

CHAPTER 24

Consciousness and Me-ness

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At the very beginning of scientific psychology, James (1890/1981) noted the intimate relation between consciousness and the self:

Every thought tends to be part of a personal consciousness. . . . The only states of consciousness that we naturally deal with are found in personal consciousnesses, minds, selves, concrete particular I's and you's [*sic*]. Each of these minds keeps its own thoughts to itself. . . . It seems as if the elementary psychic fact were not *thought* or *this thought* or *that thought*, but *my thought*, every thought being owned. . . . On these terms the personal self rather than the thought might be treated as the immediate datum in psychology. The universal conscious fact is not "feelings and thoughts exist" but "*I think*" and "*I feel*." (p. 221, italics in original)

Consciousness comes, in James' view, when we inject ourselves into our thoughts, feelings, desires, and actions—when we take possession of them, experience and acknowledge them as our own. Consciousness is always a *personal* consciousness, and this was at least as true for memory as for any other mental faculty (James, 1890/1981, pp. 610–612):

Memory proper, or secondary memory as it might be styled, is the knowledge of a former state of mind after it has already once dropped from consciousness; or rather *it is the knowledge of an event, or fact*, of which meantime we have not been thinking, *with the additional consciousness that we have thought or experienced it before*.

The first element which such a knowledge involves would seem to be the revival in the mind of an image or copy of the original event. . . . [But] a farther

condition is required before the present image can be held to stand for a *past original*.

That condition is that the fact imaged be *expressly referred to the past*, thought as in *the past*. . . .

But even this would not be a memory. Memory requires more than the mere dating of a fact in the past. It must be dated in *my* past. In other words, I must think that I directly experienced its occurrence. It must have that "warmth and intimacy" which were so often spoken of in the chapter on the Self, as characterizing all experiences "appropriated" by the thinker as his own.

A general feeling of the past direction in time, then, a particular date conceived as lying along that direction, and defined by its name or phenomenal contents, and imagined as located therein, and owned as part of my experience,—such are the elements of every act of memory.

Janet (1907), in his lectures on *The Major Symptoms of Hysteria*, picked up the theme:

The complete consciousness which is expressed by the words, "I see, I feel a movement," is not completely represented by this little elementary phenomenon [i.e., of a sensation of vision or of motion]. It contains a new term, the word "I," which designates something very complicated. The question here is of the idea of personality, of my whole person. . . . There are then in the "I feel," two things in presence of each other: a small, new, psychological fact, a little flame lighting up—"feel"—and an enormous mass of thoughts already constituted into a system—"I." These two things mingle, combine; and to say "I feel" is to say that the already enormous personality has seized upon and absorbed that little, new sensation which has just been produced. (pp. 304–305)

This connection to the self appears to be missing in cases of nonconscious influence. Consider Claparède's (1911/1950) comments on what is now called the amnesic syndrome (for an extended discussion, see Kihlstrom, 1995): "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).

In other words, when mental representations are integrated with the self, they become part of conscious mental life; when this integration is lacking, they are not accessible to introspection, although they may influence experience, thought, and action outside of phenomenal awareness.

LINKING THOUGHT TO THE SELF

How might we translate these ideas into the language of modern psychology? One way is through associative network models of cognition and memory, such as the successive generations of Anderson's (1976, 1983, 1990, 1993) ACT framework. These models represent declarative knowledge in a graph structure, with nodes standing for concepts and associative links standing for

the relations between them, forming sentencelike propositions that capture the gist of an event but may eliminate a great deal of perceptual detail. A subset of declarative memory, known as working memory, contains a representation of the organism in its environment, current processing goals, and other units of declarative knowledge that have been activated above a certain threshold.

There is also a procedural memory, in which nodes representing goals and conditions are linked to actions; these goal-condition-action links form productions, grouped into production systems. The goals and conditions are themselves represented by declarative knowledge structures, and execution of the procedure may activate some node in declarative memory, or form a new one. Procedural knowledge is unconscious in the strict sense that we have no direct introspective access to it, and can know it only by inference.

