

Chapter 17

The Psychological Unconscious

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The doctrine of mentalism, which lies at the heart of psychology, states that mental states are to actions as causes are to effects. As psychology developed as an empirical science, and especially after the cognitive revolution overthrew behaviorism in the 1960s, research focused on those mental states that were accessible to consciousness. However, even the 19th-century psychologists recognized that consciousness is not all there is to the mind.

HISTORICAL PERSPECTIVES

Based on his observations of hysterical patients, and his analysis of such phenomena as dreams, errors, and jokes, Freud (1900/1953, Chap. 7) initially proposed a topographical division of the mind into three mental compartments, or “systems,” which he called CsT, PCS, and Ucs. The system Cs, or conscious mind, contained those thoughts, feelings, motives, and actions of which we are phenomenally aware at the moment. Consciousness was explicitly likened to a sensory organ capable of perceiving other mental contents. The system PCS, by contrast, contained mental contents not currently in conscious awareness, but which were available to con-

sciousness, and which could be brought into awareness under certain conditions. Finally, the system Ucs contained mental contents that are unavailable to consciousness—that could not enter awareness under any circumstances.

Freud maintained this account of the vicissitudes of consciousness for approximately two decades (Freud, 1915–1917/1962, 1963), but then introduced a wholesale revision of his view, shifting from a topographical to a functional analysis of the mind (Freud, 1940/1964). Rather than three different storage structures, this new account postulated three different types of mental activity, the id, ego, and superego. The id was described as the seat of the instincts, which were expressed through either the automatic discharge of reflex action, or the hallucinatory wish-fulfillment of primary process thought. The ego is concerned with the external physical environment, and discovers reality by means of the logical operations of secondary process thought. The superego, similarly, is concerned with the constraints on instinctual expression imposed by the moral values of the external social environment.

The problem of reconciling the two different divisions of the mind, topographic and functional, was not solved by Freud before he died.

Nevertheless, his assignment of some nonconscious mental functions to the ego, in both its defensive and nondefensive spheres, initiated an important research tradition within post-Freudian psychoanalysis. Beginning with the work of Anna Freud, and especially in the hands of Heinz Hartmann, David Rapaport, and George Klein, psychoanalytic ego psychology focused on the nondefensive, reality-oriented tasks of the ego. The tradition of psychoanalytic ego psychology was linked most closely with mainstream experimental psychology by the work of Bruner, Klein, and others on the “New Look” in perception and attendant research on such topics as subliminal perception, perceptual defense and vigilance, and repression-sensitization.

Dissociation and Neodissociation

Whereas Freud described the mechanism of the dynamic unconscious as one of repression, his intellectual rival Pierre Janet (1889, 1907) described the process as one of dissociation or “desagregation” (Ellenberger, 1970). Janet’s theoretical work was predicated on Claude Bernard’s paradigm of analysis followed by synthesis: the study of elementary psychological functions taken separately, and then the reconstruction of the whole mind based on knowledge of these parts. The elementary mental functions were labeled psychological automatisms: Far from the elementary sensations, images, and feelings of the structuralists, they were construed as complex intelligent acts, adjusted to their circumstances, and accompanied by a rudimentary consciousness. Each automatism unites cognition, emotion, and motivation with action.

Janet held that under normal circumstances, all psychological automatisms were bound together into a single stream of consciousness—each accessible to introspection, and each susceptible to voluntary control. However, the occurrence of mental trauma, especially in a vulnerable individual, could result in the splitting off of one or more psychological automatisms from conscious monitoring and control. Under these circumstances, there would exist two or more streams of mental functioning, each processing inputs and outputs, but only one of which is accessible to phenomenal awareness and voluntary control. The dissociated automatisms constitute fixed ideas (*idée fixe*), which possess some degree of autonomy with respect to their development and effects on ongoing experience, thought, and action. The operation of these dis-

sociated (as opposed to integrated or synthesized) psychological automatisms provides the mechanism for the major symptoms of hysteria: They produce the ideas, images, and behaviors that intrude, unbidden, on the stream of conscious thought and action; and their capacity to process information is responsible for the paradoxical ability of the hysterically blind or deaf to negotiate their environments successfully. Janet described these dissociated automatisms as *subconscious* as opposed to *unconscious*, and considered repression as just one possible mechanism for dissociation.

Janet’s ideas were championed by the American psychologist Morton Prince (1906), and more recently by E. R. Hilgard (1977b), who proposed a “neodissociation” theory of divided consciousness (see also Kihlstrom, 1992a). Whether in its original or updated forms, dissociation theory provides a rather different view of nonconscious mental functioning than does psychoanalytic theory. In the first place, dissociation theory holds that nonconscious mental contents are not necessarily restricted to primitive sexual and aggressive ideas and impulses, nor are nonconscious mental processes necessarily irrational, imagistic, or in any other way qualitatively different from conscious ones; they are simply not consciously accessible. In the second place, dissociation theory holds that the restriction of awareness need not be motivated by purposes of defense, nor need it necessarily have the effect of reducing conflict and anxiety; rather, it can occur simply as a consequence of particular psychological operations. Although largely compatible with the principles of contemporary cognitive psychology, dissociation theory also offers a somewhat different perspective on the cognitive unconscious. Thus, nonconscious mental processes are not restricted to unconscious procedural knowledge, and nonconscious mental contents are not limited to unattended or degraded percepts and memories. These differences suggest that dissociative processes deserve more attention by both cognitive and clinical psychologists than they have received in the recent past.

The Psychological Unconscious in Cognitive Theory

Within 19th-century academic psychology, perhaps the most forceful advocate of nonconscious mental life was William James (1890/1980), who held that mental states could be uncon-

scious in at least two different senses. First, a mental event can be excluded from attention or consciousness. These unattended, unconscious feelings are themselves mental states. Second, and more important, James drew on the clinical observations of cases of hysteria and multiple personality—some made by others, some by himself (Taylor, 1996)—to argue for a division of consciousness into primary and secondary (and, for that matter, tertiary and more) “consciousnesses,” only one of which is accessible to phenomenal awareness at any point in time. To avoid possible oxymoron in the negation of consciousness, which was what really bothered him, James preferred to speak of “co-conscious” or “subconscious” mental states, rather than “unconscious” ones.

The radical behaviorists were no more interested in nonconscious than in conscious mental life, so empirical interest in the kinds of problems that interested Helmholtz and James, not to mention Freud, declined precipitously in the years after World War I. Serious theoretical interest in nonconscious mental life had to wait the triumph of the cognitive revolution (Hilgard, 1977a, 1980a, 1987). For example, the classic multistore model of information processing implicitly makes consciousness coterminous with attention and primary (short-term, working) memory. In this way, the model seems to identify nonconscious mental life with early, “preattentive” mental processes such as feature detection and pattern recognition, that occur prior to the formation of a mental representation of an event in primary memory. The idea that complex mental states and processes could influence experience, thought, and action despite being inaccessible to phenomenal awareness and voluntary control required a wholesale revision of our concepts of attention and memory, as represented by research on automatic and implicit memory.

