

# Personality

## Contemporary Theory and Research

THIRD EDITION

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# The Psychological Unconscious

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## A BRIEF BACKGROUND

From the dawn of the Age of Reason, when 17th- and 18th-century figures like Voltaire and Benjamin Franklin argued against received truth and superstition, championing instead rational inquiry, people in Western civilization began to think of human nature as reasoned, lawful, and ultimately accessible to science. In some sense Europe seized on the notion that humans are the masters of their own destiny. Suddenly, after centuries, men and women were beginning to construe their thoughts and actions as *not* predetermined by celestial will and political potentate. They believed the key to our individual and collective destiny is our ability to reason things through for ourselves, consciously reflecting on all the factors, and then making a decision (a decision to be a republican or a democrat, to be a dentist or a construction worker, to go to war, to sue for peace). Of course this entire approach is predicated on the assumption that we indeed are conscious of (notice, remember, comprehend) all the reasons we might behave or feel one way or another. This assumption was broadly accepted by the founders of the Age of Reason. Clearly, invisible influences on human behavior were "out" and visible (knowable) forces were "in." It was immensely gratifying to believe that the decisions we make (spouse, vocation, favored music, parenthood), emotions we experience (sadness, elation, anger), and the motives we embrace (altruism, vengeance, generosity) are the logical consequences of factors that are accessible (conscious), understandable, and therefore controllable.

But as far back as the 18th-century philosopher Leibnitz and the 19th-century psychophysicist Helmholtz, the scientific community began to suspect that there might be a fly somewhere in this ointment of optimistic rationalism: Scientists began to suspect that we do not, and indeed cannot, notice, comprehend, and remember all the influential aspects of our experience, all the factors that influence, and determine, our thoughts, actions, and emotions. In a word they began to think about the "invisible" again, not devils, imps, and spirits this time, but things emerging from an annoyingly more abstract abode: the unconscious.

It is Freud who is usually given the credit for the elaboration of "the unconscious," and it follows that when people think of the unconscious they think of the *psychoanalytic unconscious* (Freud, 1900/1953). This is unnecessary on two counts: First, Freud was not the first, nor was he the only theorist postulating the influence of unconscious processes at the end of the 19th century (note Pierre Janet in France, and Morton Prince in America; see Ellenberger, 1970, for a thorough treatment of this topic). Second, contemporary advances in cognitive science have enabled us to define and empirically examine the possibility of unconscious influence in human experience without needing to address the elaborate, and sometimes quite speculative, metapsychological "baggage" that accompanies psychoanalysis. It is in fact the intention of this chapter to disengage the review of unconscious processes from psychoanalytic theory. I am broadly psychoanalytically oriented; and I am convinced that some (not all) of the operations of the unconscious do in fact conform to ideas formulated by contemporary psychoanalytic theory (Westen, 1998). Thus I in no way

wish to simply dismiss psychoanalytic formulations of how unconscious processes work. But it is certainly possible for us to examine *if* unconscious influences are important without assessing the merits of any particular theory about *how* they work, including that of psychoanalysis. Accordingly, in this chapter I defer on the question of *how*, so that we may focus on the more fundamental and still controversial question of *if*.

## ORGANIZING OUR IDEAS ABOUT THE UNCONSCIOUS

It is my intent to proceed with consideration of the unconscious in a very pragmatic fashion: sidestepping the sometimes tempting (but all-too-often entrapping) theoretical contentions of one school or another, employing instead what I believe is a pragmatic organizational approach to the problem. I will then sample the scientific literature to date, avoiding arcane jargon when possible. Finally, I will present a series of related studies on hypnotic age regression we carried out in our laboratory to show how a topic gets studied in this controversial area of personality functioning. First we have the task of defining the question, operationalizing our terms, and organizing our approach.

### The Question

Put simply: Are there important influences on human thought and action that are products of a psychological unconscious?

### Defining the Psychological Unconscious

For the purposes of this chapter I use a conventionally accepted definition derived from Kihlstrom (1987): The psychological unconscious refers to the idea that mental structures—cognitions, emotions, and motives—operating outside phenomenal awareness, can nevertheless influence ongoing experience, thought, and action.

### What We Are Not Talking About

First, it is patently true that a host of physiological processes operate outside of our awareness and have an important impact on our experience and behavior: for example, pupillary dilation, operation of the adrenal cortex, brain stem activity, broad sensory accommodation to external stimulation. This is not what we mean by *psychological unconscious*. Second, much of human maturation proceeds without our awareness, and is influential. Just as surely, we remember little or nothing about the first two years of our life yet those events are immensely formative. But these are biological and historical *events*, not mental structures. Our definition of the psychological unconscious requires a *mental structure* (e.g., a memory, perception, fantasy) that impacts the individual. Developmental or historical events themselves do not qualify. If, on the other

hand, it can be shown that the adult possesses an archaic, vestigial mental structure for being "2 years old" that operates outside of awareness (as postulated by Freud), then this does fall within our purview. Similarly, if an adult retains a memory for an incident when 2 years old, and this memory is influential and somehow resides outside of awareness, then (again) we must examine the evidence. But in both cases it is the influence of the contemporary mental structure, not the biological or historical event per se that is relevant to the concept of the psychological unconscious.