Within the network-theory framework, we can begin to see what the self might look like. Viewed as a declarative knowledge structure, the self can be defined as one's mental representation of his or her own personality, broadly construed (Kihlstrom & Cantor, 1984; Kihlstrom, Cantor, Albright, Chew, Klein, & Niedenthal, 1988; Kihlstrom & Klein, 1994; Kihlstrom & Marchese, in press). In this way, the self can be construed as a fragment of a larger declarative memory network. So, my own mental representation of self consists of interconnected nodes representing my name; the names of people intimately associated with me; and my physical, demographic, and personality characteristics. Beyond these meaning-based representations, there may be links to perception-based representations of my face and body—quite literally, a self-image. In addition to this context-free knowledge about self, there is also autobiographical knowledge about specific experiences, thoughts, and actions that occurred at unique points in space and time. The presence of this contextual information ordinarily distinguishes episodic from semantic memory (Tulving, 1983, 1993).

In theory, an activated mental representation of the self resides in working memory, where it routinely comes into contact with representations of the environmental context (both local and global), current processing goals, and other knowledge structures activated by perception, memory, or thought. This connection defines the self as the agent or patient of some particular action or the stimulus or experiencer of some particular state (Brown & Fish, 1983)—whatever event is simultaneously represented in working memory.

According to models like ACT, perceptual activity and other acts of thought activate nodes corresponding to the features of the perceived event. Thus, for example, if we observe a hippie touch a debutante (Anderson & Bower, 1973), nodes corresponding to the concepts *HIPPIE*, *TOUCH*, and *DEBUTANTE* are activated, and linked to form a propositional representation of the event:

A HIPPIE TOUCHED A DEBUTANTE.

Note that the associative links actually join tokens, referring to particular hip-

pies, touches, and debutantes, of more abstract types stored in semantic memory. Each node then serves as a source of activation that spreads to related semantic knowledge (Anderson, 1984).¹ Thus, activation of *HIPPIE* also activates tokens of *LONG STRINGY HAIR*, *LOVE BEADS*, and *VOLKSWAGEN BUS*; *DEBUTANTE* activates *LONG CURLY HAIR*, *EVENING GOWN*, and *PORSCHE*; and *TOUCH* activates *BRUSH*, *HIT*, and *KISS*.

By virtue of achieving a particular level of activation, the mental representation of this event enters working memory, where it contacts representations of other sorts of knowledge—specifically, representations of the context in which the event has taken place, and of the self as the agent or patient, stimulus or experiencer, of the event. Thus, the full-fledged mental representation of the event corresponds to a more complex piece of propositional knowledge than a mere statement of fact (Brewer, 1986), for example, self as subject:

I SAW THE HIPPIE TOUCH THE DEBUTANTE
IN MACARTHUR PARK ON THURSDAY;

or, self as object:

I WAS THE HIPPIE WHO TOUCHED THE DEBUTANTE;

or, perhaps:

I WAS THE DEBUTANTE WHOM THE HIPPIE TOUCHED.

To summarize, a full-blown episodic representation contains at least three different propositions, all linked together: an *event node*, which provides a raw description of the event; a *context node*, which represents the spatio-temporal circumstances in which the event occurred (there are probably separate propositions representing time and place); and a *self node*, representing the self as the agent or patient, stimulus or experiencer, of some event (there may be nodes representing the person's emotional and motivational state as well). Simplified representations are depicted in Fig. 24.1. Residual activation at these nodes is the mechanism underlying repetition priming effects; activation spreading to related nodes in declarative memory forms the basis for semantic priming effects; and if some activated nodes comprise the goals and conditions of a production system, some piece of procedural knowledge will be automatically executed.

By virtue of elaborative and organizational processing at the time of perception, a trace of the event is encoded in permanent storage, available for subsequent use; that is, it does not disappear entirely when it loses activation and drops out of working memory. At the time of retrieval, a query to memory

¹I recognize that there is some question about whether activation really spreads (e.g., McKoon & Ratcliff, 1992; McNamara, 1992, 1994; Ratcliff & McKoon, 1981, 1988, 1994). In what follows, the phrase "spreading activation" is used only as a familiar metaphor.