THE COGNITIVE UNCONSCIOUS

Most research on unconscious mental life has focused on the cognitive unconscious (Kihlstrom, 1984, 1987, 1999a). The rediscovery of the unconscious began with comparisons between automatic and effortful mental processes and between explicit and implicit memory, and it has continued with the extension of the explicit–implicit distinction into the domains of perception, learning, and thought. More recent develop-

ments, to be treated in later sections, have involved the extension of the explicit–implicit distinction further, to the domains of motivation and emotion.

Automatic and Unconscious Processing

The earliest information-processing theories of attention were based, to one degree or another, on the metaphor of the filter (for reviews, see Kahneman & Treisman, 1984; Logan, 1997; Pashler, 1997). Information that made it past the filter was available for “higher” information-processing activities, but information that did not make it past the filter was not. Later, the notion of an attentional filter was replaced by the notion of attentional capacity. The capacity view, in turn, led to a distinction between “automatic” and “controlled” processes (e.g., LaBerge & Samuels, 1974; Posner & Snyder, 1975; Schneider & Shiffrin, 1977). Automatic processes are inevitably engaged by the presentation of specific stimulus inputs, regardless of any intention on the part of the subject. Some automatic processes are innate, whereas others have been automatized through extensive practice. In either case, automatic processes are unconscious in the strict sense that they are inaccessible to phenomenal awareness under any circumstances.

The defining feature of an automatic process is that it is executed automatically in response to appropriate stimulus inputs. In this way, the notion of an automatic processes is tacitly modeled after the reflexes, taxes, and instincts (fixed action patterns) familiar from physiology and ethology, as well as the conditioned responses familiar from traditional learning theory (whether Pavlovian or Skinnerian). Of course, such a definition of automatic is circular. Thus a second criterion, that automatic processes consume no attentional resources, seems to have been adopted in part to escape tautology, and perhaps because of anticipated difficulties in objectively measuring or controlling subjects’ intentions. But it should be noted that, at base, the concept of automatic does not *require* anything other than independence from intention. It is certainly possible to conceive of automatic processes that, once invoked by appropriate stimulus conditions, consume attentional resources—just as a room heater, automatically activated by a thermostat, consumes electricity. Hasher and Zacks (1979, 1984) offered additional criteria for defining a process as automatic, such as age-invariance or independence of individual differ-

ences. However, it seems advisable to decouple these additional criteria from the concept of automatic, and treat the effects of such factors as empirical questions, as opposed to a priori assumptions.

The concept of automatic has played an increasingly powerful role in social psychology and personality (e.g., Bargh, 1984, 1997; Bargh & Barndollar, 1996; Devine, 1989; Fazio, Sanbonmatsu, Powell, & Kardes, 1986; Newman & Uleman, 1989; Pratto, 1994; Smith, 1994; Taylor & Fiske, 1978; Uleman, Newman, & Moskowitz, 1996; Wegner & Bargh, 1998; Wegner & Smart, 1997). The general argument is that some of the processes involved in social cognition, and some of the processes by which social cognitions are translated into social behavior, are executed automatically. Thus, it is generally accepted that attitudes, impressions, and other social judgments, as well as aggression, compliance, prejudice, and other social behaviors, are often mediated by automatic processes that operate outside phenomenal awareness and voluntary control.

To some extent, what might be called the “automatic juggernaut” within personality and social psychology seems to represent a reaction to a cognitive view of social interaction which seems, to some, to inappropriately emphasize conscious, rational, cognitive processes, at the expense of the unconscious, irrational, emotive, and conative. After all, the concept of automatic is, at least tacitly, modeled on innate stimulus–response (S-R) connections such as reflexes, taxes, and instincts (fixed action patterns), as well as on those S-R connections acquired through the processes of classical and instrumental or operant conditioning. James (1890/1980), after all, discussed automatic in relation to habit. Thus, in some respects, invocation of the concept of automatic represents a reversion to earlier situationist views within social psychology (Berkowitz & Devine, 1995).

This regressive situation has been clearly articulated by Bargh (1997): “As Skinner argued so pointedly, the more we know about the situational causes of psychological phenomena, the less need we have for postulating internal conscious mediating processes to explain those phenomena” (p. 1). Bargh goes on to argue that most social behavior is indeed automatic in nature. In his view, social behavior occurs largely in response to environmental triggers, independent of the person’s conscious intentions, beliefs, and choices; and it is preattentive, independent of

the person’s deployment of attention. Bargh’s position is not classically Skinnerian, because he shares the central dogma of cognitive social psychology—that social behavior is caused by the actor’s internal mental representation of the situation, rather than the situation as it might be described objectively. But Bargh goes on to argue that this internal mental representation is itself constructed automatically and preconsciously. Thus, Bargh is able to maintain a superficial allegiance with cognitivism while at the same time harkening back to radical situationism. If the cognitive processes underlying social cognition and social behavior are largely automatic, then—to put it bluntly—not too much thought has gone into them.

At the same time, however, and somewhat ironically, the most recent developments in attention theory have been to undermine even the seemingly fundamental assumptions that automatic processes are independent of intention and of attentional capacity (Logan, 1997; Pashler, 1997). Although the concept of automatic is intuitively appealing, and has proved extremely attractive to both cognitive and social psychologists, the empirical evidence generally fails to support the primary claims about automatic processes: that they are executed involuntarily and consume no cognitive resources. Of course, it is possible that alternative conceptualizations of automatic will prove more viable than the those based on resource theories of attention (Anderson, 1992; Logan, 1997).

Implicit Memory

Although procedural knowledge structures may be unconscious, the declarative knowledge structures on which they operate are ordinarily thought to be available to conscious awareness. We generally assume that people consciously perceive and remember the events that influence their experience, thought, and action. On the other hand, an increasingly large literature from both patient and nonpatient populations indicates that people can display priming effects, savings in relearning, and other memory-based phenomena without having any conscious recollection of the events that form the experiential bases of the effects. On the basis of results such as these, Schacter (1987) has drawn a distinction between explicit and implicit memory. Explicit memory involves the conscious reexperiencing of some aspect of the past, whereas implicit memory is revealed by a change in task perform-

ance that is attributable to information acquired during a prior episode. Implicit memory is, in effect, unconscious memory: Mental representations of past events influence current experience, thought, and action in the absence of, or independent of, conscious recollection of those events.

