of memory produces a distinctive feeling, a sort of low level "Ah-ha" experience. In any case, we usually experience cognitive feelings in conjunction with focal cognitions about things that are familiar, surprising, confusing, or obvious.

The feeling-of-knowing experience is a good example of cognitive feelings. "Cognitive feelings" refer to the feedback from one's own cognitive processes, feedback that informs experiencers about their own state of knowledge. A paradigm for studying this experience, first developed by Hart (1965), can be seen in a study by Nelson, Leonesio, Landwehr, and Narens (1986). They asked subjects to try to answer a variety of general knowledge questions, such as, "What is the capital of Chile?" and "What was the name of Tarzan's girlfriend?" When subjects failed to answer correctly a preset number of items, say 12, these items were then re-presented in pairs on a computer screen. Subjects indicated for which question of each pair they experienced greater feelings of knowing. Subsequently, the items reappeared in a recognition test to assess the accuracy of the feeling of knowing.

The basic validity of feeling of knowing experiences has been demonstrated in many studies. In this one, the authors compared the relative validity of each individual's feelings with two other criteria -- the base rate item difficulty (normative probabilities of correct recall) and normative feelings of knowing. An individual's feeling of knowing was shown to accurately predict which items subjects would in fact be able to recognize later. These predictions were not as good as those provided by a knowledge of item difficulty (the base rates of correct recalls), but they were more accurate than simply averaging the feeling of knowing of the group. That is, subjects do have access to idiosyncratic experiential knowledge about what they know.

Nelson, Leonesio, Landwehr, and Narens (1986)

Experience: Feeling of knowing

Induction: Posing general knowledge questions that subjects could not answer but for which they could recognize answers

Attribution manipulation: None

Judgment: Ability to recognize correct answer

Results: Individual feelings of knowing did predict later recognition performance

From a system design point of view, it would seem like a useful feature for the individual to have access to whether or not something is in memory without actually having to retrieve it. Without such access, memory searches might be quite inefficient. Of course, we can know with high likelihood that we do not know certain kinds of information simply because it is not the sort of thing we would know. But for questions in domains of possible knowledge, the feeling and its absence serves as a signal for whether to keep searching or whether to abort the search. By such a process valuable processing time can be saved and endless, unproductive searches avoided. The basis of such experiences may include partial retrieval of the information sought. Yaniv and Meyer (1987) suggested that such experiences may function to keep a problem in one's mental cue until the missing parts are retrieved.

The Nelson et al. (1986) study differed from those discussed above in that there was no attempt to influence subjects' interpretations of their feelings through misattribution manipulations, but it seems likely that such procedures would be successful.

Uncertainty and Understanding

Clore and Parrott (1990) administered a standard group test of hypnotic susceptibility to a large audience as part of a hypnosis demonstration. During the hypnosis, subjects were given a guided fantasy designed to induce feelings of uncertainty and confusion. The feelings were induced by having subjects imagine being in a confusing lecture on computer programming. Most people in an unselected group are not particularly hypnotizable, and these nonhypnotizable subjects were therefore available as a control group. As expected, the highly hypnotizable subjects reported feeling more uncertain and confused than the low hypnotizable, control subjects. For half of the subjects in both groups, hypnosis was made salient as the cause of their feelings after they awoke. For the other half no explanation for the feelings was made salient. High versus low hypnotizability was crossed in a 2 x 2 design with instructions making the cause of feelings of uncertainty either salient or not. Subjects were then given a short poem by Rudyard Kipling. They were asked to read it and rate how well they felt they understood it and how well they could explain what the author had in mind.

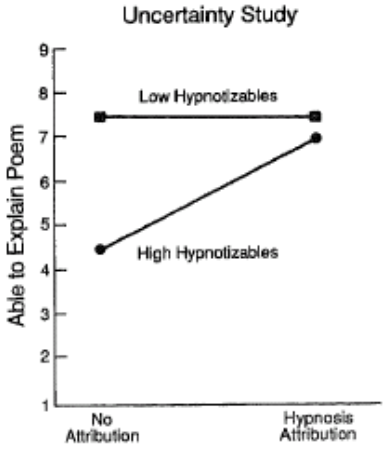

FIG. 5.3. Mean self-ratings of their understanding of a peom made by high and low hypnotizable subjects after a fantasy inducing them to feel uncertain (after data from Clore & Parrott, 1990).