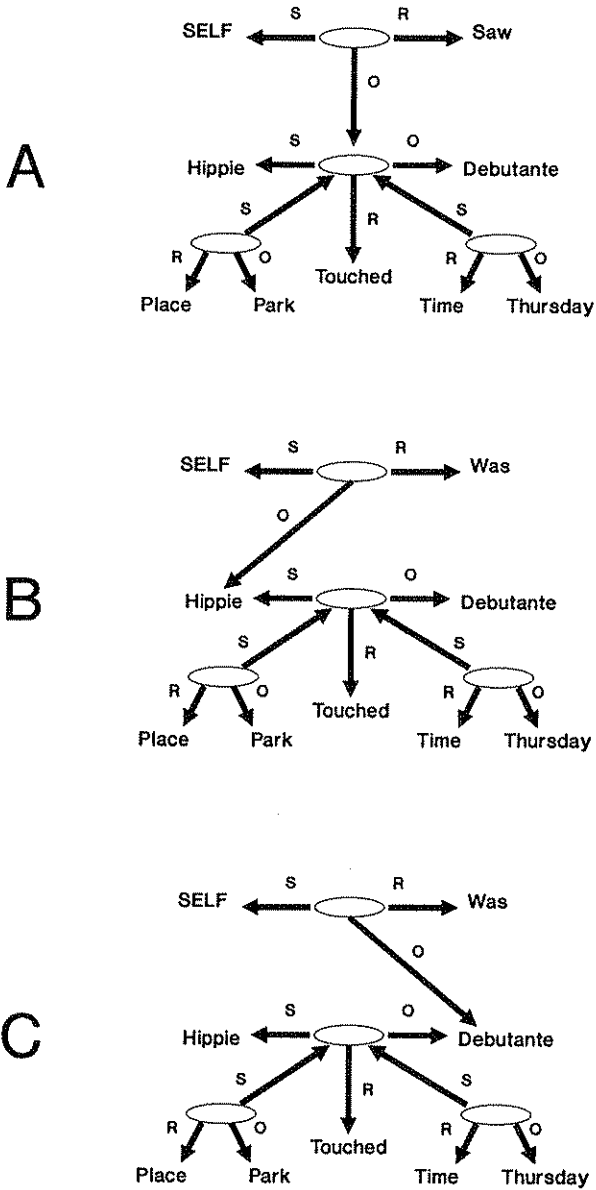


FIG. 24.1. Example propositional representations of an event in which the self is an external observer (A), agent (B), or patient (C) of the action.

activates nodes corresponding to the elements of the query, while the accessibility of information represented at associated nodes serves as the basis for the person's response to those queries. Thus, a question such as "What did you see in MacArthur Park last Thursday?" activates the self and context nodes; activation emanating from these nodes converges on the associated event node, and the person replies, "A hippie touched a debutante." A similar account can be given of queries and responses concerning current experience, except that the probe is worded in the present tense, and the response reflects direct readout of the contents of working memory. Thus, the mental representation of self is the key to conscious perception and memory: Whatever is concurrently or retrospectively linked to the self is represented in awareness and available for report.

LINKING EXPERIENCE TO THE SELF IN MEMORY

According to Claparède (1911/1950), what is missing in cases of nonconscious processing is this sense of *moûté*, or *me-ness*, or the link to the self as the agent or patient, stimulus or experiencer, of some event. To explain, consider the famous incident that gave Claparède his insight. A woman with Korsakoff's syndrome had anterograde amnesia so dense that she remembered nothing that had happened to her since the onset of her illness. Nevertheless, Claparède reported that she showed what we now recognize as source amnesia (Evans, 1979; Schacter, Harbluk, & McLachlan, 1984; Shimamura & Squire, 1987). After Claparède pricked her hand with a pin hidden in his fingers, causing her palpable pain, she quickly forgot the episode (and everything else about her encounters with him).