Because the literature on implicit memory is so large, and has been reviewed in many places (Graf & Masson, 1993; Roediger & McDermott, 1993; Schacter, Chiu, & Ochsner, 1993), this chapter will not attempt a full-scale review of the field. For present purposes, it is enough to catalog some of the out-of-the-way domains in which dissociations between explicit and implicit memory have been observed: posthypnotic amnesia (Kihlstrom, 1980, 1985); dissociative disorders such as psychogenic amnesia, psychogenic fugue, and multiple personality (Kihlstrom, 1999b; Kihlstrom & Schacter, 1995; Schacter & Kihlstrom, 1999); general anesthesia (for reviews, see Cork, Couture, & Kihlstrom, 1997; Merikle & Daneman, 1996); and conscious sedation (Polster, 1993). Somewhat surprisingly, despite early hints to the contrary (Eich, 1990), implicit memory appears to be impaired by sleep (Wood, Bootzin, Kihlstrom, & Schacter, 1992)—an apparent contradiction that will be resolved only by further research.

Implicit Perception

Effects analogous to implicit memory may be observed in perception (Kihlstrom, 1996a; Kihlstrom, Barnhardt, & Tataryn, 1992). Ever since the first demonstration of subliminal perception, by Peirce and Jastrow (1884), however, a variety of methodological critiques have sought to demonstrate that events cannot be analyzed for meaning unless they have been consciously identified and attended to (e.g., Erickson, 1960). Recently, however, a number of compelling demonstrations of preconscious semantic processing have appeared in the literature (e.g., Marcel, 1983). Despite persisting methodological critiques (e.g., Holender, 1986; Shanks & St. John, 1994), the available literature clearly supports the proposition that certain aspects of semantic processing can occur in the absence of conscious awareness (Draine & Greenwald, 1998; Greenwald, Klinger, & Liu, 1989; Greenwald & Draine, 1998). At the same time, there appear to be strict limits to the processing of subliminal and preattentive events (Greenwald, 1992; Merikle & Reingold, 1992).

In subliminal perception, the stimulus is degraded by means of tachistoscopic presentation, or masking. In other instances, the stimulus, although not strictly subliminal, is degraded by virtue of presentation outside of the focus of attention—in parafoveal segments of the visual field, for example, or over the unattended channel in dichotic listening experiments. However, there are other circumstances in which perception without awareness occurs even though the environmental stimulus is not degraded in any sense. For example, Weiskrantz (1986, 1997) and his colleagues have reported a patient who had extensive damage to the striate cortex of the occipital lobes. Although the patient reported an inability to see, he was nonetheless able to respond appropriately to some visual stimuli—a phenomenon called “blindsight” (for a review see Campion, Latto, & Smith, 1983, and commentaries). Similarly, patients with bilateral lesions to the mesial portions of the occipital and temporal cortex are unable to consciously recognize previously encountered faces as familiar—a condition known as prosopagnosia. Nevertheless, there are now several reports indicating that prosopagnosic patients show differential behavioral responses to old and new faces (e.g., deHaan, Young, & Newcombe, 1987; Tranel & Damasio, 1985)—a dissociation similar to the implicit memory seen in the amnesic syndrome. Similar phenomena have been observed in the visual neglect syndromes resulting from damage to the temporoparietal areas of the cerebral cortex (Bisiach, 1993; Rafal, 1998). Further evidence that implicit perception goes beyond the subliminal and the preattentive are studies of the conversion disorders, once labeled “conversion hysteria” and in the phenomena of hypnotic suggestion (for reviews, see Hilgard, 1977b; Kihlstrom, 1992b, 1999b; Kihlstrom et al., 1992).

Because perception without awareness extends to cases beyond stimuli that are subliminal or unattended, Kihlstrom et al. (1992; see also Kihlstrom, 1996a) have argued for a distinction between explicit and implicit perception, paralleling the distinction between explicit and implicit memory. Explicit perception entails the subject’s conscious perception of some object in the current environment, or the environment of the very recent past, as reflected in his or her ability to report the presence, location, form, identity, and/or activity of that object. Implicit memory refers to any change in the person’s experience, thought, or action attributable to such

an event, in the absence of (or independent of) conscious perception of that event. Explicit and implicit perception can be dissociated, just as explicit and implicit memory can be. The term “implicit perception” captures a broader domain than is covered by the term “subliminal perception,” because it covers the processing, outside of conscious awareness, of stimulus events that are clearly perceptible in terms of intensity, duration, and other characteristics. It also has the extra advantage of skirting the difficult psychophysical concept of the *limen*.

Implicit perception effects are conceptually similar to subliminal memory effects, in that both reveal the impact on experience, thought, and action of events that are not accessible to conscious awareness. However, in contrast to implicit perception, the events contributing to implicit memory effects are clearly detectable by the subject at the time they occurred, attention was devoted to them, and they were at least momentarily represented in phenomenal awareness. Arguably, implicit memory should be reserved for those situations in which a consciously perceived event is subsequently lost to conscious recollection, leaving implicit perception for instances (including, in principle, sleep and general anesthesia) in which the stimulus was not consciously perceived in the first place. Because memory is the residual trace of perceptual activity, it stands to reason that implicit percepts can reveal themselves in memory—even if it should turn out that implicit percepts produce only implicit memories. However, evidence for implicit perception and memory should not be taken as grounds for concluding that *all* current and past events, regardless of whether they are consciously attended, are encoded in memory and influence ongoing experience, thought, and action—as implied, for example, by the specter of subliminal advertising (Moore, 1988), or subliminal persuasion (Greenwald, Spangenberg, Pratkanis, & Eskenazi, 1991; Merikle, 1988; Merikle & Skanes, 1992; Moore, 1995).

Implicit Thought

Implicit perception and memory do not exhaust the domain of the psychological unconscious. Although the evidence is somewhat sparse, it appears we can also have implicit *thought* (Dorfman, Shames, & Kihlstrom, 1996; Kihlstrom, Shames, & Dorfman, 1996). Implicit thought is somewhat hard to define, but it is illustrated by some studies of problem solving

by Bowers and his associates (Bowers, 1984, 1987; Bowers, Farvolden, & Marmigis, 1995; Bowers, Regehr, Balthazard, & Parker, 1990). In some of these experiments, subjects were presented with word triads patterned after those of the Remote Associates Test (RAT; Mednick, 1962), and instructed to think of a word that all three words had in common. Some of the triads were soluble, but others were not. Bowers and colleagues found that subjects could distinguish between soluble and insoluble triads, even if they were unaware of the solution to the soluble one—an effect conceptually similar to the “feeling of knowing” analogous to that observed in metamemory tasks (Reder, 1996). Unsolved RAT solutions produce unconscious priming effects analogous to those observed in studies of implicit perception and memory (Shames, 1994; see also Dorfman et al., 1996; Kihlstrom et al., 1996).

