6 Unconscious Processes in Social Interaction

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It is a cardinal principle of social psychology that an individual's experience, thought, and action is highly sensitive to details of the social situation in which it occurs. This principle accounts for the extraordinary amount of cross–situational variability that is characteristic of human social behavior: people appear to be quite inconsistent in what they do and say from one context to the next. However, this does not mean that human behavior is inherently unpredictable; nor, as the behaviorists might have had it, that persons are at the mercy of environmental stimuli and reinforcement schedules. Rather, we now know that the effects of the environment are largely mediated by the cognitive processes by which the individual gives meaning to each situation which he or she encounters; a meaning that can differ widely depending on the precise set of cues available in the setting and the cognitive resources that the individual brings to it.

Thus, our behavior is not affected by the situation as it would be objectively described by a third-person observer, but rather as it is subjectively construed by the actor him- or herself. Social behavior, then, is not inconsistent, nor is the lawfulness of human behavior given by tracking the functional relationships between stimulus and response. Rather, the consistencies in social behavior are to be found at the cognitive level: people behave similarly across situations they construe as similar; their behavior changes when their construal changes. For this reason, cognitive social psychologists have long been interested in how social knowledge is represented and processed in the mind: how we form impressions of ourselves, others, and the social context in which we interact; how we explain, and give meaning to, others' and our own behaviors; how we predict what is going to happen next as an interaction unfolds; and how we plan our responses to events that actually transpire, and the actions that we hope will achieve our short- and long-term goals.

THE GENERAL SOCIAL-INTERACTION CYCLE

The cognitive perspective on social interaction is illustrated in Figure 6.1, which depicts what might be called the *general social-interaction cycle.* The scheme is also known as the general social interaction sequence (see Darley

and Fazio 1980), but I prefer to emphasize its cyclical aspects. This scheme can be used to represent any dyadic (two-person) interaction, from something as mundane to buying a toothbrush to something as monumental as proposing marriage. The two participants have been assigned to the respective roles of actor and target. In some respects this assignment is arbitrary, because—as will be clear in a moment—both participants are simultaneously actor and target of the other's action; but for purposes of this illustration, the actor role is assigned to the person who initiates the interaction.

In the first phase, the actor enters the situation, which may be defined as the immediate context in which he or she physically encounters the target. At this point, the actor has a goal, or something that she intends to accomplish—like asking the target for a date Friday night; but she also carries with her a fund of social knowledge concerning herself, the target, and other more generic factual information that is relevant to her current goals; and she also carries a repertoire of cognitive and motor skills that she can use in the course of the interaction. She needs to know, for example, whether the target is currently dating someone else, and if he has expressed any interest in her. She also needs to know how to start a conversation and how to bring it around to the subject of Friday night. This fund of declarative and procedural social knowledge may be called *social intelligence* (Cantor and Kihlstrom 1987).

In the second phase, the actor forms an impression of the target in context. Does he still seem interested? Is this a good time to ask? In doing so, she combines her preexisting knowledge (retrieved from memory) with information derived from the immediate situation (acquired through perception). On the basis of this impression, she either approaches the target or shies away, and she either pops the question or not. In short, she acts on the basis of her impression of the situation. Let's assume that she asks him for a date.

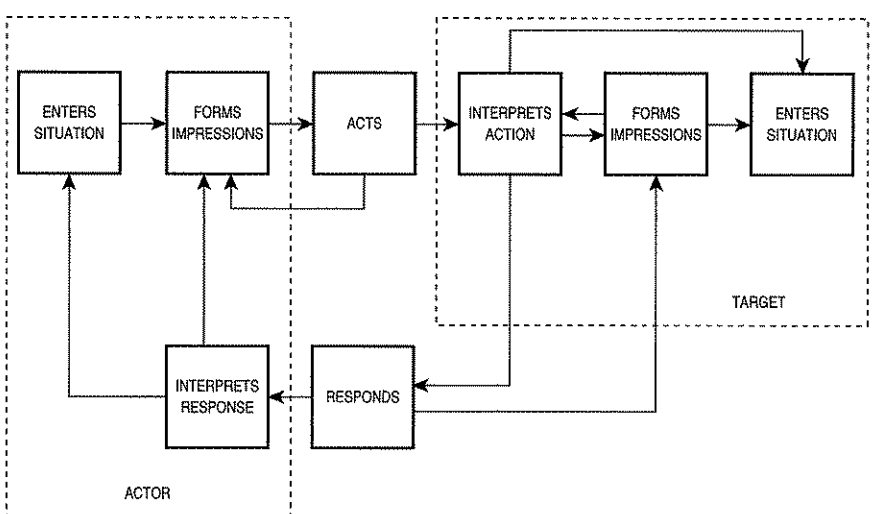

Figure 6.1 The general social interaction cycle (adapted from Darley and Fazio 1980).