But when I again reached out for her hand, she pulled it back in a reflex fashion, not knowing why. When I asked for the reason, she said in a flurry, "Doesn't one have the right to withdraw her hand?" and when I insisted, she said, "Is there perhaps a pin hidden in your hand?" To the question, "What makes you suspect me of wanting to stick you?", she [replied], "That was an idea that went through my mind," or she would explain, "Sometimes pins are hidden in people's hands." But never would she recognize the idea of sticking as a "memory." (Claparède, 1911/1950, pp. 69-70)

The interpretation here is that the link to the self was established in working memory at the time that the pinprick occurred, and was maintained so long as the event resided in working memory. Thus, the patient was aware that it was she who had just been pricked, and she could still talk about it moments or minutes later. By virtue of direct readout from working memory, she was conscious of what was happening to her at the moment, and what had happened to her in the very recent past. As she was distracted by other events,

however, the pinprick dropped out of working memory, and other events took its place.

Under ordinary circumstances, given enough elaborative and organizational activity, a representation of the event (e.g., CLAPARÈDE PRICKED ME WITH A PIN HIDDEN IN HIS HAND) would now be permanently encoded in the patient's declarative memory. But suppose that—perhaps by virtue of damage to specific brain structures—the link to self was not encoded as well. Rather, it was permanently lost. Now Claparède returns to the patient, and asks whether they have ever met. This query activates the mental representation of self in working memory (the question is whether *she* has ever met him), but because the active representation of self is not connected to relevant material outside working memory, she draws a blank. Put another way, the patient had concurrent, but not retrospective awareness of the episode. Apparently, the link to the self was made at the time of perception, but not preserved in memory.

But despite the failure to consciously recollect having met Claparède before, something about the previous event has been retained in memory. Forced to choose, she may guess that he is a doctor rather than a lawyer; perhaps Claparède's face or tone of voice activates perception-based representations stored in memory—enough to give her a vague feeling of familiarity; forced to guess, she might choose Claparède over another doctor, himself objectively unknown to her, as someone she *might* have met before. Certainly enough world knowledge has been gleaned from her previous experience that she will now greet him in an unusual manner. After all, sometimes people hide pins in their hands.

By this time, there have been a large number of demonstrations that amnesic patients can show priming, savings, transfer, and interference effects, acquire new facts and skills, and display other manifestations of memory, all without any conscious recollection of the event responsible for the effect (e.g., Graf, Squire, & Mandler, 1984; for reviews, see Moscovitch, Vriezen, & Goshen-Gottstein, 1993; Shimamura, 1989). These kinds of observations led Schacter (1987) and others to distinguish between two forms of memory: explicit and implicit (for comprehensive reviews, see Johnson & Hasher, 1988; Richardson-Klavehn & Bjork, 1988; Roediger, 1990; Roediger & McDermott, 1993; Schacter, 1995; Schacter, Chiu, & Ochsner, 1993; Schacter & Tulving, 1994). Although this distinction has sometimes been couched in terms of two different memory systems, or two different processes acting on a single memory system, this chapter sticks closer to the phenomenology and refers to explicit and implicit memory as two different expressions of memory for an episode. *Explicit memory* involves conscious recollection of a prior event, as reflected in recall or recognition. *Implicit memory* refers to any change in experience, thought, or action attributable to a past event, independent of conscious recollection. In other words, memory is implicit in task performance.

From the point of view of this chapter, implicit memory is memory without the self. The contents of memory have been changed by the perception of an event, which is roughly what we mean by a memory, but reference to the self as the agent or patient, stimulus or experiencer, of the event has not been preserved.

Of course, implicit memory is observed in normal subjects, without any signs of brain damage (for a comprehensive review, see Roediger & McDermott, 1993). But here, the underlying mechanism is the same. By and large, the explicit-implicit dissociations observed in normal, intact subjects are produced by experimental conditions that prevent the subject from engaging in the elaborative and organizational activity that produces a good, solid encoding. For example, shallow processing impairs explicit memory, but has little effect on implicit memory (Jacoby & Dallas, 1981). Alternatively, the encoded trace may be degraded over the retention interval, leading to failures of recall and recognition. Nevertheless, subjects can still show significant savings in re-learning forgotten items (Nelson, 1978). Apparently, a permanent link to self is not automatically encoded (else it would be encoded under shallow as well as deep processing conditions); and it appears to be somewhat fragile (else it would remain intact over the retention interval). Nevertheless, other aspects of the event are encoded, and remain available in memory to support such classic implicit memory phenomena as priming, source amnesia, savings, and interference.