The kinds of effects observed by Bowers et al. (1990, 1995) and Shames (1994) seem relevant to the phenomena of intuition, incubation, and insight in problem solving (Dorfman et al., 1996; Kihlstrom et al., 1996). These phenomena have proven difficult to study under controlled laboratory conditions, and intuition has acquired an especially bad reputation as a source of error in human judgment. On the contrary, Bowers (1984, 1987) has argued that intuitions represent our tendency, as intelligent problem solvers, to go beyond the information given by a problem or a retrieval cue. As the way out of the closed cognitive loop of induction and deduction, intuitions are important elements in the creative process. In the present context, intuitions should be reconstrued as implicit thoughts—gut feelings that we are correct, without knowing why, or even whether, we are right. Perhaps these implicit thoughts come into awareness through the process of incubation, culminating in insight—the moment in which the solution to a problem, or some other thought, appears in conscious awareness.

Implicit Learning

Despite persisting questions, implicit perception and memory illustrate the cognitive unconscious, by showing perception and memory outside of phenomenal awareness. A rather different line of research has sought to document the conceptually related phenomenon of implicit *learning*—as demonstrated by subjects’ ability to use rules acquired through experience, in the absence of awareness of the rules themselves. In

some ways, implicit learning is exemplified by language acquisition, in which speakers acquire the ability to distinguish grammatical from ungrammatical utterances, even though they cannot articulate the grammatical rules underlying the judgments. Reber (1993) has attempted to model this process in the laboratory by developing artificial grammars whose rules control the construction of well-formed strings of letters. In Reber's procedure, subjects are asked to memorize a set of (perhaps) 20 grammatical letter strings (e.g., PVPXVPS or PTTTVPS). They are then tested with a number of new strings, some of which (e.g., PTTTVPS) conform to the rule, while others (e.g., PTVPXVSP) do not. Reber has found that subjects are able to distinguish grammatical from nongrammatical letter strings at better than chance levels, even though none of them are able to give a full and accurate account of the grammatical rule they have clearly induced from the study set.

Other investigators have produced similar sorts of demonstrations (for comprehensive reviews, see Berry & Dienes, 1993; Lewicki, 1986; Seger, 1994). However, it should be noted that the interpretation of implicit learning in terms of the unconscious acquisition of knowledge remains somewhat controversial (Dulany, 1997; Shanks & St. John, 1994). In the first place, the subjects are by no means unconscious in the sense of being asleep or anesthetized. Nor is the learning experience inaccessible to conscious awareness in the same sense that the events implicated in implicit perception and implicit memory are. Even the claim that subjects are unaware of what they have learned is controversial. In the artificial grammar experiments, for example, the mere fact that subjects cannot articulate the Markov process by which grammatical strings were generated does not mean that they are unaware of what they have learned. Above-chance classification performance could well result from partial knowledge which is consciously accessible. The best that can be said, for now, is that the subjects in artificial grammar and sequence learning experiments experience themselves as behaving randomly, without an awareness of what they are doing.

THE EMOTIONAL UNCONSCIOUS

As psychology shrugged off radical behaviorism in the 1960s, its renewed interest in conscious (and then unconscious) mental life was focused

on cognition, and it treated cognition as cold and hard, conscious and deliberate. As the cognitive revolution developed, however, two trends emerged. On the one hand, as discussed above, cognitive psychology increasingly made room for the cognitive unconscious, as reflected in the rise of research on automaticity and on implicit memory. On the other hand, largely under the influence of personality, social, and clinical psychology, the study of cognition expanded to include the hot and the wet—reflected in increased interest in emotional and motivational influences on memory and other cognitive processes. This second trend seems to have eventuated in an "affective revolution," in which emotional life is studied in its own right, and not merely as a byproduct of cognitive processing. But this affective revolution, epitomized by the emergence of an interdisciplinary "affective science" (Ekman & Davidson, 1994) or "affective neuroscience" (Panskepp, 1991) modeled on cognitive science and cognitive neuroscience, seems to be focused on conscious feeling states. If we are ready to accept the notion of a cognitive unconscious, perhaps we are also ready to accept the notion of an emotional unconscious as well (Kihlstrom, Mulvaney, Tobias, & Tobis, 1999).

Of course, the idea of an emotional unconscious is not new. As we all know, Sigmund Freud argued that our conscious experience, thought, and action is shaped by emotional and motivational states of which we are unaware. All the classic Freudian defense mechanisms were designed to render us unaware of our true emotional states. However, in order to talk about the emotional unconscious we need not embrace the whole conceptual panoply of classical, or even neo-Freudian, psychoanalysis—we don't need the division of the mind into id, ego, and super-ego, the theory of infantile sexuality, the stages of psychosexual development, repression, or any of the rest of it. Modern research on cognition and the cognitive unconscious owes nothing whatsoever to Freud, and that is also the case with modern research on emotion and the emotional unconscious.

Emotion as an Expression of Implicit Perception and Memory

With respect to the emotional unconscious, the first thing to be noted is that conscious emotional responses can serve as expressions of implicit memory and perception, and perhaps im-

PLICIT learning and thought as well. In both cases, the people in question are consciously aware of their feeling state, but are unconscious of the source of those emotions in their past or current experience.

On the memory side, brain-damaged, amnesic patients can acquire new emotional responses through experience, even though they cannot consciously remember the experiences themselves. For example, a study by Johnson and her colleagues exposed alcoholic Korsakoff syndrome patients, who suffer an anterograde amnesia as a result of bilateral damage to the diencephalon, to unfamiliar Korean melodies (Johnson, Kim, & Risse, 1985). Some melodies were played only once during the study phase, whereas others were played 5 or 10 times. Later, the patients were played these same melodies, along with other Korean melodies that were entirely new, and asked to indicate which they preferred. Both amnesic patients and control subjects preferred the old over the new melodies, reflecting what Zajonc (1968) has called the "mere exposure effect" (for a review, see Bornstein, 1989). However, the patients, being amnesic, showed greatly impaired levels of recognition: They liked what they heard, but they didn't know why.

With respect to perception, we now know that intact subjects can show mere exposure effects on preference judgments even though the exposures were so degraded as to be consciously imperceptible. A case in point is a study by Kunst-Wilson and Zajonc (1980), involving tachistoscopic presentations of drawings of irregular polygons. The subjects in this case were neurologically intact, but the exposures were so brief that they were not consciously perceived by the subjects, as confirmed by a later recognition test. Nevertheless, the subjects showed the mere exposure effect: the more subliminal presentations the stimuli received, the more the subjects liked them (see also Bornstein, 1992). The subjects liked what they saw, but they didn't know why.