Once she has acted, our attention turns to the target. He too, has entered the situation, either actively or passively, and he too comes with a fund of preexisting knowledge. And he, too, has been forming an impression of the situation in which he finds himself. Now that she has actually asked him for a date, the situation is clarified. As it happens, he is free Friday night, but he stops to wonder whether he should play "hard to get," or perhaps wait for a better offer from someone else. In the end, he decides to hold his options open for Friday night; but he doesn't want to spurn the actor entirely. Therefore, on the basis of his impression of the total situation, he responds to her initial salvo: he says he can't see her Friday, but proposes Saturday instead.

Now attention shifts back to the actor: she has to revise her impressions. Perhaps he is seeing someone else after all, which is why he is busy Friday night; but he is obviously not uninterested in her, or else why would he offer to substitute Saturday night? As it happens, she's free Saturday night, but if she says yes, she immediately communicates that she doesn't presently have a date for either Friday or Saturday night. Is this something he should know? If she agrees to Saturday night, does she make herself a pawn in whatever game he might be playing with the woman he's dating Friday night? Or is the Friday-night woman a pawn in a game he's playing with *her*? In the clinch, she takes a chance and accepts. Now the ball is back in the target's court. And so it goes, in a cycle of exchanges in which each participant is trying to make sense of what the other one is doing, and planning and executing behaviors in accordance with this understanding.

Of course, in addition to the cycle going on between actor and target, there are also cycles going on within each of these participants, as their own behavior feeds back to them and changes their impressions of themselves. Thus, for example, the actor may have wondered if she had the nerve, and the social skill, required to ask this man for a date: now she knows she does (this is self-efficacy information which she will now use to guide other social interactions in the future; Bandura 1986). Similarly, the target may never before have been in a position where he had to negotiate two overlapping dating relationships, and now he knows that this particular skill is in his repertoire. In any event, the point is that each participant behaves in accordance with his or her construal of the other, and of him- or herself; each participant's construal is modified by the other's behavior; and by his or her own behavior as well—a situation reflecting what Bandura (1986) has called *reciprocal determinism.*

Of course, not all of the mediators of social interaction are cognitive in nature. The participants' feelings and motives play important roles as well. Each participant enters the situation with a particular goal in mind, and other goals arise very quickly as the interaction unfolds. Furthermore, the participants' behaviors are determined by the attitudes that each has toward the other and the emotions that each arouses in the other. This situation fits nicely with the general doctrine of mentalism that underlies contemporary psychology: what we do is caused by what we think, feel, and want.

THE PSYCHOLOGICAL UNCONSCIOUS

In analyzing the cognitive, emotional, and motivational determinants of social interaction, and other forms of behavior, most research has focused on conscious mental states. This emphasis parallels that of psychology in general, which in its beginnings, and again since the outbreak of the cognitive revolution, has focused on conscious percepts, memories, and thoughts. However, in recent years it has become increasingly clear that behavior, including social behavior, is also influenced by mental structures and processes that operate outside of phenomenal awareness and voluntary control. These unconscious aspects of cognition, emotion, and motivation may be called the *psychological unconscious* (Kihlstrom 1990).

Elsewhere, I have distinguished among three different aspects of the psychological unconscious (Kihlstrom 1984, 1990, 1994b). There are, first of all, procedural knowledge structures that operate automatically, without conscious intent, and whose execution consumes little or no attentional capacity. Procedural knowledge is unavailable to introspective phenomenal awareness, and can be known only indirectly, by inference. It is unconscious in the strict sense of the term. Second, there are cases of preconscious processing, which involve declarative rather than procedural knowledge. Most demonstrations of implicit memory (Schacter 1987) and implicit perception (Kihlstrom, Barnhardt, and Tataryn 1992) fall into this category, because they involve stimuli or memory traces that have been degraded to such an extent that they are not accessible to conscious awareness. But there is a third category of unconscious influence, observed in hypnosis and states of pathological dissociation, where the percepts and memories are not degraded in any sense—yet they are still inaccessible to awareness. Following the tradition of James, Janet, and Prince, I refer to them as *subconscious* or *coconscious.* Subconscious processing is theoretically important, because it indicates that consciousness is not merely a matter of attention or activation, or the engagement of particular brain structures or neural patterns. In my view, subconscious processing indicates that consciousness requires that a connection be made, and preserved, between two activated mental representations: of an event, and of the self as the agent or experiencer of that event (Kihlstrom 1994a).