Other manifestations of implicit memory involve the acquisition of cognitive and motoric skills, which are also performed unconsciously. Again, the common element is the absence of a link to the self. Assume that skill learning begins with a step-by-step recipe for some activity (such as tying a necktie in a Windsor knot). In the early stages of skill learning, these steps are brought into working memory one at a time, and performed consciously. That is, the person is aware of performing each step individually. With enough practice the whole sequence is compiled into a single routine that, once initiated, just runs itself off automatically. The person is no longer aware of what he or she is doing. From the present point of view, this is because the intermediate steps have been compiled into a single production system (Anderson, 1982), which never gets represented in working memory, and thus never has the opportunity to make contact with the mental representation of the self. The person was aware of selecting the tie (perhaps), and later was aware that the tie was successfully tied, but not of anything that went on in between.

In the last years of Eugene Ormandy, when the Philadelphia Orchestra virtually confined its repertoire to 19th-century warhorses, one of the cellists quit when he discovered himself playing the third movement of a Tchaikovsky symphony, but could not remember playing the first one. That is automatization. A similar account can be given of more dramatic instances of automatization: musicians or motorists who play pianos or drive cars during *petit mal*

seizures, or drunks who manage to get home from the bar without killing themselves or anyone else, or sleepwalkers who wander around the house and return to their beds with no recollection of their activities the next morning. Some of this behavior is mediated by highly automated procedural knowledge, which never makes contact with the self during its execution. The rest may be deliberate and effortful, and therefore conscious at the time; but because of impairments in encoding processes the link to the self, and thus the possibility of conscious recollection, is not preserved in memory.

LINKING EXPERIENCE TO THE SELF IN PERCEPTION

Kihlstrom, Barnhardt, and Tatarzyn (1992) extended the explicit-implicit distinction to the domain of perception. Following Schacter (1987), explicit perception refers to the individual's conscious awareness of a current (or very recent) event, as reflected in signal detection, or the identification or description of an object; implicit perception is reflected in any change in experience, thought, or action that is attributable to an event in the current (or very recent) stimulus environment, independent of conscious perception. Again, perception is implicit in the person's task performance.

The paradigm cases of implicit perception parallel those of implicit memory. In blindsight, damage to the striate cortex prevents the construction of conscious percepts (Weiskrantz, 1986). In subliminal perception, a stimulus is degraded by various conditions of presentation (for reviews, see Greenwald, 1992; Merikle & Reingold, 1992). What they have in common, on this view, is that the perceptual representation never enters working memory, and thus never makes contact with the self in the first place. Thus, when the person is asked to report what he or she sees or hears, there's nothing to report. But the availability of the representation, or some by-product of it somewhere in the cognitive system, can support implicit perception effects. Thus, if blindsight patients are forced to choose, they can guess the characteristics of the unseen stimulus at above-chance levels. And in subliminal perception, subjects can show various sorts of priming effects. Implicit perception is sometimes reflected in performance on implicit memory tasks. So, in Kunst-Wilson and Zajonc (1980), subjects showed mere exposure effects while making preference judgments of tachistoscopically presented irregular polygons, even though recognition was at chance levels (for a review, see Bornstein, 1989). The exposure effect shows that the stimuli were perceived, at some level; but formally, the task involves memory rather than perception. Subliminal stimulation created some representation of the stimulus in memory, but that representation never made contact with the self, either at the time or later.