Bornstein and his colleagues have extended the subliminal mere exposure effect found with neutral stimuli to faces: Not only did subjects show more positive attitudes toward people depicted in tachistoscopically presented photographs, but they also interacted more positively with these same individuals when they later encountered them in a contrived social interaction (Bornstein, Leone, & Galley, 1987). Zajonc (1980) has used these results to claim that affective responses are independent of, and perhaps

even prior to, cognitive processing. However, Mandler and his colleagues showed that mere exposure, outside of awareness, also increased ratings of brightness, darkness, and *disliking* (Mandler, Nakamura, & Van Zandt, 1987). This finding suggests that the preference effect of Kunst-Wilson and Zajonc (1980) seems to be a specific instantiation of a more general principle that activation of an internal representation of an object affects judgment about any relevant dimension that object (Mandler et al., 1987), and does not support specific claims concerning the priority of affect. On the other hand, Seamon and his colleagues have recently reported subliminal exposure effects on liking and disliking judgments, but not on judgments of lightness and darkness (Seamon, McKenna, & Binder, 1998). This discrepancy in the literature remains to be resolved.

Nevertheless, unconscious effects on preference judgments, and other emotional responses, set the stage for other analyses of unconscious influences on personality and social interaction. Some early research along these lines was reported by Nisbett and Wilson (1977), who argued that people largely lack introspective access to the actual determinants of their judgments and other behaviors. More recently, research by Lewicki (1986) has shown that presumably affect-laden information about the features of social stimuli (and the covariations among them) can be acquired through implicit learning, and influence behavior even though it is stored in a form that is inaccessible to conscious awareness.

This much is pretty clear from the available research, although more needs to be done in both arenas. In particular, the acquisition of emotional responses by amnesic patients has not been studied much since Johnson and colleagues' (1985) original work. However, in view of the ongoing debate over recovered memories of trauma, it is important to enter a strong cautionary note. The recovered memory literature frequently distinguishes between a conscious "recall memory" and an unconscious "feeling memory," the latter term referring to an emotional response to a current situation that is triggered by an unconscious memory of past trauma (e.g., Frederickson, 1993). The notion of a feeling memory is a throwback to the prepsychoanalytic notion of Breuer and Freud (1893–1895/1955, p. 7) that "hysterics suffer . . . from reminiscences," and finds some support in experimental demonstrations of emotion as an expression of implicit memory. But there is an important dif-

ference: The experimental literature provides independent corroboration of the past emotion-eliciting event—information that may be rarely available in clinical practice. Nevertheless, clinicians who embrace the concept of recovered memory may inappropriately infer a history of prior trauma from the patient's current emotional state, in the absence of any independent corroborative evidence. This is, of course, a mistake—the logical mistake of “affirming the consequent”—a mistake that may lead patients to reconstruct distorted or false memories of their past (Kihlstrom, 1996b, 1998). Although there is no question that implicit memories of trauma can, in principle, affect a person's current experience, thought, and action, in the absence of independent, objective, corroboration, there is no scientific basis for inferring the past from current emotional symptoms (Kihlstrom, 1997b).

Implicit Emotion

Another side of the emotional unconscious concerns the proposition that there is a formal distinction between two expressions of emotion—explicit and implicit. Paralleling the usage of these descriptors in the domain of the cognitive unconscious, “explicit emotion” refers to the person's conscious awareness of an emotion, feeling, or mood state; “implicit emotion,” by contrast, refers to changes in experience, thought, or action that are attributable to one's emotional state, independent of his or her conscious awareness of that state. In terms of measurement, explicit emotion tasks require the subject to reflect on, and report, his or her conscious feeling states; implicit emotion tasks do not.

The inspiration for this idea comes from Lang's (1968) multiple-systems theory of emotion. According to Lang, every emotional response consists of three components: verbal-cognitive, corresponding to a subjective feeling state such as fear; overt motor, corresponding to a behavioral response such as escape or avoidance; and covert physiological, corresponding to a change in some autonomic index such as skin conductance or heart rate. Although we usually construe these three components or systems as varying together, Lang has proposed that these three systems are partially independent, so that under some conditions they can move in quite different directions. Rachman and Hodgson (1974; Hodgson & Rachman, 1974) picked up on Lang's theme and applied the term “desynchrony” to cases in which one component of

emotional response is dissociated from the others (for critical reviews of desynchrony, see Hugdahl, 1981; Turpin, 1991; Zinbarg, 1998).

Apparently, dissociations between emotional awareness and physiology are found quite commonly in the anxiety disorders. For example, cardiology clinics frequently encounter patients who complain of tachycardia but have no other signs of coronary arrest. It turns out that these patients are not having heart attacks at all. Instead, they are having *panic* attacks, even though they experience no subjective fear (aside from distress over the heart symptom itself). This syndrome even has a name: fearless panic attacks (Beitman, Mukerji, Russell, & Grafing, 1993). The patient is showing all the physiological signs of fear, but doesn't experience fear itself. The emotional deficits associated with schizophrenia also have a flavor of desynchrony. Thus, “flat affect” refers to a deficit in the behavioral expression or display of emotion, which may not extend to subjective experience or physiology. Anhedonia, another feature of schizophrenia (and a dimension of normal personality as well; see Chapman, Chapman, & Raulin, 1976) is a deficit in the conscious experience of positive emotion that leaves the behavioral or physiological expressions of emotion unimpaired. A whole host of individual differences in emotional experience and expression may involve just this form of desynchrony: repressive style (Weinberger, 1997; Weinberger, Schwartz, & Davidson, 1979); alexithymia (Lane, Ahern, Schwartz, & Kaszniak, 1997), and level of emotional awareness (e.g., Lane & Schwartz, 1987).

Turning from personality to social psychology, Greenwald and Banaji (1995) have recently applied the explicit-implicit distinction to the concept of “attitude.” This is interesting because, as Thurstone noted long ago, emotion is central to social attitudes: They are affective dispositions to favor or oppose certain individuals, groups, or policies, and they are measured on dimensions that have affective connotations: pro and anti, like and dislike, positive and negative, and so on. Classical social psychology assumes that people are aware of their attitudes, which is why attitudes are typically assessed by self-report scales. However, Greenwald and Banaji have suggested that people may possess positive and negative *implicit attitudes* about themselves and other people, which can affect ongoing social behavior outside of conscious awareness.