The results in Fig. 5.3 show that the low hypnotizable subjects, who did not feel particularly uncertain, thought that they understood the poem reasonably well. Highly hypnotizable subjects did report experiencing feelings of uncertainty. Among these, the subjects for whom hypnosis was made salient as a cause for their feelings also thought they understood the poem reasonably well. But as predicted, highly hypnotizable subjects whose feelings of uncertainty remained unexplained were significantly less sure that they had understood the poem.

Clore and Parrott (1990)

Experience: Feeling of uncertainty

Induction: Guided fantasy in hypnotized subjects

Attribution manipulation: Reminding subjects of hypnotic suggestion or not

Judgment: Degree to which they felt they understood a poem

Results: Subjects attributing their feelings of uncertainty to an external cause (hypnotic suggestion) felt they understood the poem, but subjects experiencing the same feelings without such an explanation did not.

In a second experiment the effect was replicated with a different fantasy and in a different setting. The fantasy used in the replication was about feelings of uncertainty experienced when trying to decide between two equally attractive apartments to rent. The results were the same, showing that feelings of uncertainty that do not involve confusion have the same effect.

As in the emotional mood experiments, these cognitive feelings appear to inform the experiencer about his own state. In this case the feelings were metacognitive feelings, and the state was the subject's state of knowledge. The results suggest that one of the proximal cues for deciding how well one understands something is the presence of feelings of uncertainty or confusion.

Primed Thoughts and Judgment

I have discussed the role of feelings in judgment and have focused on the curious process whereby we are often in the position of being informed about our appraisal of a situation by our feelings. Evidence was presented in the first section to show this process with respect to affective appraisals (appraisals of value). The process was seen to generalize in the second section to cognitive appraisals (appraisals of knowledge). In this section, three experiments are presented to suggest that similar processes are at work when the output of the appraisal process is in the form of thoughts rather than feelings. In such situations also, we have little access to our appraisal processes except through our awareness of the output in the form of the concepts that come to mind. The emergent nature of the output is more obvious in the case of feelings, but the processes involved turn out to be very similar.

Ortony, Clore, and Collins (1988) have recently sketched one view of the process of affective appraisal, outlining the kinds of computations that may be involved when goals, standards, and attitudes eventuate in affective reactions. The products of these unconscious mental computations are sometimes thoughts and sometimes feelings, and sometimes it is difficult to distinguish the two (Parrott, 1988). I argue that the relevance of emergent thoughts and feelings to one's ongoing judgments is often established on strictly circumstantial evidence. Like intuitions, our thoughts and feelings often appear as from nowhere. The circumstantial evidence that links them to objects in the world is usually simply the fact that they occur in the right place and at the right time to be implicated in a judgment. So when asked, "Do you like Mary?" one may base an answer on how one feels when considering Mary or on what concepts come to mind or both. Prior moods or primed concepts can both contaminate judgment, because, in the main, one has access only to the results of appraisals rather than to the process itself. If they occur at the same time, one may have no way of separating the feelings and thoughts of appraisals from the feelings of mood and the thoughts stimulated by priming manipulations.

The heuristics involved in studies of feeling and in studies of primed thoughts are similar. In studies of mood, for example, the heuristic is, essentially, "If I experience positive feelings when I consider Mary, then my attitude to Mary must be positive." In studies of primed concepts, the heuristic is, "If I experience positive thoughts when I consider Mary, then my attitude to Mary must be positive." When subjects are searching for a concept and a primed concept comes to mind at just the right moment, the experience that it represents one's reaction to the object of

judgment is compelling. The apparent causal connection is no less compelling than the connection between the motion of one billiard ball and the motion of another that it hits. Indeed, in priming studies, the experimenter has to make the irrelevant source of the primed concept especially salient to prevent subjects from experiencing the appearance of the concept as a reaction to the object of judgment.