The same thing sometimes happens in general anesthesia, but perhaps for

a different reason (for a review, see Cork, Couture, & Kihlstrom, in press). Evidence has been obtained that patients can show implicit memory for events occurring while they were under an adequate plane of general anesthesia, even though they have no conscious recollection of these events afterward. Thus, in one experiment (Kihlstrom, Schacter, Cork, Hurt, & Behr, 1990), patients were presented with a tape recording of paired associates of the form BREAD-BUTTER; in the recovery room, they were unable to remember the response term with which the stimulus terms had been paired. But, when presented with the stimulus terms, and asked to report the first word that came to mind, they were more likely than control subjects to produce items from the study list. Other investigators have obtained similar results, although admittedly there is more to be done to bring the phenomenon under good experimental control. Again, assuming that adequately anesthetized patients really are not aware of what is happening to them at the time it is happening, we have implicit memory giving evidence for implicit perception. In this case, however, the detailed mechanism is slightly different. When a person is rendered unconscious, he or she does not have any working memory at all. Thus, it is not just a matter of event representations failing to make contact with a mental representation of the self. The problem is that there is no activated self to make contact *with*.

The situation appears to be rather different in the case of sleep. The old conclusion about sleep learning, based on Simon and Emmons (1955), was that sleep learning is possible to the extent that the subject remains awake. But that conclusion was based on studies of explicit memory, raising the question of whether implicit memory might be preserved even in the absence of explicit memory. But Wood and his colleagues (Wood, Bootzin, Kihlstrom, & Schacter, 1992) also failed to find any evidence of implicit memory. Wood presented sleeping subjects with a tape recording of paired associates consisting of a homophone and a disambiguating context, such as TORTOISE-HARE. Upon awakening, the subjects were unable to produce the response terms in a test of cued recall; but neither did they show any priming when asked to spell the response terms. Similar results were obtained in a category-instantiation task. It appears that we will have to take even more seriously the notion that sleep involves a kind of sensory gate, preventing stimulus information from reaching higher cortical centers. In any event, the discrepancy between sleep (where both explicit and implicit memory are impaired) and general anesthesia (where implicit memory is sometimes spared) is something that needs definitive resolution.

DISSOCIATIVE PHENOMENA AND THE SELF

As noted earlier, some theorists (e.g., Schacter & Tulving, 1994; Tulving & Schacter, 1990) hold that explicit and implicit memory reflect the operation

of two different memory systems in the brain; the same hypothesis may apply to the perceptual case. Others (e.g., Jacoby, 1991; Roediger, Weldon, & Challis, 1989) have vigorously argued that explicit-implicit dissociations are mediated by two different sorts of mental processes operating on a single representation. These theories (for a comprehensive review, see Roediger & McDermott, 1993) have been so successful that one wonders if it is worth talking about the role of the self in nonconscious influence. The answer is simple: There are cases of nonconscious influence that cannot be accounted for by presemantic representations and automatic, data-driven processes.

Consider Ansel Bourne, a case of psychogenic fugue studied by James (1890/1981). Bourne was an itinerant preacher in and around Greene, Rhode Island. He was upright and self-reliant, if given to occasional bouts of depression. In January 1887 he disappeared from Rhode Island and was declared missing by the police. Two months later he turned up in Norristown, Pennsylvania, where he had set up business as a shopkeeper selling stationery, candy, fruit, and sundries. There he was known by his neighbors as A. J. Brown, a taciturn and orderly individual, and a regular churchgoer. Brown made no reference to his previous life, much less his identity. The discovery of his dual existence occurred when A. J. Brown went to sleep one night and awakened the next morning as Ansel Bourne, unaware of where he was. He identified himself as Ansel Bourne, but had no memory of what he had been doing for the past 8 weeks, for 6 of which he had been living in Norristown. James was able to get this information by means of a hypnotic interview, but none of this material was accessible to him in his normal waking state: Just as Brown seemed unaware of his life as Bourne, so Bourne seemed unaware of his life as Brown. James (1890/1981, p. 371) wrote that "Mr. Bourne's skull to-day still covers two distinct personal selves."