## A PRAGMATIC APPROACH TO THE QUESTION

One of the most articulate theorists/researchers on the topic of the unconscious is Kenneth Bowers. I have adapted and expanded upon Bowers's (1984) two-factor model of the unconscious to organize material presented in this chapter. Generally speaking, Bowers contends that there are two factors to consider when we examine the unconscious: attention and comprehension. I review "what kind of case can be made" for four types of unconscious influence:

### The Unconscious as the Unnoticed

Can a stimulus or experience be processed in such a way that it influences thoughts or actions, yet be unconscious by virtue of its being unnoticed?

*Example:* A subject cannot tell whether cards that are very briefly flashed are blank or have symbols. A few minutes later he is given a large group of symbols on one sheet (some of which had been flashed earlier and some of which had not been). He is asked to point-out which symbols are most aesthetically appealing. The subject unwittingly selects the ones that were flashed to him earlier. His choices were in fact influenced by the symbols which he had earlier perceived in some way, but not noticed. (Zajonc, 1980)

### The Unconscious as the Noticed, but Uncomprehended

Can a noticed stimulus or experience be processed in such a way that it influences thoughts or actions, yet be unconscious by virtue of its being unappreciated as influential?

*Example:* When asked to choose the highest quality nylon stocking from a choice of five pairs lined up in a row, mall shoppers had sometimes very strong convictions for their choice. Subjects all gave various reasons for their choice (softer, lighter, finer weave). What they did not know was that all five pairs were identical. The strongest determinant of choice was in fact position: People tended to choose the pair farthest to the right. When asked, they would acknowledge that the stocking they chose was indeed farthest to the right, but they always (and sometimes quite firmly) denied that position had anything to do with it. Clearly subject choice was influenced by position. Further, subjects did perceive and notice the position, but failed to appreciate its influence on them. (Nisbett & Wilson, 1977)

### The Unconscious as Retained, but Unavailable, Memory of Actual Event

Can a past event be coded or stored in memory in such a way that it influences thought and action, yet for an extended time remains unavailable to conscious awareness?

*Example:* A 10-year-old boy is sexually molested by a group of older boys. As an adult psychotherapy patient he has no memory of this incident. Nevertheless, he sometimes dreams of scenes suggestive of such an event and has some sexual difficulties. Eventually he begins to remember more detail, and confirms from others that the molestation did indeed occur. Thus we can say (1) the abuse was not recalled for a time; (2) it nevertheless influenced thought and emotion (dreams, sexual difficulties); and (3) a reasonably accurate memory eventually emerged (confirming the presence of a mental structure. (Nash, 1994)

### The Unconscious as Personal Fiction That "Feels Like" Memory of Actual Event

Can noticed stimuli and experiences be encoded and stored in such a way that they elicit "memories" of events that in fact never occurred; and the source of the false memory is unappreciated?

*Example:* An adult research subject begins to remember in great detail that once, as a small child, he was frightened and lost in a shopping mall. This was not true at all and was in fact a product of a subtle collaboration and interview technique involving the experimenter and a sibling. Though the subject certainly perceived and noticed the discussions with the experimenter and sibling, he was unwittingly influenced by the procedure in such a way that he first came to believe and then broadly elaborated upon an event that never happened. (Loftus, 1993)

## THE UNCONSCIOUS AS THE UNNOTICED

Can we be exposed to information in the environment that we do not notice (consciously attend) but that has an important impact upon our behavior, feelings, and thoughts? The answer championed by the 17th- and 18th-century scions of rationality and reason is clearly "no." Indeed, some contemporary psychologists contend that stimuli cannot be processed for meaning unless they have been consciously attended to (Ericsson & Simon, 1984). But many cognitive scientists now view conscious awareness as something that happens quite late in the perception-processing-response sequence (Bowers, 1984; Ceci, Loftus, Leichtman, & Bruck, 1994; Greenwald, Draine, & Abrams, 1996; Merikle, Smilek, & Eastwood, 2001; Neisser & Harsch, 1992; Schacter, 1995). In other words, perception is not the same thing as noticing. "Perception" involves the initial registration and processing of information; "noticing" involves actually being aware of the perceived information. Noticing can (but does not always) happen after perceiving. In fact, many theorists contend that consciousness of a stimulus (noticing something) happens well after perception, and that a person can be influenced by a stimulus even though it is never noticed at all (consciously represented). In some

ways this idea seems counterintuitive. Can we really be influenced by something we do not even notice? Why on earth would theorists come to believe such a thing? Because I cannot do justice to the immense store of evidence on this topic, I will limit myself to describing some interesting research traditions that speak to the question of perceiving without noticing.