An experimental demonstration of implicit attitudes is provided by a series of studies of the

“false fame” effect by Banaji and Greenwald (1995). However, it is one thing to demonstrate the implicit effect of attitudes on tasks that do not require conscious awareness of those attitudes, and something else to demonstrate that explicit and implicit attitudes are actually dissociable. Wittenbrink, Judd, and Park (1997) found that the magnitude of the race-specific priming effect was correlated with scores on a questionnaire measure of racial prejudice. Implicit measures may be very useful in studies of attitudes and prejudice, but researchers need to actually test for explicit–implicit dissociations before we accept implicit attitudes as evidence of an emotional unconscious whose contents are different from those that are accessible to phenomenal awareness.

In light of the earlier discussion of “feeling memories,” more should be said at this point about the logic of inferring unconscious emotions. We recognize priming effects as evidence of implicit memory because we can trace them to specific objectively observable events, and we can objectively trace the relationship between the prime and the target. Put another way, we can identify an implicit expression of memory because we know what happened to the subject in the past. But by the same logic, in order to identify an implicit expression of emotion, we have to know what emotional state the subject *should* be experiencing—which emotional state is being represented, and expressed, outside of conscious awareness.

Still and all, at least in principle, the emotional unconscious has two different aspects. On the one hand, we may be unaware of the percepts, memories, and thoughts that give rise to our emotional feelings. In this case, emotion serves as an implicit expression of perception, memory, and thought. On the other hand, we may be aware of what we are perceiving, remembering, or thinking, but unaware of the emotions instigated by these cognitions. In this case, behavioral and physiological changes serve as implicit expressions of emotion.

Interestingly, both aspects of the emotional unconscious are anticipated in the neuropsychological model of fear recently offered by LeDoux (1996). The fact that a powerful neuropsychological model of emotion can produce both aspects of the emotional unconscious is, in my view, warrant to pursue the matter further. Still, it must be remembered that LeDoux’s model is based almost entirely on animal research on fear. It would be useful to know more

about dissociable neural systems for emotions other than fear, and to have positive evidence of implicit emotion in humans, who can talk to us about their conscious experiences. For the present, the experimental and clinical evidence for a dissociation between explicit and implicit emotion is not yet convincing, and the methodological requirements for such demonstrations have not yet been fully met. But while the hypothesis of unconscious emotional states has not yet garnered convincing support, it can no longer be rejected out of hand. If we are willing to speak of implicit percepts, memories, and thoughts that are dissociated from their explicit counterparts, then we must be willing to speak of implicit emotions in the same terms.

THE MOTIVATIONAL UNCONSCIOUS

If we are willing to speak of implicit emotions, we must also be prepared to speak of implicit motives. Although Emmanuel Kant asserted that feeling and desire (along with knowledge) were irreducible faculties of mind (Hilgard, 1980b), emotion and motivation are often closely linked. Often one of these terms is defined, at least in part, by the other. Thus the motivational states that energize, direct, and select behavior often have a hedonic quality of pleasure or displeasure to them, whereas emotions can have the same drive or incentive functions traditionally ascribed to motives. Buck (1985) defined emotion as the mechanism by which we read out information concerning motivational systems. Viewed from this perspective, emotions might be construed as consciously accessible while motives may be unconscious. But we have already determined that, at least in principle, emotions can be unconscious too; and certainly, many of our motivational states are accessible to phenomenal awareness. Thus we are returned to the question: Can motivational states be unconscious?

Put more precisely, can we observe dissociations between explicit and implicit expressions of motivation? In parallel with the cognitive and emotional cases, we must entertain a formal distinction between two expressions of motivation—explicit and implicit. “Explicit motivation” can be defined as the conscious representation of a conative state, or the desire to engage in some particular activity, as represented by craving for food, yearning for love, and the like. By contrast, “implicit motivation” refers to

changes in experience, thought, or action that are attributable to one's motivational state, independent of one's conscious awareness of that state. In terms of measurement, explicit motivation tasks require the subject to reflect on, and report, his or her conscious desires; implicit motivation tasks do not. Closing the parallel with emotion, we might hypothesize that behavioral or physiological signs of motivation can be dissociated from conscious desires.

Implicit Motives

In the recent history of psychology, the notion of implicit motivation was first articulated by McClelland, Koestner, and Weinberger (1989)—interestingly, without any reference to the already-emerging concept of explicit memory (Schacter, 1987). For McClelland and colleagues, explicit motives are self-attributed: The person is aware of the motive, can reflect on it, and report it in interviews or on personality questionnaires. Implicit motives, by contrast, are inferred from the person's performance on exercises such as the Thematic Apperception Test (TAT). As such, the distinction between explicit and implicit motives is an extension of McClelland's (1980) earlier distinction between respondent and operant motive measures.

Of course, it has long been known that motives as assessed by "projective" instruments such as the TAT, even when investigators employ reliable coding schemes, do not correlate with nominally the same motives as assessed by "objective" instruments such as the Personality Research Form (PRF; Jackson, 1974). Rather than taking such empirical findings as a reason for abandoning picture-story and other projective measurements, McClelland and colleagues (1989) conclude that implicit and self-attributed motives influence different classes of behavior, and that they respond to different types of influence (e.g., Bornstein, 1998). Implicit motives are more strongly related to long-term behavioral trends, whereas self-attributed motives are more strongly related to immediate choices. Self-attributed motives are more strongly linked to normative goals than are their implicit counterparts. Self-attributed motives are aroused by extrinsic social demands, whereas implicit motives are aroused by intrinsic task incentives.

In other words, McClelland and colleagues postulate two dissociable motive systems, one explicit and the other implicit, just as Schacter (1987) and Squire (Squire & Knowlton, 1995)

postulate two dissociable memory systems or Lang (1968) postulates multiple, dissociable, components of emotion. The low correlations between TAT and PRF motive scores, far from reflecting the poor psychometric properties of the TAT (or, for that matter, the PRF), instead reflect the dissociability of the underlying motivational systems that these measures respectively tap. One of these motive systems is accessible to conscious awareness; the other is not, and influences the individual's experience, thought, and action unconsciously. By virtue of implicit motives, people engage in goal-oriented behavior without being aware of what their motives or goals are. Or, at least, that is the hypothesis.

Automatic Motives

A rather different perspective on the motivational unconscious is offered by Bargh (1997; Bargh & Barndollar, 1996), as part of his general embrace of the concept of automaticity. According to the traditional, folk-psychological model of motivation, the person consciously selects some intended behavior in order to achieve some goal, and then deliberately executes that behavior. Although it is commonly accepted that some skilled, goal-directed behaviors are executed automatically and unconsciously, much like a concert pianist plays an arpeggio, Bargh also automates the process of goal-selection—the selection of the music, not just the touch of fingers to keys. According to this "auto-motive model," by virtue of having been frequently and consistently chosen in particular situations, goals and motives (these terms are essentially interchangeable) themselves can be automatically and unconsciously invoked by environmental events. Once activated, goal-oriented behaviors can be executed outside of awareness as well.