A more dramatic variant on this situation occurs in cases of multiple personality disorder (e.g., Thigpen & Cleckley, 1954). Thigpen and Cleckley described Eve White, a 25-year-old housewife, demure and retiring but also industrious and devoted to her daughter. She had no particular history of psychological problems, and had been referred for psychiatric consultation for persistent headaches and blackouts. But during one treatment session an entirely different self-presentation occurred: Eve Black—childish, mischievous, carefree, and erotically playful. It turned out that the Eves White and Black had alternated control over the patient's behavior since childhood; the asymmetrical amnesia between the ego states—Eve Black knew all about Eve White, but Eve White knew nothing about Eve Black—made for some interesting episodes. Once, during childhood, Eve was caught playing with a particular neighbor's children, despite a specific injunction against doing so; nevertheless, the child steadfastly denied any wrongdoing. As an adult, Eve received by mail order a rather slinky evening dress, which she denied ordering. Both episodes, and many more, were apparently the work of Eve Black, outside the awareness of Eve White; though it was Eve White who faced the consequences.

The Three Faces of Eve

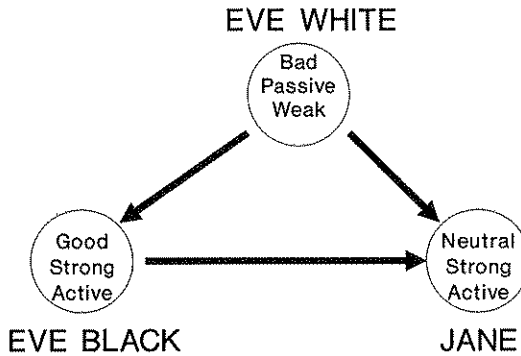


FIG. 24.2. Schematic depiction of relations among the three "faces" of Eve (Thigpen & Cleckley, 1954). Eve White is ignorant of both Eve Black and Jane; Eve Black knows about Eve White, but not about Jane; Jane knows about both Eve White and Eve Black.

The third personality, Jane, made her appearance later in the course of therapy. Jane had access to each personality's experiences since she herself began to emerge, but not to much material from their lives before treatment. The core personality characteristics of each alter ego, and the pattern of asymmetrical amnesia, are depicted in Fig. 24.2.

Here, to borrow James' phrase, there are three "personal selves" inside the same skull, alternating in control over conscious awareness, voluntary behavior, and communication with others. Fugue and multiple personality patients also show evidence of implicit memory (for reviews, see Kihlstrom & Schacter, 1995; Kihlstrom, Tataryn, & Hoyt, 1993; Schacter & Kihlstrom, 1989). So, for example, A. J. Brown once gave testimony in church that referred to an incident that had actually happened to Ansel Bourne. And a formal experiment by Nissen and her colleagues (Nissen, Ross, Willingham, Mackenzie, & Schacter, 1988) gave evidence of priming effects that were preserved across personalities, despite interpersonality amnesia affecting recall. These cases may be distinguished from other displays of implicit memory because, under some circumstances, implicit memory can become explicit. Thus, Eve Black can give a full account of those incidents that puzzled Eve White. So the problem is not exactly one of degraded encoding.

Genuine cases of fugue and multiple personality are admittedly rare, but something similar can be seen in large numbers of otherwise normal human subjects experiencing posthypnotic amnesia (Kihlstrom, 1985). In one ex-

periment (Kihlstrom, 1980), hypnotized subjects memorized a list of words, and then received a suggestion that upon awakening from hypnosis they would not remember the words they had learned until the amnesia suggestion was canceled. The resulting amnesia was very dense, as compared to the memory shown by control subjects who were not deeply hypnotized. On a later test, the subjects were asked to give the first words that came to mind in response to cues that targeted the list items as free associates. The non-amnesic subjects showed a substantial priming effect, but so did the amnesics. Another recall test showed that production of list items as free associates did not remind the amnesic subjects of the items they had memorized. Finally, after the amnesia suggestion was canceled, everybody remembered the list almost perfectly. This dissociation between explicit and implicit memory is quite different from the usual priming study, in a number of respects: Good encoding was insured by requiring the subjects to meet a criterion of two perfect repetitions of the list before the amnesia suggestion was given. And, adequate retention was demonstrated by the full recovery of memory after administration of the reversibility cue. Moreover, the priming observed here is true semantic priming, not repetition priming; because the cues were not presented in the study list, a semantic association between cue and target had to be formed by the subject at the time of encoding, and preserved in memory over the retention interval.