The literature documenting the role of strictly unconscious processes in social cognition and interpersonal behavior is huge (for reviews see Bargh 1994, Uleman and Bargh 1989). It is by now generally accepted that attitudes, impressions, and other social judgments, as well as aggression, compliance, and other social behaviors, are often mediated by automatic processes that generally operate outside our awareness and voluntary control. Most of this literature, however, assumes that these automatic processes operate on cognitive contents—mental representations in perception and memory—that are themselves accessible to consciousness. This is a more controversial matter in social psychology, just as it is in cognitive psychology (Greenwald 1992, Kihlstrom 1990, 1994b). Accordingly,

in what follows I will sample studies in which implicit percepts and memories mediate the cognitive, affective, or behavioral aspects of social interaction.

SOCIAL JUDGMENT AS IMPLICIT MEMORY

Consider, for example, the brain-damaged patient Boswell, studied by Damasio and his colleagues (Damasio, Tranel, and Damasio 1989). By virtue of bilateral damage to temporal and basal forebrain structures resulting from herpes encephalitis, Boswell is densely amnesic: he is completely disoriented as to time and place, and fails to recognize health professionals who have worked with him for as long as 13 years. Nevertheless, he is able to make accurate social judgments about the people around him. In an experiment, three staff members were instructed to behave in a consistently positive, neutral, or negative manner toward Boswell. Later, Boswell was presented with pictures of the staff members' faces, paired with the faces of people he had never met, and asked which he liked the best, whom he would approach for rewards, treats, and favors.

Although Boswell never recognized the faces as familiar, he consistently chose the individual who had treated him well, and rejected the person who had treated him badly. These choices are clearly related to his past experiences with these individuals. Boswell's behavior illustrates the dissociation between explicit and implicit memory (Schacter 1987): his choices are clearly affected by past experiences, in the absence of conscious recollection of those experiences. Put another way, Boswell's past social interactions are unconsciously influencing his present ones. It's very much the situation portrayed by the Roman epigrammatist Martial, as freely translated by the seventeenth-century English poet Tom Brown (see Howell 1980):

> I do not love you, Dr. Fell, but why I cannot tell;
> But this I know full well, I do not love you, Dr. Fell.

Boswell, too, knows whom he likes; but he doesn't know why.

In Boswell's case, social judgment is an expression of implicit memory. Johnson and her colleagues (Johnson, Kim, and Risse 1985) observed a similar effect in a group of patients with Korsakoff's syndrome. These patients suffer from bilateral damage to the diencephalon, including the mammillary bodies, which renders them densely amnesic for events that have occurred since the onset of their illness. In the experiment, the patients viewed pictures of faces paired with fictional biographies that characterized the target person in either positive or negative terms. Korsakoff patients show a gross anterograde amnesia, so they had no memory for the exposures on subsequent testing. However, when asked to indicate which faces they liked, they generally preferred the "good" faces (which had been paired with positive characteristics) to the "bad" ones (which had been paired with the negative characteristics).

IMPLICIT PERCEPTION IN EVALUATION AND BEHAVIOR

Social impressions can be influenced even when there is no substantive contact between perceiver and target. A salient example is based on a phenomenon known as the *mere exposure effect* (Zajonc 1968). The general idea behind mere exposure is that familiarity breeds admiration, not contempt: repeated exposure to unfamiliar stimuli increases likability ratings of those stimuli. The most prominent explanation of this effect is that we prefer the familiar to the unfamiliar; however, the effect occurs even when subjects do not consciously recognize the targets as familiar.

The mere exposure effect was demonstrated in a now–classic experiment by Kunst-Wilson and Zajonc (1980), who presented subjects with five tachistoscopic exposures of ten irregular polygons—presentations that were too brief to be consciously perceived; another ten polygons were never presented at all, and served as controls. Proof that the stimuli had not been perceived consciously was provided by a recognition test, in which the subjects were unable to distinguish critical from neutral stimuli. However, when presented with the same stimuli, and asked to make preference rather than recognition judgments, there was a clear difference between targets and lures. Thus, mere exposure, in the absence of any substantive contact between subject and stimulus, had an impact on affective judgments, even though the exposures themselves were not consciously perceived. Again, the subjects knew what they liked, but they did not know why.