### **"Blind Sight": Organic and Histrionic**

What would happen if you were to place a blind patient (due to brain damage) in a chair, and present a series of 30 cards, one at a time, on a table in front of her? On 15 cards is a triangle; on the other 15 is a circle. You present to the blind patient each card (one at a time), and ask her to "look" at it carefully. You ask her whether the card has a triangle on it, or a circle. Well first, you note that the patient states emphatically: "Don't you understand, I'm blind. I can't SEE the cards." But you gently ask her to go ahead and just give you the best guess she can. If someone were securely blindfolded and administered this test, you would expect to get a 50% hit rate by chance (50% of the cards correctly identified). So how would you expect this blind patient to do: Would you expect a chance hit rate of 50%, or something else?

Well, under some circumstances, with a specific type of brain damage in Area 17 of the visual cortex, we find that blind patients perform well above chance on such discrimination tasks, even though they report that they saw (noticed) absolutely nothing at all (Weiskrantz, Warrington, Sanders, & Marshall, 1974; Wust, Kasten, & Sabel, 2002). But because of the brain damage and the above-chance response rate, we can be certain of three things: (1) These patients are blind in every sense of the word. They do not "notice" any visual cue; (2) nevertheless, somehow the information from the cards (triangle or circle) is processed (perceived); (3) even though the information is not noticed, it affects behavior (successful discrimination). We can infer from this that one part of the brain might be dedicated to registration of visual information and another devoted to awareness of visual information. With the above patients, it may be the "higher" cortical function of awareness that is compromised (therefore they are blind). But registration of the stimulus itself proceeds unimpeded because this part of the process is governed by lower visual brain centers. The take-home message here is that perceiving and noticing may be different *structurally*. That is, they take place in different parts of the brain.

But there is an interesting variant of "blind sight" that is more subtle, functional, and complex. This involves hysterical blindness or psychogenic blindness. Here there is no detectable brain damage or neural lesions associated with the blindness. Rather, there typically is a history of trauma and emotional difficulties that seem to express themselves in an inability to see. These gross types of conversion disorders are rare but not unheard of in contemporary psychiatry (Wynick, Hobson, & Jones, 1997). When these hysterically blind patients are exposed to the types of discrimination tasks described above, they also typically score at nonchance levels. But the direction of the nonchance responding seems dependent on what the experimenter communicated to the patient about

the procedures (Sackeim, Nordlie, & Gur, 1979). If the experimenter simply indulgently expressed a wish for the patient to "just do the best you can," hysterically blind patients often performed at above-chance levels on these discrimination tasks, even though they report not seeing anything. If, on the other hand, the patient was sternly told that the experimenter suspected that the patient was able to see, and that the procedure was a kind of lie detector test, the patient typically performed significantly BELOW chance levels (e.g., got significantly fewer "hits" than would be expected by chance), even though he or she reported not seeing anything. Similar results are obtained with normal subjects who are given suggestions for hypnotic blindness.

Whether hysterically blind patients or hypnotically blind subjects score above or below chance, it is clear that the information is being processed, albeit outside of awareness. Again, as was the case with organically blind individuals (visual cortex area 17), psychogenically blind individuals process and respond to the social demands of the situation, even though they report no visual stimulation whatsoever.

### Preferring Things That We Never Noticed

For almost 30 years it has been well documented that "familiarity does *not* breed contempt," at least within the cloistered confines of the psychological laboratory (Zajonc, 1980). When people are exposed to a host of novel stimuli (music, drawings, photographs, nonsense words, flavors), they will later prefer those previously experienced stimuli over other completely novel stimuli. In general, we prefer music that we've heard before, drawings that we have seen before, flavors we have tasted before, and even nonsense words we have encountered before. In short, all things being equal we prefer what we know (Peretz, Gaudreau, & Bonnell, 1998). This seems to be the way it works with nonhuman animals as well (e.g., Brown, 2002; Seppa, Laurila, Peuhkuri, Piironen, & Lower, 2001). But all the human research was carried out with the initial exposure long enough (say, 10 seconds) that the stimuli were fully noticed by the subject. That is, the stimuli (the music, the words, the drawings) were presented to the subject in a manner that insured they would be perceived, noticed, and remembered.

What would happen if the kinds of visual stimuli used in the above research (nonsense words, drawings, photographs) were instead presented in short 1 millisecond bursts, so as to render the stimuli undetectable to the subject? That way the subject would have no idea what, if any, stimulus was presented. The exposure would simply be experienced as a flash of light, with no content. Would we still get the same subjects later picking (preferring) these stimuli from a larger list, even though they in no way recognized them as familiar? The answer is "Yes" (Zajonc, 1980). People prefer nonsense words, drawings, and photos they were briefly exposed to but could not possibly have noticed, experienced, or remembered. Here again, a large body of studies leads us to believe that information that is not noticed can nonetheless affect how we subsequently think, feel, and act. Indeed there is good reason to believe that humans may be even more emotionally responsive to material



presented suboptimally (that they are less conscious of) than they are to material presented optimally (Murphy & Zajonc, 1993; Rotteveel, de-Groot, Geutkens, & Phaf, 2001).