It should be noted, however, that whereas the implicit motives discussed by McClelland and colleagues (1989) are themselves inaccessible to conscious awareness (at least on hypothesis), Bargh's (1997) auto-motive model asserts only that the person's motives are selected automatically, in the absence of conscious intention or choice. It does not necessarily follow that the person is not aware of the motives themselves. Thus, it may very well be that achievement or affiliation goals may be primed by events in the current or past environment (Bargh, 1997); but these goals themselves may well be represented in the person's conscious awareness. In the absence of evidence that the motives themselves are

inaccessible to phenomenal awareness, the automatically activated motives envisioned by Bargh are probably better construed as motivational expressions of implicit perception or memory, rather than as implicit motives.

THIS IS NOT YOUR PSYCHOANALYST'S UNCONSCIOUS

The wide variety of clinical and experimental studies summarized here, conducted in a wide variety of domains and with many different types of subjects, provide evidence for several different aspects of the psychological unconscious. In the first place, there is ample evidence that certain mental procedures, if not strictly automatic, operate unconsciously in the sense that we have no direct introspective awareness of them: They can be known only indirectly, by inference. With respect to the cognitive contents on which these processes operate, there is also ample evidence for implicit memories and implicit percepts, which influence experience, thought, and action independent of, and even in the absence of, conscious perception or recollection. There is also more tentative evidence for implicit thoughts, supporting the experience of intuition in creative problem solving, and for implicit learning processes. There is evidence that emotional responses, in the form of consciously experienced feeling states, can occur as expressions of implicit perception and memory, if not as products of implicit learning and thought as well. Similarly, motivational states can be activated automatically; further research may establish that motives, like emotions, can serve as expressions of implicit cognition. Moreover, setting the cognitive unconscious aside, there are good theoretical reasons to suspect that implicit emotional and motivational states can themselves affect expressive and goal-directed behavior outside of conscious awareness.

Lately, there has been some tendency to claim that these findings prove that Freud was right after all. For example, Westen (1998a, 1998b) after performing a review not unlike this one, has concluded that "the notion of unconscious processes is not psychoanalytic voodoo, and it is not the fantasy of muddle-headed clinicians. It is not only clinically indispensable, but it is good science" (p. 35). True enough, so far as it goes, but Westen ignores the fact that none of the literature he has reviewed bears on the particular view of unconscious mental life offered by Freud. The

fact that amnesic patients show priming effects on word-stem completion tasks, and can acquire positive and negative emotional responses to other people, without having any conscious recollection of the experiences responsible for these effects, cannot be offered in support of a theory that attributes conscious behavior to repressed sexual and aggressive urges. None of the experiments reviewed involve sexual or aggressive contents, none of their results imply defensive acts of repression, and none of their results support hermeneutic methods of interpreting manifest contents in terms of latent contents. To say that this body of research supports psychoanalytic theory is to make what the philosopher Gilbert Ryle called a category mistake.

It is true, as noted earlier, that the notion of a psychological unconscious, which long predated Freud (Ellenberger, 1970), was conserved by scientific and clinical psychoanalysts throughout the dark days of behaviorism, and into the early days of the cognitive revolution, when cognitive psychologists were preoccupied by manifestations of conscious mental life, such as attention, short-term memory, and mental imagery. However, the revival of research on the psychological unconscious, in the late 1970s and early 1980s, was essentially independent of psychoanalysis. With the possible exception of Silverman's (1976) work on subliminal symbiotic stimulation, modern laboratory research provides no support for the psychoanalytic view of unconscious mental life. That line of research, in turn, directly contradicts the overwhelming conclusion from carefully controlled empirical research that subliminal and other forms of preattentive processing is analytically limited—too limited to permit the analysis of symbiotic stimuli.

One response to this state of affairs is to argue that psychoanalytic theory itself has evolved since Freud, and that it is therefore unfair to bind psychoanalysis so tightly to the Freudian vision of repressed infantile sexual and aggressive urges, symbolically represented in dreams, errors, and symptoms, and revealed on the couch through free association. Westen (1998b) himself recently attempted this gambit, arguing that critics of psychoanalysis attack an archaic, obsolete version of psychodynamic theory, and ignore more recent developments such as ego psychology and object relations theory. But, to borrow the language of the Vietnam War, this destroys the village in order to save it. Culturally, the 20th century has been the century of Sigmund Freud, not the century of Heinz Kohut or Melanie Klein. Freud's

legacy is not to be assessed in terms of ideas that emerged since Freud died, but rather in terms of the ideas propounded by Freud himself through the 24 volumes of his collected works. Chief among these, as Bornstein and Masling (1998) note at the very beginning of their book, is a particular view of unconscious mental life—a view that, to date, has found little or no support in empirical science.

A TAXONOMY OF THE PSYCHOLOGICAL UNCONSCIOUS

More positively, the studies reviewed here indicate that consciousness is not to be identified with any particular perceptual-cognitive functions such as discriminative response to stimulation, perception, memory, or the higher mental processes involved in judgment or problem solving. All of these functions can proceed outside of phenomenal awareness. Rather, consciousness is an experiential quality that may accompany any of these functions. The fact of conscious awareness may have particular consequences for psychological function—it seems necessary for voluntary control, for example, as well as communicating one's mental states to others, and for sponsored teaching. But it is not necessary for many forms of complex psychological functioning. Moreover, these findings suggest a taxonomy of nonconscious mental structures and processes constituting the domain of the psychological unconscious.

There are, within the domain of procedural knowledge, a number of complex processes that are *unconscious* in the proper sense—unavailable to introspection, in principle, under any circumstances. By virtue of routinization (or perhaps because they are innate), such procedures operate on declarative knowledge without either conscious intent or conscious awareness, in order to construct the person's ongoing experience, thought, and action. Execution of these mental processes, which can be known only indirectly through inference, is inevitable and consumes no attentional capacity. They may be described as unconscious in the strict sense of that term—in short, they comprise the *unconscious proper*.

In principle, declarative knowledge is available to phenomenal awareness, and can be known directly through introspection or retrospection. However, it is now clear that procedural knowledge can interact with, and utilize, declarative knowledge that is not itself accessible to con-

scious awareness. Many phenomena of implicit perception, memory, and thought, especially those associated with degraded stimulus processing, suggest a category of *preconscious* declarative knowledge structures. Unlike truly unconscious procedural knowledge, these aspects of declarative knowledge would be available to awareness under ordinary circumstances. Although activated to some degree by current or prior perceptual-cognitive activity, and thus able to influence ongoing experience, thought, and action, they do not cross the threshold required for representation in working memory, and thus for conscious awareness. These representations, which underlie the phenomena of implicit perception and memory, reside on the fringes of consciousness and changed circumstances could render them consciously accessible—at least in principle.