The studies to be described next are ones in which concepts are primed and are shown to have the potential to influence judgment. The primed thoughts are not feelings. The link between the studies of feelings and these studies of primed concepts is the emergent nature of the experiences of having a particular feeling or thought, the information value of these experiences, and the pivotal role played by subjects' attributions about them.

Subtle Priming and Reminding

The priming process has been the cornerstone of research in social cognition for the past decade or more. The procedure appears to offer a tool whereby investigators can map unconscious cognitive structure. Innumerable studies have been done in which primed concepts have been shown to influence recall and judgment. And in the domain of affect, priming is the primary alternative to the informational view as an explanation of mood effects. But the results of some recent studies suggest that priming, too, is mediated by the same experiential and attributional processes. Merely activating a concept is not sufficient for insuring that judgment and recall will be influenced in the direction of a primed concept. Priming requires subtlety. The priming words are sometimes presented subliminally (Bargh & Pietromonaco, 1982), sometimes as background stimuli in a Stroop task (Higgins, Rholes, & Jones, 1977), and are sometimes embedded in irrelevant tasks (Srull & Wyer, 1979). When activated in a blatant way, judgments are either unaffected by the prime or show the opposite (i.e., contrast) effects. Such results force one to the conclusion that priming effects depend on subjects' tacit assumptions about why particular thoughts have so readily come to mind (Clore, 1988; Clore & Parrott, 1991). It turns out, therefore, that priming research provides eloquent testimony to the importance of experiential processes. Explicit tests of the hypothesis that the use of particular mental content depends on how one punctuates one's experience comes from three interesting priming studies.

In a study by Strack, Schwarz, Bless, Kubler, and Wanke (1990), tones were preceded or followed by a word, and subjects were to indicate whether the tone was high or low and to write down the word that preceded the tone. Four of the ten words were synonyms either of "friendly/helpful"(positive prime) or of "dishonorable" (negative prime). This was followed by a distractor task in which subjects had to circle two-digit numbers that were divisible by 7. Half of the subjects then answered questions that reminded them of the first task. The dependent variables were evaluative judgments about an ambiguous target person who was described as having helped a friend by supplying him with answers for an exam. The behavior of the character was evaluatively ambiguous, because it could be seen both as helpful and as dishonest. The usual priming effect was found when the source of their primed mental content was not obvious. But when subjects were reminded of the priming episode, the opposite was found. Consistent with our logic, whether assimilation or contrast effects occurred depended on how salient it was to subjects that the concepts that had come to mind were from the priming task rather than from their reaction to the person they had just read about.

Strack, Schwarz, Bless, Kubler, and Wanke (1990)

Experience: Salience of certain words

Induction: Incidental priming

Attribution manipulation: Reminded of priming by rating aspects of the priming task

Judgment: Liking for person described ambiguously

Results: Contrast when reminded, congruence when not reminded

Strack et al. suggested that a two-stage model of priming is needed. They argued that theorists need to go beyond the determinants of activation; they also need to consider the factors that govern the use of activated information. Relevant data also come from studies by Martin (1986) and Lombardi, Higgins, and Bargh (1987), and from a study by Martin, Seta, and Crelia (1990), which is examined next.

Blatant Priming and Distraction

Martin, Seta, and Crelia (1990) conducted an experiment in which positive or negative concepts were blatantly primed, after which subjects were asked to rate an ambiguous paragraph (the Donald paragraph from Higgins, Rholes, & Jones, 1977). Because of the obviousness of the priming manipulation, subjects generally showed contrast effects in their judgments. That is, the ambiguous character was rated more positively after negative concepts were primed and more negatively after positive concepts were primed. But some subjects were distracted as they formed their impression by a secondary task in which they had to keep track mentally of the number of digits presented in a tape recording. This distraction kept the true source of their primed thoughts from being salient. Hence, the presence of positive thoughts in consciousness as they considered the character led subjects to like him, and the presence of negative thoughts led them to dislike him. But for conditions without the distracting secondary task, the external source of the passing thoughts was more salient. Under these conditions, the positive or negative thoughts were attributed to the priming task and therefore were not used as data for subjects' judgment about the character.