### Responding Emotionally to Something Unnoticed

A research tradition stemming originally from psychoanalytic theory also has important implications for our discussion of the unconscious as the unnoticed. Lloyd Silverman and his colleagues at New York University (Silverman, 1976) proposed that when certain pre-potently emotional and positive messages are presented to subjects or patients subliminally (i.e., in extremely brief visual flashes of approximately 4 milliseconds, which subjects report they cannot detect), these messages "bypass" the ego's defenses and produce emotional reactions that are usually quite positive and facilitative of adaptive behavior (see Hardaway, 1990, for a thorough review of this work; also see Weinberger, Kellner, & McClelland, 1997; but see also Fudin, 2001). The phrase typically flashed is "*Mommy and I are one.*" A control group is usually exposed to the neutral phrase: "*People are walking.*" The idea here is that the "*Mommy and I are one*" message may trigger associations to archaic and powerful representations of reunion and succor that are hardwired in the human species.

What is particularly impressive about this methodology is that it is double blind: Neither the researcher nor the subject is aware of the stimulus that is being used on any specific occasion. These procedures have been used with clinical and nonclinical groups, with samples including undergraduates, schizophrenics, depressives, alcoholics, phobics, and eating disordered individuals. While the results have been by no means consistent, and the debate continues to be heated, a meta-analysis of 64 methodologically sound studies (Hardaway, 1990) revealed that there is a small, but significant effect of subliminal exposure such that the "*Mommy and I are one*" groups demonstrate behaviors and attitudes consistent with a positive emotional state. Further, there is some "softer" evidence that the effect of this message is greatly *lessened* if it is presented for a long-enough period of time (e.g., 10 seconds) that the subject both perceives and notices what the message actually is. Apparently noticing the message actually reduces its influence.

The idea that perceived, but unnoticed, information can affect mental function is now not so hotly contested. The general acceptance of the importance of preconsciously processed information (information that is registered without reaching awareness) can be traced to how cognitive scientists have conducted research over the past 20 years: First they successfully disengaged the concept of a cognitive unconscious from some of its more arcane Freudian connections (Bowers, 1984). They did this by proceeding in a more inductive fashion, research observation by research observation, rather than by proceeding deductively by explicitly testing Freud's hypotheses. Second, cognitive scientists conducted careful, sometimes brilliant, programmatic research that netted a great deal of respect within the general scientific community (see, for instance, John Kilhstrom's [1987] review article "The Cognitive Unconscious," published in the influential journal *Science*).

## THE UNCONSCIOUS AS THE NOTICED, BUT UNCOMPREHENDED

Up to this point we have sampled some evidence suggesting that we can indeed be influenced by stimuli that we cannot, or do not, notice. But simply equating the unconscious with what is “unnoticed but influential” is logically over-restrictive. There is the possibility that we might selectively attend to an event (notice it), be powerfully influenced by it, yet remain oblivious to its effect on our thoughts, attitudes, feelings, and actions. Even if we notice it, if we do not *comprehend* the effect of a stimulus feature or event, we have been unconsciously influenced by it.

Nisbett and Wilson (1977) presented a comprehensive, empirically based argument that humans simply have little or no direct access to their own higher-order cognitive processes. That is, people know what they do, what they feel, and what they think, but they do not really know why or how they “got there.” Surely people offer articulate, believed-in explanations for almost everything: why they feel attracted to a lover, why they hired a certain individual, how they solved a problem, or why they behaved in one way or another. But Nisbett and Wilson argue that these explanations are almost always off the mark. Typically people fail to notice what is in fact influential.

Nisbett and Wilson (1977) begin with a description of a fascinating study on insight. Maier (1931) hung two cords from his laboratory ceiling. The room was a jumble of tools, clamps, and poles. The subject was asked to solve a problem: He or she must find a way to tie the two cords together. The problem was that the cords were placed far enough apart that the subject could not hold on to one cord and reach the other without letting go the first cord. While the subject puzzled over the task, Maier wandered around the room aimlessly for several minutes. There were three ways to solve the problem, but Maier was interested in one particular solution: The subject could tie pliers to one cord and begin to swing it widely; meanwhile he or she could run to the second cord bringing it as close as possible to the first (swinging) cord; then he or she could catch the swinging first cord and tie the two together. About 40% of the subjects eventually solved the problem within 10 minutes. But for those who did not, Maier casually, but cunningly wandered over to one of the cords, “happening” to set the cord in motion. He found that within 45 seconds the subject invariably solved the problem. Yet when these subjects were later asked how they arrived at the solution, most offered no reference to the clue: “It just dawned on me”; “It was the only thing left,” and so on. Further probing by Maier after free recall was relatively futile: Subjects apparently had no recognition or appreciation that the clue helped them solve the problem.

