
The Psychological Unconscious

Found, Lost, and Regained

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In response to Greenwald's article on contemporary research on unconscious mental processes, the authors address three issues: (a) the independence of much recent research and theory from psychodynamic formulations; (b) the broad sweep of the psychological unconscious, including implicit perception, memory, thought, learning, and emotion; and (c) the possibility that the analytic power of unconscious processing may depend both on the manner in which mental contents are rendered unconscious and the manner in which they are to be processed.

After 100 years of neglect, suspicion, and frustration, unconscious processes have now taken a firm hold on the collective mind of psychologists. So-called *subliminal perception* has a new lease on life, and cognitive neuropsychologists offer a compelling view of unconscious memory. Social and nonsocial psychologists have documented the role of nonconscious processes in learning and judgment, and explorations of intuition and insight raise again the idea of unconscious thought. These developments within the *cognitive unconscious* (Kihlstrom, 1987), a term introduced by Paul Rozin (1976), have set the stage for a revival of interest in unconscious emotional and motivational processes as well. This attention to the trilogy of mind (Hilgard, 1980) gives rise to a new view of the psychological unconscious as a whole (Kihlstrom, 1990).

In a very real sense, our current interest in unconscious mental life, or information processing outside of conscious awareness, owes its revival to work by cognitive neuropsychologists with patients suffering various forms of the amnesic syndrome. The recognition that neurological patients suffering from the amnesic syndrome show the persisting effects of past events that they cannot remember—what Schacter (1987; see also, Eich, 1984; Jacoby, Lindsay, & Toth, 1992, this issue) has called *implicit memory*—has made it possible to use concepts such as *awareness* and *consciousness* without blushing and to accept the very idea of unconscious influence on experience, thought, and action. These studies cut through longstanding questions about threshold-setting procedures, demand characteristics, and the validity of introspections. There is something of a paradox here, in that it sometimes seems that we are only prepared to believe self-reports when those who give them are brain-damaged! But never mind; the studies made a convincing case and led investigators to look elsewhere for similar sorts of phenomena.

The Non-Freudian Unconscious

Greenwald's (1992, this issue) historical treatment, tracing developments from the New Look 1 of Bruner (1992, this issue) and others, to the New Look 2 of Erdelyi (1992, this issue) and others, to a New Look 3 that simultaneously embraces human information processing and abandons psychodynamic theory, is provocative and interesting. However, it leaves out a number of contributions that should not go unrecognized. In the first place, the idea of unconscious mental life had a long and distinguished history before Freud. For example, Janet, Freud's precursor and rival, promoted a concept of dissociation as an alternative to repression (Ellenberger, 1970; Macmillan, 1990). His ideas, which had so much influence on William James (Taylor, 1983), were revived by Hilgard (1986) in his neodissociation theory of divided consciousness (for an overview, see Hilgard, 1992).

Furthermore, even before Breuer and Freud (1893–1895/1955) published their *Studies in Hysteria*, Pierce and Jastrow (1884) were addressing the problem of subliminal perception—not because of any interest in neurosis or repression, but because of doubts about the psychophysical concept of the limen, or threshold (Kihlstrom, Barnhardt, & Tataryn, in press). Their work stimulated a long line of research on unconscious sensation and learning (Adams, 1957; Dixon, 1981; Lewicki, Hill, & Czyzewska, 1992, this issue; Reber, 1989). This work came under sustained attack in the 1950s and 1960s, and again in the 1980s, in part because of its adoption by New Look 1 and New Look 2 psychologists with psychodynamic interests. But it was not itself inherently psychodynamic in orientation.

Finally, of course, there is a long tradition of interest in the concept of automatic as opposed to controlled processing (e.g., Shiffrin & Schneider, 1984). In some ways, this tradition has its origins in Helmholtz's concept of unconscious inference in perception. The idea that some

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aspects of perception, language, thought, and motor control are mediated by procedures that are inevitably engaged by certain conditions, and cannot be brought into direct introspective awareness under any circumstances, is by now almost noncontroversial. Greenwald (1992) rightly sets this literature aside and focuses his attention on the potential influence of unconscious mental *contents* as opposed to unconscious mental *processes*, wherein considerable controversy persists. But the literature exists, nonetheless, and it represents a distinguished tradition of research and theory that evolved independently of psychodynamic theory.

The point is that much contemporary research on unconscious mental life is dismissed on the grounds that Freud had said it all before and that our carefully designed and painstakingly executed experimental work is either trivial or merely a gloss on the clinical insights of the Master. To the contrary, it is important to recognize that much of this research would have been done had Freud (or Janet, for that matter) never lived.

More important, the psychological unconscious documented by latter-day scientific psychology is quite different from what Sigmund Freud and his psychoanalytic colleagues had in mind in fin de siècle Vienna. Their unconscious was hot and wet; it seethed with lust and anger; it was hallucinatory, primitive, and irrational. The unconscious of contemporary psychology is kinder and gentler than that and more reality bound and rational, even if it is not entirely cold and dry. In any event, the evidence for the unconscious discussed by Greenwald (1992) in no way provides evidence for psychodynamic ideas (for an opinion to the contrary, see Shevrin & Dickman, 1980). In some ways, this situation is regrettable. It seems doubtful that there will be too many novels written or too many movies made about semantic priming effects. But then again, the plot lines of both *Spellbound* and *The Manchurian Candidate* rely on implicit memory; so perhaps a nonpsychoanalytic formulation of the psychological unconscious still can be pretty interesting, even to artists, writers, and other nonpsychologists.