Martin, Seta, and Crelia (1990)

Experience: Salience of positive or negative concepts

Induction: Blatant priming; having subjects paraphrase positive and negative self-referent (Velton) statements

Attribution manipulation: Presence or absence of secondary task

Judgment: Liking for person described ambiguously

Results: With a secondary task, mood congruence was found, without a secondary task contrast effects were found (because subjects could focus on the blatantness of the prime).

There are now a number of studies by Martin and others in which varying the obviousness versus the nonobviousness of priming manipulations yielded with similar results. The consistency of results shows that there is nothing automatic about the effects on judgment of priming manipulations. One interpretation of these effects is that the key to the use of the momentary contents of consciousness in judgment lies in perceptions of the causal belongingness of the information to the task at hand. When one experiences relevant mental content as one is posing the judgment question, one is quite likely to use the information. Whether one uses it or discounts it depends on one's perception of its source. If no disqualifying information is encountered, it is likely to be taken by default as the answer. If, for example, one is asked the capital of Virginia and finds the word "Madison" in consciousness, one might assume Madison to be the capital. But if it were salient that one had just been introduced to someone named "Madison," then one would be likely to discount that information and search further.

Anchoring and Salience

An elegantly simple demonstration of this same process was reported by Kubovy (1977), in a study in which he asked subjects to generate a random number. By varying the exact wording of the instruction, he was able to both implant a suggested number and vary the degree to which his suggestion of a particular number was obvious. For example, when asked to "name the first digit that comes to mind," about 2% of the subjects came up with the number "1," but when asked to "name the first one digit that comes to mind," 18% chose the number "1". When made subtly salient in consciousness in this way, the number "1" was quite frequently chosen by subjects. But when the number was made still more salient by telling subjects to "name the first one digit that comes to mind, like one," this process was reversed. With this more blatant suggestion, only about 5% gave "1" as a response.

Kubovy proposed a two-step model that is quite compatible with the logic of feelings-and-cognitive-experience-as-information model. He suggested that one first retrieves an answer to the question posed and then checks on the appropriateness or representativeness of the answer.

Kubovy (1977)

Experience: Encountering a certain number in consciousness

Induction: Mentioning a number in the instructions to the task

Attribution manipulation: Varying the obviousness with which the number is suggested

Task: Choosing a random number

Results: Suggested number was chosen more frequently when it was salient in consciousness, but less frequently when the external source of its salience was obvious.

When it is relatively clear that the source of the number was the suggestion of the experimenter, then the number is rejected by most subjects because it is not, therefore, a good example of a random number. Here again, the use of cognitive content that one finds in working memory depends on one's attributions about its source.

Switzer and Sniezek (in press) have applied this same technique in a study of anchoring and adjustment effects. They showed that a completely irrelevant number that is made salient can influence how subjects set performance goals. They had subjects work on a computer to unscramble and make sense of scrambled sentences that had been mixed together from two completely different passages. In addition to performing this task, subjects were to indicate how many they expected to be able to solve. They found that subjects' expectations were influenced by whatever numbers were floating around in their heads, regardless of the numbers' relevance. Sometimes the number referred to the previous subjects' performance, but other times it was simply the number of the experiment that had been mentioned. When making such a judgment, subjects pose the question to themselves and attempt to generate a number with which to answer it. If a number is already present in working memory, it is likely to be used unless it is either explicitly tagged as referring to something irrelevant or is in some more subtle way perceptually grouped with distinctively different events.

Punctuating Mental Experience

This chapter has focused on judgment bias, but that emphasis merely reflects the fact that studying bias is a convenient research strategy. The overall goal is to understand how human social judgment ordinarily works so well. The research discussed suggests that experiential factors play a larger and more direct role in these judgments than has previously been realized, and, importantly, that this is an

adaptive arrangement. Although the practice of basing judgments on momentary feelings and passing thoughts sometimes leads to suboptimal outcomes, the main lesson from the evidence is not so much that such feelings and intuitions lead us astray, but that they are utterly basic to whatever it is that we mean by "human judgment."