There is much of the anecdote in Maier’s report. But as Nisbett and Wilson (1977) point out, the research literature is replete with subjects who are influenced by events and stimulus features they notice but do not appreciate as relevant to their response. Earlier in this chapter I briefly described the nylon stocking experiment (Nisbett & Wilson, 1977) in which subjects were powerfully influenced by the position of the stockings (farthest to the right), yet remained adamant that this played no role in their decision as to which stocking was of highest quality. But there are many more such studies across a broad

range of social influence factors illustrating that we are unaware of much of what goes on in our minds. Or as Pascal put it: The heart has reasons which reason does not know. For instance:

1. French students rate capital W, the least common letter in French, as their least favorite. These subjects dismiss the idea that it is lack of familiarity that causes disliking (Nuttin, 1987).
2. We prefer mirror image pictures of ourselves over real-image pictures of ourselves apparently because that is what we most often see when we gaze into the mirror (Mita, Dermer, & Knight, 1977).
3. Even when we systematically chart our moods along with daily events we have little or no insight into what situations were actually related to our moods (Stone, Hedges, Neale, & Satin, 1985).
4. Subjects who were about to be exposed to increasing levels of electrical shock were first given a placebo pill and told that it causes heart palpitations and breathing irregularities (some usual effects of being shocked). These subjects endured four times more electric shock than control subjects who were not given such a placebo, presumably because they could blame the symptoms on the pill and not the shock. Yet when questioned about why they endured so much more shock than average, they did not mention the pill at all. When directly informed of the study's results, the subjects politely assured the researchers that while this might be true for some subjects, it was not true for them (Nisbett & Wilson, 1977).
5. People are less likely to help a distressed person as the number of witnesses or bystanders increases (Latané & Darley, 1970). Yet when subjects in these experiments are explicitly asked whether they believe that the number of bystanders influenced their behavior, they uniformly deny this possibility.

Although his comment seems to violate the cherished, commonsense idea about our capacity for self-knowledge, Winston Churchill was quite probably right when he surmised that man will occasionally stumble over the truth, but most of the time he will pick himself up and continue on. Though we often mumble quite impressive explanations as to how we came to be on the ground, and why we got up, the fact is that we may have little special knowledge of either. Readers may want to try the exercise in Activity Box 8.1. The activity illustrates how someone may cause an event but not understand how their actions make it occur.

### **THE UNCONSCIOUS AS RETAINED, BUT UNAVAILABLE, MEMORY OF ACTUAL EVENT**

So far we have examined the evidence for the unconscious as unnoticed, and the unconscious as the noticed, but not appreciated. Now we consider the unconscious as something akin to "the repressed." First, let me be clear about what we are *not* addressing in this section. We are *not* asking: Can an *event* (an early trauma, a neglectful or loving early environment) be influential even though it is not remembered? The answer to this question is an unimpeachable "of course." For instance, it is almost certain that the first three years of our

**Activity Box 8.1****Chevreul's Pendulum**

On an 8 1/2 by 11 inch paper draw the largest circle you can (say, 4" radius). Draw two perpendicular straight lines through the center of the circle. Now you have a circle with four equal parts. Next have some kind of pendulum by your side. It could be something as simple as a string tied to a small, but heavy metal bolt, a watch bob with a long chain, or a crystal pendant of some kind. The string or chain should be 15 to 18 inches long. Have a friend sit in a chair beside you. Place in her lap the paper with one of the axes pointed directly at her belly button. The other axis will of course be perpendicular. Now, have your friend hold the pendulum in front of her so the heavy end of the pendulum is just an inch or so above the center of the circle. Next, you set the pendulum swinging on the vertical axis (the axis that points toward the subject). Right after you do this, instruct the subject in the following way:

Now I would like you to concentrate really hard on the idea that this pendulum will begin to swing along the other axis (sideways). Think really really hard about this. Keep your eyes focused on the end of the pendulum and concentrate on the pendulum swinging sideways . . . swinging sideways, concentrate really hard on it swinging sideways.

In a few moments what you will almost inevitably find is that the pendulum does in fact begin to swing sideways to some extent. Your friend will note this, but will probably be completely unaware of the reason for it.

What is the reason? Is the "mental energy" of your friend's thoughts forcing the pendulum to swing sideways? Well, in a way, yes. The physical properties of the pendulum are such that it exaggerates the very very small muscle movements which your friend is making without knowing it. The visual result (a sideways swing) is much more noticeable than the tiny movements that produce them. Your friend is actually causing the sideways swing by making these little muscle movements in her fingers and hand. But she does not know it. Typically it is difficult to convince the subject that she is indeed physically making the pendulum swing sideways, or that she is making any tiny movements at all.