The Scope of the Evidence

Greenwald (1992) rightly restricts his treatment to the most reliable and compelling evidence for unconscious processes: phenomena that have been thoroughly studied under tight experimental control, have been observed outside of the laboratory that discovered them, and whose eliciting conditions and boundaries are in some sense known. However, there are other domains in which the evidence, although admittedly controversial, should be considered. For example, there are certain neuropsychological conditions that seem to involve unconscious processing of the same highly limited sort that Greenwald identifies in subliminal perception. In the "blindsight" syndrome, associated with damage to the striate cortex of the occipital lobes, patients display discriminative responses to stimuli that they are unable to see (see Weiskrantz, 1986). However, these responses are typically limited to questions of presence or absence, relative lo-

cation, or gross movement; the patients cannot make accurate judgments about color, form, or identity. And although there is some evidence for implicit memory for events occurring during surgical anesthesia (e.g., Kihlstrom & Schacter, 1990), it is highly likely that these effects are analytically limited in much the same manner that Greenwald observes in subliminal perception.

On the other hand, and returning to the dissociative tradition in psychopathology initiated by Janet, there are the symptoms and syndromes of "hysteria," now known as the dissociative and conversion disorders. In these conditions, subjects present with disorders of consciousness that, in some ways, mimic the effects of brain damage: amnesia, blindness, deafness, anesthesia, and paralysis (for reviews, see Kihlstrom, Barnhardt, & Tataryn, in press; Kihlstrom, Tataryn, & Hoyt, in press; Schacter & Kihlstrom, 1989). When these patients report that they cannot remember, or see, or hear, they are reporting on their conscious experiences, or rather, their lack thereof. Yet, as Janet and many others have shown, careful examination shows the clear impact of current or past events on these patients. In fact, as Janet himself understood, such dissociations are considered to be diagnostic of these disorders.

Similarly, in a tradition exemplified by Hilgard (1986, 1992; Kihlstrom, 1992), the same sorts of divisions of consciousness can be produced in selected subjects by means of hypnotic suggestions for amnesia, analgesia, deafness, and the like. Thus, just as patients with multiple personality show transfer of implicit but not explicit memory between alter egos (Schacter & Kihlstrom, 1989), subjects with posthypnotic amnesia show priming effects of words and savings in relearning skills that they do not remember (for a review, see Kihlstrom, 1985). And just as functionally blind patients show the influence of visual stimuli on choice behavior, so do their normal counterparts given suggestions for hypnotic blindness (Kihlstrom, Barnhardt, & Tataryn, in press). There are many other such examples.

These sorts of influences are unconscious, in the same sense that subliminal activation is unconscious: The patients and subjects in question are apparently not aware of the events that affect them. But these unconscious influences may be quite different from those observed in subliminal perception (to take one example), for the simple reason that the events in question, although inaccessible to phenomenal awareness, may nonetheless be subject to quite complex cognitive processing.

The Question of Analytic Power

The sheer diversity of the available evidence for unconscious perception, memory, thought, and learning, is important precisely because an appreciation of the full span of the psychological unconscious may provide an additional perspective on the matter of the analytic power of unconscious processes. Greenwald (1992) is quite right to focus on this issue, given the apparent discrepancy between, for example, dramatic claims for unconscious processing of messages such as Mommy and I are one

and the difficulty that others have had in demonstrating semantic processing of single words.

In the final analysis, though, it seems likely that the question of analytic power will not be answered with single short statements, such as smart versus dumb, or low versus high. Rather, the answer may depend on precisely how the contents in question are rendered unconscious and on the precise details of the task required of the subject. For example, preconscious processing of degraded stimuli, as in implicit perception of subliminal events or blindsight, may be analytically less powerful than subconscious processing available in the functional blindness of hysteria and hypnosis (Kihlstrom, 1984, 1987). Similarly, although some manifestations of implicit memory may be restricted to the formation of a perceptual representation that goes little beyond analysis of surface stimulus features (Schacter, 1991; Tulving & Schacter, 1990), other instances of priming clearly involve semantic processing (e.g., Kihlstrom, 1980).

Even within the domain of preconscious processing, processing of subliminal presentations just above the "objective" threshold may be more limited than presentations just below the "subjective" threshold (see Merikle, 1992, this issue). The manner of masking may be important. Briefly presented, unmasked events may be more thoroughly analyzed than masked events; there may be a difference between the effects of energy and pattern masks; and it may be important whether the pattern mask is central or peripheral. Parafoveal or dichotic stimuli, presented outside the focus of attention, may receive less processing than unseen or unheard events which the subject expects to occur. And even masked stimuli, presented near the objective threshold, may be deeply analyzed under certain circumstances. Conscious awareness is a logical prerequisite to conscious control, so it should not be surprising that preconscious processing should be limited to that which is automatic. But deeper, more elaborate analyses also may be possible, provided that the processing task in question has been automatized through extensive practice.

Whether these sorts of hypotheses may eventually prove to be right doesn't really matter. What matters is that the study of unconscious mental processes has come of age and is here to stay. After more than 100 years, psychologists have moved from psychodynamic interpretation to controlled experiment. But more important, we have moved beyond existence proofs to some really interesting research and beyond an inchoate notion to something that resembles a coherent research paradigm that is tightly woven into the fabric of modern scientific psychology.

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