Finally, the phenomena of hypnosis, hysteria, and related states seem to exemplify a category of *subconscious* declarative knowledge. These mental representations, fully activated by perceptual inputs or acts of thought, above the threshold ordinarily required for representation in working memory, and available to introspection and retrospection under some circumstances, seem nevertheless dissociated from phenomenal awareness (Hilgard, 1977b). Dissociative phenomena are of theoretical interest because they do not comfortably classify as either unconscious or preconscious. They are not limited to innate or routinized procedural knowledge; their execution is not automatic in the traditional sense, because it is sensitive to context and consumes cognitive capacity. The stimulus input has not been degraded in any way, and the resulting memory traces are fully encoded and available for explicit retrieval. From the point of view of activation notions of consciousness, these phenomena are theoretically interesting because they indicate that high levels of activation, supported by the active deployment of attention and complex mental processing, while presumably necessary for residence in working memory, are not sufficient for conscious awareness.

CONSCIOUSNESS, THE PSYCHOLOGICAL UNCONSCIOUS, AND THE SELF

What is required in order to achieve conscious awareness? At a psychological level of analysis, it seems that conscious awareness requires that a mental representation of an event be connected

with some mental representation of the self as agent or experiencer of that event (Kihlstrom, 1997a). In his discussion of the stream of consciousness, James (1890/1980) wrote that “the first fact for . . . psychologists is that thinking of some sort goes on” (p. 219). He also wrote, immediately thereafter, that “thought tends to personal form” (p. 220)—that is, every thought (by which James meant every conscious mental state) is part of a personal consciousness: “The universal conscious fact is not ‘feelings exist’ or ‘thoughts exist’ but ‘I think’ and ‘I feel’” (p. 221, emphasis added). In other words, an episode of ongoing experience, thought, and action becomes conscious if, and only if, a link is made between the mental representation of the event itself and some mental representation of the self as the agent or experiencer of that event.

This mental representation of self (Kihlstrom & Klein, 1994, 1997), including one’s internal cognitive, affective, and conative environment, resides in working memory, as a memory structure, along with coexisting representations of the current external environment (Anderson, 1983). Both self and context representations are necessary for the construction of a full-fledged conscious perception—which, following James, always seems to take the following form: “I see [or hear, smell, taste, etc.] *this, now.*” And since memory is the residual trace of perceptual activity, these elements are necessary for the reconstruction of a full-fledged conscious recollections as well.

Within a generic associative network theory of knowledge representation (e.g., Anderson, 1983), an episode of experience is represented by one node connecting three others: an event node, containing a raw description of an event; a context node, specifying the spatial and temporal (and perhaps emotional and motivational) context in which the event occurred; and a self node, indicating the person as the agent or the experiencer of the event. Conscious recollection of such an event occurs only when the representation of the self is retrieved along with some other information about the event. The inability to retrieve the links among all three types of propositions accounts for some of the peculiarities in conscious memory (Kihlstrom, 1997a). What unites the various phenomena of the cognitive unconscious—unconscious procedural knowledge and the various forms of implicit perception, memory, and thought comprising pre-conscious or subconscious declarative knowledge—is that the link to self either does not get

forged in the first place, or else it is subsequently lost. Thus, Claparède (1911/1951; see also Kihlstrom, 1995a) wrote of the amnesic syndrome: “If one examines the behavior of such a patient, one finds that everything happens as though the various events of life, however well associated with each *other* in the mind, were incapable of integration with the *me* itself” (p. 71, emphasis in original).

TOWARD A NEW CENTURY OF RESEARCH

As the 19th century turned into the 20th, the psychological unconscious was much in the air, but little was known about its nature and limits. When James said to Freud, “The future of psychology belongs to your work,” he was referring to unconscious mental life in general, rather than Freud’s particular conception of it. That work was suspended during the heyday of behaviorism, but it is in full swing again as the 20th century turns into the 21st. The success and vigor of research on unconscious mental life is clear to almost everyone. Of course, some doubters and sceptics remain—egged on no doubt by the excessive claims of some theorists, and some clinicians, who retain a romantic view of the unconscious as all-powerful and all-knowing. This work promises much to the personality and social psychologists of the future. A full century since the publication of Janet’s (1889) *Psychological Automatism*s, and James (1890) *Principles*, and six decades since the death of Freud, and 50 years since the birth of the New Look, the study of nonconscious life has been completely revolutionized. For the first time, contemporary cognitive psychology has begun to offer a clear theoretical framework for studying the relations between conscious and nonconscious mental life. Along with the development of a new class of psychological theories has come a new set of observations, derived from sophisticated new experimental paradigms, including research in cognitive neuropsychology. Thus far, this body of research has revealed a view of nonconscious mental life that is more extensive than the unconscious inference of Helmholtz, but also quite different—kinder, gentler, and more rational—from the seething unconscious of Freud.

Still and all, it should be recognized that almost all of the work to date has been done within the confines of cognitive psychology and

cognitive neuropsychology, with relatively little attention paid to unconscious emotional and motivational life, or to the role of unconscious processes in personality and social interaction. Thus, it would seem that an important agenda item over the near term would be the deliberate adoption by personality and social psychologists of the concepts and principles that have served their cognitive colleagues so well, and the systematic extension of research on the psychological unconscious beyond words and polygons to people and actions, and beyond implicit cognition to implicit emotion and implicit motivation.

ACKNOWLEDGMENTS

The point of view represented herein is based in part on research supported by Grant Nos. MH-35856 and MH-44739 from the National Institute of Mental Health. I thank Jennifer Beer, Michael Kim, Andres Martinez, Lillian Park, Katherine Shobe, and Heidi Wenk for their comments at various stages in the preparation of this chapter.

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HANDBOOK OF PERSONALITY

Theory and Research

SECOND EDITION

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THE GUILFORD PRESS

New York / London

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A Division of Guilford Publications, Inc.
72 Spring Street, New York, NY 10012
<http://www.guilford.com>

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Printed in the United States of America

This book is printed on acid-free paper.

Last digit is print number: 9 8 7 6 5 4 3 2 1

Library of Congress Cataloging-in-Publication Data

Handbook of personality: theory and research / edited by Lawrence A. Pervin, Oliver P. John. — 2nd ed.

p. cm.

Includes bibliographical references and index.

ISBN 1-57230-483-9

1. Personality. I. Pervin, Lawrence A. II. John, Oliver P.

BF698.H335 1999

99-25807

155.2—DC21

CIP