This phenomenon is called the Chevreul's Pendulum Illusion and has been studied extensively (e.g., Easton & Shor, 1976). Almost everyone experiences it, unless he or she is consciously trying to oppose it. As such, it is not considered to be a hypnotic phenomenon. Thus the subject is aware of your directions to think of the pendulum swinging sideways, but is not aware of how the sideways swinging happens.

lives are immensely formative; yet, as adults, we remember almost nothing of them. It is a bitter pill to swallow, but it is probably true that because of how the brain functions and matures, no adult memory exists for most of the really influential early events (before age 2 or 3) that shaped who we are as people; and some of the adult memories we do have about our childhood may be quite trivial (Howe & Courage, 1993, 1997; Simcock, & Hayne, 2002)

**Notes on the Nature of Memory**

Instead, what we are asking is: Can a memory be stored and influential, yet unnoticed (not retrievable)? Before we throw ourselves into this question, we need to be aware of two misconceptions about memory that can obstruct our

understanding of unconscious processes. First, memory is not immaculate. Everything that happens to us is not literally "stored somewhere" in the brain as it happened, as though our brain was some type of carbon-based videotape or compact disk. Our memory does not work like a soap opera flashback. What occurs to us over the years is imperfectly encoded and stored in a fashion that conforms to our ways of seeing the world and ourselves (Schacter, 1995). As these ways of seeing the world change for one reason or another (e.g., maturation, psychotherapy, brainwashing, new information, religious conversion, being a parent, loss of a loved one), the memories change.

Second, memory is not one "thing." Though much of the time we experience memory as a unitary process, we are fairly sure now that there are different kinds of memory that are "housed" or processed in different parts of the brain. For our purposes the distinction between explicit and implicit memory is exceedingly important and is discussed below. But we must be mindful that even though it seems like a cakewalk for us in our day-to-day lives, the process of memory is complex and multiphasic (not unitary). I will now very briefly describe two ways in which memories might be nonconscious but still have obvious effects on behavior.

### When We Implicitly "Know," but Explicitly "Don't Know"

People suffering from a neurological condition, Korsakoff's syndrome, which is often associated with chronic alcoholism, have a peculiar pattern of memory dysfunction: That is, when asked what they were doing just a few moments ago, they will have no idea whatsoever. They have no ability to recall any episode that has happened to them no matter how recent (Kihlstrom, 1987). In other words they have no explicit memory for any episodes or events that happen to them. Nevertheless, they are perfectly capable of learning new factual information, motor skills, and vocabulary skills. If a Korsakoff patient walks over to the office calendar to find out the date of the office picnic, when she returns to her own office she will have no memory whatsoever of having walked to the office calendar (no explicit memory for the event). Yet if asked when the office picnic is, she knows (displays implicit memory). When asked how she knows, she draws a blank. This is sometimes called source amnesia. She does not know how or where she acquired the information. Clearly this is an example of some type of memory trace being influential, even though there is no appreciation for how the information was acquired.

The distinction between explicit and implicit memory has been demonstrated with nonpatients as well. For instance, dichotic listening is a procedure in which a subject is given two different messages, one in each ear, and is instructed to attend to and "shadow" only one. When, for instance, subjects listen to and immediately repeat word-for-word a speech heard over one side of their headset, it has been shown that they never remember different information presented on the other side of the headset. Subjects seem "too busy" shadowing the speech to attend to the other headset speaker (Bryden & MacRae, 1989; MacKay, 1973; Voyer & Flight, 2000). However, even though the subjects do not explicitly remember the information on the unattended side (sub-

jects cannot remember what words were presented), the information has an effect on how these same subjects interpreted words and sentences presented to them later (implicit memory).

In sum, memory is not just a unitary, single-stage process. Explicit memory and implicit memory are distinct, and it appears that we can have access to the latter without access to the former. Our moods, thoughts, and actions may be influenced by new information we have no memory of acquiring. At these times, we may find ourselves acting upon, knowing, or thinking about information we cannot remember encountering.

### Repression as Freud Would Have It

Thus far we have illustrated how memory of an event can be stored in such a way that it is inaccessible (no explicit memory), but influential (implicit memory). When this occurs, the context in which the information was learned, the actual initial encounter with the information, is not retrievable ever. In these cases implicit never becomes explicit. Psychoanalytic concepts of the unconscious go much further than this: Psychoanalytic theory contends that memories that are fully encoded, stored, and influential can nonetheless be held outside of awareness *and that under certain circumstances these memories are fully retrievable*.

The quintessential illustration of repression is still posthypnotic amnesia. In fact, it was by observing hypnotic patients in a 19th-century French medical facility that eventually led Freud to hypothesize the concept of repression. Consider this typical experimental scenario: A very good hypnotic subject is hypnotized and given a number of suggestions to which he responds splendidly. Sometime during the procedure he is told (correctly) that Bob Hope's father was a fireman. Near the end of the procedure the experimenter suggests that after hypnosis is terminated the subject will be wide awake, but will remember *nothing* of what happened during hypnosis until the experimenter gives him a signal. Further, the subject is told that after hypnosis is over, whenever the experimenter says the word "three" the subject will switch chairs, but not know why. Hypnosis is then terminated and the subject is asked what happened: He can remember nothing. He is offered money to remember anything about what happened during hypnosis—still nothing. The experimenter casually says "three" during the interaction . . . the subject gets up and moves to another chair. When asked why, the subject says, "I don't really know." When pressed, he says: "Well, it just looked more comfortable." He is asked several obscure questions, one of which is about the occupation of Bob Hope's father. He says "fireman." He does not know where that knowledge comes from. Then, with a pre-arranged signal, the experimenter lifts the amnesia and asks, "Now what do you remember about the hypnosis." The subject gives a full accounting of all the suggestions including the posthypnotic suggestion for switching chairs.