If conscious awareness (evidenced by explicit expressions of perception and memory) is mediated by links to the self, the puzzle is how an event representation can be linked to the self sometimes, but not at other times. James (1890/1981) understood this problem, and this chapter proposes to adopt his solution: Perhaps there is not just one mental representation of the self. Speaking of the phenomena of hysteria (as it was then known) and hypnosis, James wrote:

The buried feelings and thoughts proved now to exist in hysterical anaesthetics, in recipients of post-hypnotic suggestion, etc., themselves are parts of *secondary personal selves*. These selves . . . are cut off at ordinary times from communication with the regular and normal self of the individual; but still they form conscious unities, have continuous memories, speak, write, invent distinct names for themselves, or adopt names that are suggested; and, in short, are entirely worthy of that title of secondary personalities which is now commonly given them. According to M. Janet these secondary personalities . . . result from the splitting of what ought to be a single complete self into two parts, of which one lurks in the background whilst the other appears on the surface as the only self the man or woman has. (p. 222)

Considerations of the self as a concept suggest that each individual possesses a number of context-specific selves, arrayed as a set of exemplars or co-existing with a summary prototype (Kihlstrom & Cantor, 1984; Kihlstrom et al., 1988; Kihlstrom & Klein, 1994; Kihlstrom & Marchese, in press). Ordi-

narily, these contextual selves are linked to each other so that the person is aware of what he or she is like under different circumstances. In terms of associative-network models of memory (such as ACT), we may say that there are several different knowledge structures, each representing a different token of the self-concept. Working memory can hold one of these at a time. Newly activated knowledge structures, if they are represented in working memory at all, are linked to whatever token of the self is resident in working memory; and if the link to self is encoded in memory, it is in terms of that particular self and no others. Some of the self-tokens may be linked to each other, but, in general, only the self resident in working memory can report on phenomenal awareness; and the only memories accessible to conscious recollection are those that have been encoded with respect to that particular token of the self.

Similarly, in hypnosis, assume that the highly hypnotizable subject's deep level of involvement in the experience sets up something like a new, temporary self-concept to which the experiences of hypnosis are linked. When hypnosis is terminated with a suggestion for amnesia, this "hypnotic self" moves out of working memory and is replaced by the subject's "normal self"; and the link that would normally unite the two self-concepts is temporarily suppressed. This situation will result in an inability to remember the list items and the other experiences of hypnosis. But those items will remain active in declarative memory, and this residual activation will support priming effects and other forms of implicit memory. When the reversibility cue is given to cancel the amnesia, the link is restored, and with it access to the experiences of hypnosis.

UNCONSCIOUS, PRECONSCIOUS, SUBCONSCIOUS

This chapter has focused on the mechanisms associated with the division of consciousness in hypnosis and hysteria. James (1890/1981), Janet (1907), and Hilgard (1977) also shared the sense that these sorts of phenomena tell us something new about the nature of the psychological unconscious, and the relations between conscious and unconscious mental processes (Kihlstrom, 1987, 1990, 1993). These dissociative phenomena cannot be understood in the terms normally applied to unconscious and preconscious processing; they seem to demand some sort of reference to the self and its vicissitudes.

On the other hand, it seems that the link to the self is also implicated in unconscious and preconscious processing as well. In unconscious processing, procedural knowledge is executed without ever making contact with a mental representation of self. In preconscious processing, events have been so degraded that they, too, never enter working memory at the point of perception; although, in contrast to procedural knowledge, they could do so if conditions were different. Thus, they never achieve any links with the self in the first

place. Alternatively, events are processed in working memory, and make contact with the self at the time of perception, but the traces are so poorly encoded, or suffer such serious degradation over the retention interval, that the links to self originally forged at the time of perception are lost.

The scope of the psychological unconscious is very broad, and the manner in which mental structures and processes are rendered unconscious varies widely as well: proceduralization and knowledge compilation, degraded stimulation and poor encoding, and functional dissociation. But in terms of their phenomenology, all appear to share a lack of association to a mental representation of the self as the agent or patient, stimulus or experiencer, of events. In the end, this final common pathway appears to be what makes the difference between conscious and unconscious mental life.

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