The guiding criterion for whether or not particular thoughts or feelings will be integrated into a judgment concerns their apparent appropriateness. The authors of the chapters in this book agree on this point, referring variously to the critical variable as "appropriateness" (Martin et al, 1990), "relevance" (Schwarz, this volume), or "representativeness" (Strack, this volume). But at a more fundamental level, what underlies appropriateness, relevance, and representativeness is how people parse the moment to moment flow of their experience. In a study by Martin (1986) for example, simply varying whether subjects perceived that they had finished the priming task or not determined the results. The key to the results was whether subjects mentally punctuated the experience or let it run on into the next experience. Keeping in mind the gestalt principles of Heider (1958) on which attribution theory is based, what one needs to know to predict judgment is the perceptual grouping of relevant experiences. Indeed, "appropriateness", "relevance", and "representativeness" in this context simply refer to the degree to which a perceiver tacitly sees one cognitive feedback experience as grouped with or as belonging to another experience--the experience of the object to be judged. That grouping can be based on an explicit causal attribution or on any of a variety of more passive processes that also result in the separation or lumping of two experiences.

Some years ago, I conducted a series of studies concerned with order effects in impression judgments (e.g., Clore, Wiggins, & Itkin, 1975; Stapert & Clore, 1969). Of interest in these studies was whether impressions formed on the basis of positive information would be more positive (assimilation) or less positive (contrast) when preceded by negative information. The key to finding assimilation or contrast effects in such studies turned out to depend on whether subjects segmented the information string into one or two parts. Contrast effects occur when the two parts are separated by preliminary judgments made in the middle of the sequence, and assimilation effects occur when no intervening judgments are made. Interestingly, it is not necessary for subjects actually to make intervening judgments; merely thinking about making them is enough (Byrne, Lambreth, Palmer, & London, 1969). What is important is the segmentation of the judge's own experience. The same principle appears to govern the occurrence of assimilation and contrast effects in mood research and priming research. Making attributions about the source of our affective experience, as in the Schwarz and Clore studies, is simply one way of governing how subjects organize their experience.

In the above research, segmentation was influenced by the salience of certain factors and the timing of questions. It can also be based on qualitative differences among feelings. Gallagher and Clore (1985), for example, showed that pre-existing feelings of anger sometimes bias blame judgments, but not risk estimates. Similarly, fear can bias risk estimates but not blame judgments. In these cases, experiential data and judgmental requirements were grouped qualitatively. Just as one would not look in the refrigerator for one's car keys, one would not focus on hunger cues to assess blame. Having said that, however, one can immediately think of cases where tired and hungry children (or adults) do show a greater propensity for reacting with anger and blame. It seems likely, however, that in such cases they are not actually focusing on these bodily hunger cues but on affective ones. Presumably when one runs out of energy

to cope with the demands of civilized social interaction, even the smallest obstacle can cause a sizeable frustration reaction. When the tired and hungry father screams at his child for spilling her milk, his appraisal of blame is not based on feelings of tiredness or hunger directly, but on feelings of frustration caused by a momentary lack of coping resources. Unlike feelings of hunger, feelings of frustration, of course, are often a completely appropriate element in judgments of blame. Although the father might reasonably be expected to be able to differentiate his experience of hunger and tiredness from his frustration at the child's accident, he would have much more difficulty distinguishing his experience of frustration at things in general from his frustration with this incident, hence such unseemly punitiveness is very common.

I have emphasized the role of attribution and the punctuation of one's momentary experience as the gate that controls the effect of emotion on judgment. A different view was taken by Allen, Kenrick, Linder, and McCall (1989). They studied the effect of irrelevant arousal on men's reaction to an attractive woman. The arousal was induced in some cases by exercise and in some cases by threat of electric shock. They found that aroused men were more sexually attracted to the woman regardless of whether the true source of the arousal was made salient, a finding that argues against the misattribution explanation. However, what is required for attributional discounting is for subjects to see the explanation offered as adequate to account for their experience. It seems likely that subjects had a different implicit theory about their experience of sexual attraction than the investigators. Explanations of fear- or exercise-induced arousal probably seemed relevant to subjects' experience of sexual attraction. What might have been required is an alternative explanation of their experience of sexual attraction rather than of their experience of arousal.