This is the type of demonstration that impressed Freud so much. And it is the type of scenario that has been examined in many research studies (for a review, see Pettinati, 1988; also see Barnier, 2002). Now on the surface of it, this example looks like another case of source amnesia: The subject initially does

not remember how or when he acquired the signal to switch chairs or the occupation of Bob Hope's father, but he both performs and answers correctly. But there is an exceedingly important difference here: The amnesia is reversible. Unlike Korsakoff patients who never remember what they have forgotten, unlike the dichotic listening subjects who simply have no way of accessing what they heard in the unattended ear, our hypnotic subject remembered everything quite clearly once the suggestion to remember was given. This is important because it documents that a fully intact (implicit and explicit) memory of the events during hypnosis was present, yet inaccessible immediately after hypnosis.

This is the prototype that Freud applied to his concept of repression. In fact, as Kihlstrom (in press) points out: "Posthypnotic amnesia is the only memory disorder studied under laboratory conditions where implicit memories can be restored to explicit recollection." For Freud, the person outside hypnosis is motivated to repress a certain memory not because of an outside influence (the hypnotist's suggestion in hypnosis), but because the memory is somehow horribly threatening. For Freud, repression was a type of motivated forgetting, but a forgetting that could be undone.

Other than in the hypnosis laboratory, what is the research evidence that this particular type of repression occurs? The answer is that the scientific community is nowhere near agreement. Two influential articles reviewed nearly the same research literature and came to astonishingly opposite conclusions on whether repression exists or not (Erdelyi, 1985; Holmes, 1990). The atmosphere is so thick with controversy that even the following anemic synthesis I offer here would probably draw withering fire from both camps:

Under certain circumstances, events that might otherwise be accurately represented in memory may nonetheless fail to reach awareness because they are associated with feelings of threat or fear. These events might later be remembered in weakened form. But, there is precious little evidence for the idea that people can experience a complete, decades-long amnesia for some particular event (e.g., childhood sexual trauma), then later in life suddenly remember it in exquisite and accurate detail.

I feel this to be a reasonable, but admittedly "middle of the road" position. It is flanked by two admirably well-entrenched camps: people who feel repression simply never happens (see Loftus, 1993) and people who feel that it is ubiquitous (Herman, 1992).

## **THE UNCONSCIOUS AS PERSONAL FICTION THAT "FEELS LIKE" MEMORY OF ACTUAL EVENT**

### **The Fallibility of Memory**

Can noticed stimuli and experiences be encoded and stored in such a way that they elicit "memories" of events that in fact never occurred; and the interpersonal/social factors that create these memory errors are unappreciated by the subject? If cultural and psychological factors can create the need to forget (repress) memories of events that occurred, why then can these same factors not operate in such a way as to create memories of events that never happened?

The conceptual sword surely cuts both ways. Consider this actual case from Garry and Loftus (1994, pp. 363–364):

A woman and her daughter were bound, raped, and sodomized at gun point in their home. The next day the woman's boyfriend insisted that the rapist must be somebody she knew. "You've seen him in the neighborhood, you've seen him somewhere before . . . at the grocery store, or at church. . . at a party somewhere . . ." Suddenly at the word "party" the woman "saw" the face of a man Clarence Von Williams (the husband of a co-worker). In short, though there was no corroborating evidence, Mr. Von Williams was convicted of aggravated rape and sentenced to 50 years in prison. Two months later a 32-year-old man was arrested and confessed to 70 crimes in seven states, one of which was the Von Williams case. Mr. Von Williams was immediately released. When the woman viewed the taped confession, she refused to believe it, insisting that Von Williams was the rapist, even though the videotaped confessions disclosed details that only the rapist could have known. The woman remained unimpressed.

Similarly, consider the media attention devoted to satanic ritual abuse, UFO abductions, and past life regressions. People who report these types of phenomena are for the most part well-intentioned people who genuinely believe they have undergone these experiences. Ganaway (1991) reports that up to 50% of hospitalized patients with multiple personality disorder (people who experience themselves as having more than one personality) report satanic ritualistic abuse involving heinous, even cannibalistic crimes carried out by an organized network of secret covens. These fantastic accounts, although compellingly rendered, have never been confirmed by law enforcement authorities. Much of the same can be said for UFO abduction stories (Newman, 1997) and reports of having lived a past-life (Spanos, Burgess, & Burgess, 1994). What is fascinating about all these stories is that they are by and large not hoaxes but are intensely believed-in fantasies that people experience as vivid memory.

How on earth can people be so absolutely certain they have experienced something when indeed they have not? First, it is wrapped up in the nature of memory itself. Memory is not emblazoned on the brain at the time of the event, never to be changed. Rather, memory is constantly shifting, changing, and expanding according to new information. Second, there is the problem of source amnesia. Under certain situations humans may have little ability to distinguish the actual episode (explicit context) in which they acquired the "memory": Was it an actual event? Was it a daydream? Was it a bit of misinformation embedded in a question asked by the investigator? Was it a wish?