Technically, the influence of prior exposures on subsequent evaluations counts as evidence of implicit memory. But in this case, we have more than a failure of conscious recollection. The critical events were never consciously perceived in the first place. Therefore, in this case evidence of implicit memory also counts as evidence of implicit perception (Kihlstrom *et al.* 1992). At this point, the subliminal mere exposure effect has been replicated many times—and as it happens, the mere exposure effects induced by subliminal stimuli appear to be greater than those induced by supraliminal ones (Bornstein 1989). The likeliest explanation for this difference is that when subjects consciously recognize the critical stimuli as having been presented before, they attribute their affective judgments to their prior exposures, and discount them. But subliminal exposures do not leave consciously accessible memory traces, so the proper attribution, and discounting, isn't possible. Conscious awareness is the logical prerequisite to conscious control: we cannot cope with something about which we do not know.

Subliminal stimulation can affect preferences, but can it affect actual behavior as well? One would like to think so. The Kunst-Wilson and Zajonc study (1980) bears on social interaction because social psychologists believe that an important determinant of behavior is the actor's attitude toward the target. If mere exposure induces more favorable attitudes, then interactions should go better. This hypothesis was put to the test by Bornstein and his colleagues (Bornstein, Leone, and Galley 1987), who presented college students with subliminal exposures of other students' faces. After four

exposures, recognition was at chance levels, but subjects showed a clear preference for those faces that had been presented previously—another demonstration of the subliminal mere exposure effect.

In a follow-up experiment (Bornstein *et al.* 1987), male subjects received subliminal exposures of the face of one of two other men. Then they were actually brought into contact with these targets, who were in fact confederates of the experimenter, under the guise of a poetry-rating task. The three subjects were instructed to read a series of poems, and then guess whether the poet was male or female. On predetermined trials the two confederates disagreed, forcing the lone subject to take sides. On these trials, subjects who had been exposed to confederate 1 tended to agree with confederate 1, while those who had been exposed to confederate 2 tended to agree with confederate 2; those who had not been exposed to either confederate divided their agreement evenly between them. So, in this case, subliminal exposure, which inculcates positive social judgments, also produced more positive behavior toward the objects of those evaluations.

The fact that subliminal stimuli can elicit emotional responses, even in the absence of repeated exposure, has been demonstrated by Niedenthal (1990). In one experiment, subjects studied a series of target slides depicting a cartoon character; these slides were preceded by a priming slide depicting a human face expressing either joy or disgust. By virtue of the tachistoscopically brief presentation of the face, and metacontrast produced by the cartoon, the primes were not consciously perceived. In the next phase of the experiment, the subjects performed a recognition task, distinguishing old from new cartoon figures. On this test trial, the targets were preceded by preconscious primes that were the same as, or different from, those presented on the study trial.

Considering the response latencies for targets, there were several results of interest. First, response latencies are longer for cartoons that were studied, or tested, in the context of disgust compared to the context of joy. Second, regardless of emotional valence, response latencies are shorter when the affective context at test is congruent with the affective context at study. A second experiment, using both emotional faces and emotional scenes as primes, yielded similar effects. So, the emotional valence of the primes had a palpable effect on recognition, even though the primes themselves were never consciously seen.

PRECONSCIOUS PROCESSING IN IMPRESSION FORMATION

Preconscious processing affects the content of social impressions, not just the speed of recognition. This fact was demonstrated by an experiment performed by Bargh and his colleagues. (Bargh *et al.* 1986). These investigators asked subjects to read a paragraph describing 12 behaviors displayed by a fictional person—what has come to be known in the trade as "The Donald Story" (Wyer and Srull 1979). Depending on the experimental condition,

five of these twelve items could be interpreted as acts of kindness or shyness, while the remaining seven items were neutral with respect to these traits. Moreover, the five kind or shy behaviors were themselves ambiguous, in that they could be attributed either to dispositional or situational causes. For example, one of the items read, "One of Donald's colleagues asked him to donate $2 to the Red Cross, and he agreed." From this information, we do not know whether Donald himself is charitable, or whether he succumbed to social pressure. However, the manifest task of the subjects was to rate Donald's personality in terms of his kindness or shyness.

Prior to reading the paragraph, the subjects had engaged in an ostensible vigilance task, in which they indicated whether targets appeared on the left or right of a fixation point in the center of a computer screen. Unknown to the subjects, the targets were actually words, presented for 60 milliseconds and followed by a central pattern mask—and thus too fast to be consciously perceived. In two conditions, 80 percent of the masked words were adjectives related to kindness or shyness; in a third condition, the words were unrelated to personality. Memory for these words, assessed on a subsequent recognition test, was very poor, confirming that the items had not been consciously perceived.

Obviously, the purpose of the vigilance task was to prime subjects' ratings of Donald as kind or shy. And, in general it succeeded. When Donald was presented as ambiguously kind, subjects who were primed with kind adjectives rating him as significantly more kind than those who were primed with neutral words. Similarly, when Donald was presented as ambiguously shy, subjects who were primed with shy adjectives rated him as significantly more shy, compared to those who were primed with neutral words.