Constructivism

What unites research on momentary feelings and thoughts and research on the variety of other influences on judgment covered in this volume is that they argue for a constructivist view of judgment (Martin, this volume). The underlying theme of this book is the observation that the normative or received view of human judgment may be wrong-headed in some fundamental respects. It has been widely assumed that when a judgment is made, stored beliefs are accessed and combined on the basis of some implicit calculation about their weighted relevance to a particular domain of judgment. An expressed judgment is thus seen as a more or less direct reflection of this calculated value. In test theory terms, the assumption is that there is an internal true score for a judgment and that expressed judgments tap that true score plus some error.

One of the points of disagreement between a constructivist view and the standard view concerns the extent to which there is such an internal true score. A constructivist view (or an ecological view) implies that judges may not know themselves as well as the standard model assumes, and that the computations one engages in are highly context specific or situated. In the spirit of self-observation theory (Bem, 1972), people do not have full access to what they think, so that even if such a true score model were appropriate, the inner view that gives one privileged access to one's own beliefs is murky at best. As a result, one is in the odd position of having to observe one's own mental life to divine what one thinks (just as others might have to observe one's behavior).

A second subtheme in this constructivist view is the idea expressed by those espousing a "garbage can" model of decision making (Cohen, March, & Olsen, 1972). According to their model, judgment and decision making is like the art of found objects: One tends to make

the best composition one can with whatever is at hand. The resulting judgment is therefore heavily dependent on what is cognitively salient at the time. Laboratory studies of judgment tend not to observe this process because they control the information presented. This found-object aspect of judgment would not necessarily be problematic if one could weight each found object appropriately. Many irrelevant considerations could simply be weighted zero, as is done in the computational algorithms for multidimensional scaling solutions. But a corollary of the garbage can approach seems to be that whatever factors show up in consciousness, however tangentially related, get a more or less equal vote in the decision. This is perhaps a consequence of the self-observation aspect of the process. One tends to assume that a factor is relevant simply by virtue of the fact that it has crossed one's mind while considering the object of judgment. It is within this context that it seems likely that mood and emotion have direct effects on judgment rather than, or in addition to, indirect effects.

Summary

The theme of this chapter is that social cognition theorists have overlooked the role of immediate experience. The study of emotion tends to highlight the importance of immediate experience, because one of the most distinctive aspects of emotions is that they are experienced. The cognitive activity that leads to emotions results in a distinctive experiential state involving feelings, thoughts, and urges. I have argued that this experiential state is not an epiphenomenon, but rather that it plays a causal role in other cognitive processes; that it is a form of self-produced feedback that serves as input to subsequent cognitive processes. Schwarz and Clore's (1983) study of mood, misattribution, and judgment was reviewed and the mood-as-information model was contrasted with explanations based on priming. In addition, I argued that emotion and mood exercise their influence on judgment directly rather than solely indirectly, as traditional judgment theory has insisted.

I also proposed that the use of feelings as information is not unique to emotion but probably characterizes all feeling-based judgments. In support of this claim, evidence from several different areas of research was reviewed, including uncertainty and understanding, the availability heuristic, the overnight-fame effect, the role of distraction in boredom, expectation effects, and feelings of knowing. I also noted the similarity between the processes governing the role of feelings in judgment to those governing the role of primed concepts in judgment. Several experiments were reviewed including studies of subtle priming and reminding, blatant priming and distraction, and anchoring and salience. The critical feature determining whether or not feedback from one mental process affected the next in these studies lay in the manipulations of procedural variables and how they influenced subjects' punctuation of their own momentary mental experience. A theme that was hinted at, but not fully explored in this chapter, is that all judgments necessarily involve some such feeling-based or appraisal stage, and that this is really what we mean when we refer to "human judgment." Finally, I argued that the effects observed when such experientially based judgments are studied encourage a constructivist view of judgment.

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Figure Captions

Figure 1. Mean life satisfaction scores after a sound-proof room has or has not been made salient as a possible cause of feelings of tension for happy and sad subjects (Schwarz & Clore, 1983).

Figure 2. Mean life satisfaction scores for respondents interviewed on rainy or sunny days when weather was or was not made salient as a source of their mood states (Schwarz & Clore, 1983).

Figure 3. Mean self-ratings of their understanding of a poem made by high and low hypnotizable subjects after a fantasy inducing them to feel uncertain (Clore & Parrott, 1990).