Another study gave similar results (Bargh and Pietromonaco 1982). Here, masked adjectives relating to hostility were presented in the vigilance task, and the narrative contained a set of behaviors that were ambiguous with respect to that trait. Again, there was no recognition of the trait adjectives. However, the subjects who got hostile primes gave higher ratings of hostility to the target, compared to a control condition in which the primes were neutral. In both cases, then, the trait adjectives presented preconsciously during the vigilance task clearly influenced the subjects' subsequent impressions of the target Donald. This occurred despite the fact that the adjectives themselves were masked and thus not consciously processed by the subjects at the time of presentation. Thus, the effect qualifies as another instance of implicit perception.

LIMITS ON PRECONSCIOUS PROCESSING

The experiments by Niedenthal (1990; see also Niedenthal, Setterlund, and Jones 1994) and Bargh (Bargh and Pietromonaco 1982, Bargh *et al.* 1986, see also Bargh 1994) bear on the vexatious question of the degree to which information processing can occur outside of conscious awareness. In general, the field has been divided between those who think that preconscious

processing is limited to the physical and structural features of the stimulus, and those who believe that semantic features can be processed as well. Niedenthal's (1990) experiment, in which the emotional context affected face recognition, is somewhat ambiguous in view of the claim by some emotion theorists that emotional expressions can be read directly off the face, without need for any kind of complex cognitive analysis. The implications of the Bargh experiments (Bargh and Pietromonaco 1982, Bargh *et al.* 1986) are clearer: the fact that the content of the adjectives—whether they pertained to kindness or shyness—influenced subjects' later impressions of the target obviously indicates that semantic, not just perceptual, processing occurred outside of awareness.

It should be understood, however, that even if preconscious semantic processing is possible (as I believe the evidence now indicates), it is also clearly limited. These limits are clearly indicated by the work of Greenwald and his colleagues, who examined the semantic priming of evaluative judgments of words (Greenwald 1992, Greenwald, Klinger, and Liu 1989). (This psycholinguistic work is actually relevant to social interaction, in that social psychologists have long been interested in attitudes as determinants of behavior, and positive and negative evaluations are expressions of these attitudes.) In these experiments, subjects are asked to judge whether a target word is positive or negative in connotative meaning. The target itself is preceded by another word, a prime, which is clearly positive or negative. Thus, a prime like ENEMY might precede a target word like LOSE. The prime is separated from the target by a central pattern mask, such that it is not consciously perceived by the subjects.

Nevertheless, the emotional connotations of the prime influence judgments of the targets: over several experiments, Greenwald has shown that evaluative judgments are speeded when a positive prime precedes a positive word, or a negative prime precedes a negative word (Greenwald *et al.* 1989). And, as in the case of mere exposure, there is more priming when the prime is subliminal, than when it is supraliminal.

In other experiments, however, Greenwald has attempted to prime evaluative judgments with two-word phrases. The critical conditions are where a prime composed of two negative words has a positive meaning, such as ENEMY LOSES—which is a good thing. If ENEMY LOSES is a good thing, then it should prime evaluations of other good things, such as words like GAME. But no: It turns out that phrases like ENEMY LOSES facilitate judgments of negative, not positive words. Apparently, preconscious processing can extract the meaning of a single word, but it cannot construct the meaning of a two-word phrase. So, as Greenwald (1992) concludes, preconscious semantic processing is possible, but it is also analytically limited.

In my view, preconscious processing is also limited in at least two other ways (Kihlstrom 1993). First, we have to adopt the distinction drawn by Merikle and his colleagues between subjective and objective thresholds (for example, Merikle and Reingold 1993). The subjective threshold is that point

at which the subject reports no awareness of the stimulus; the objective threshold is that point at which forced-choice guesses of presence or absence fall to chance levels. Semantic processing is possible when stimuli are presented between the objective and subjective threshold (and the closer to the subjective threshold, the better), but not when stimuli are presented below the objective threshold. Second, we have to adopt the distinction, drawn by many attention theorists, between automatic and controlled processing (for example, Logan 1989). Preconscious stimuli can be analyzed by automatic, but not controlled, processes. After all, people cannot consciously deal with something of which they are not consciously aware.

Even though preconscious processing is limited, it can still have effects on experience, thought, and action in the social domain. A rapidly developing body of research shows that our feelings, social judgments, and interpersonal behaviors can be influenced by cues in the environment that are so subtle that we are not even aware of them, and pay them no conscious attention—something to conjure with the next time we meet Dr. Fell.

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