A fine theory you say, but can it be demonstrated in the laboratory. The answer is yes. A growing number of studies appear to document that false memories can, and do, occur under laboratory and field conditions (Loftus, 1994, 1997).

### Embedding Inaccurate Information in Memories

It is patently clear now that an eyewitness's memory can be changed via subtle misinformation embedded in the investigator's questioning. Subjects who were asked how fast the cars were going when they "smashed into each



other" reported more broken glass at the scene than those asked the same question using the words "hit" or "collide." There was no glass in actuality. If the investigator asks a question about the speed of the car as it passed a fictional barn, subjects later confidently report having seen a barn (Garry & Loftus, 1994).

### Creating Complete Memories for Events That Never Happened

From the laboratory we have Loftus and Pickrell's (1995) report of experimentally implanting memories of childhood trauma that in fact never occurred. Loftus asked several subjects to write down daily what they could remember of four incidents that purportedly happened in their childhood; three of the events actually did happen, and one false event was supplied by a family member. Each day the subjects wrote what they could remember. If they could remember nothing, they were instructed to report this. In all cases the false memory was of being lost in a shopping center at a very young age, then finally being rescued. Subjects ranging in age from 8 to 42 years of age came to believe quite adamantly that the false memory was true, supplying sometimes vivid detail as to the smells, colors, and emotions of the event.

Ceci, Loftus, Leichtman, and Bruck (1994) found that by asking leading questions it was possible to mislead preschoolers into believing they had experienced things that in fact never happened.

In summing up this sampler of research on the unconscious I would like to share a quote by Kenneth Bowers: "Our days of labor and expectant waiting are occasionally interrupted by our reveries, our contemplations, and our dreams, and it is perhaps the surfacing of this unconscious, night side of thinking that permits some of our best ideas to see the light of day" (Bowers, 1984, p. 264).

### SUMMARY OF UNCONSCIOUS INFLUENCE

While many questions about the unconscious await answer, we now do know more about how we are affected by events outside our awareness:

*We are unconsciously influenced by the unnoticed.* We somehow are influenced by events we perceive, but do not (or cannot) notice.

*We are unconsciously influenced by the noticed, but unappreciated.* We may notice events that indeed affect us, but sometimes we utterly fail to comprehend that they are having a powerful effect on us.

*We are unconsciously influenced by "irretrievable" memories.* We sometimes can operate on the basis of information that seems to be stored in our brain, but we can see no explicit connection to how or when it was learned.

*We can unwittingly come to "believe our own propaganda" about the past.* Our memories are not written in stone but instead are quite malleable. We can be unwittingly influenced so that memories change or are entirely fabricated via suggestion, fancy, imagination, and wish. We have little or no capacity to know whether this has happened, or to "correct" it when it has.

children do; they respond to a host of projective and objective personality tests like children; and they write and spell like children. Unfortunately, most of this literature is methodologically flawed (Nash, 1987). When we critically examine only the methodologically sound studies we generally find the behavior of age regressed adults is not really similar to that of actual children. And on the rare occasion when it is, motivated, nonhypnotized subjects can do just as well. Generally the performance of hypnotically age regressed subjects is no more genuine than that of any adult trying to "act" childlike. Nor does memory for details of the past seem any sharper.

But we were nonetheless impressed with two aspects of hypnotic age regression: its marked emotional intensity, and its helpfulness with patients in psychotherapy. It occurred to us that we might still rescue the "genuine regression" idea. We noted that almost all the previous research was carried out in the emotionally sterile confines of a laboratory. Could it be that the flesh and blood of hypnotic age regression might express itself most clearly under conditions of heightened emotion? If extremely emotional material (more typical of actual clinical situations) were meaningfully presented to hypnotically age regressed subjects, they might display a more complete reinstatement of childlike emotional processes than would nonhypnotized control subjects. Thus, we embarked on a psychoanalytically informed empirical test of this idea. It was to lead us places we did not intend to go.

### Study 1: Operationalizing Our Ideas and Testing Them

Our initial, and most important, decision was how to define a childlike emotional response: We had to pick something fairly subtle so that adult controls might be fooled (Nash, Johnson, & Tipton, 1979). We settled on the concept of the transitional object as delineated by D. W. Winnicott (1953). In short, infants of both sexes become attached to some external plaything—for example, a teddy bear, blanket, furry animal, soft or hard toy. The first "not me" possession is transitional in two ways: First, the teddy bear or blanket is symbolic, representing the love and security of the mother. Second, the transitional object involves a mix of primitive ways of relating to the self and others such that it pulls for profound affect (typically 3-year-olds love their object fiercely). What makes this psychoanalytic construct of the transitional object so useful is that it has been studied empirically. We actually know something about how real children use these objects. So we know that 59% of children in Western cultures have these objects. Further we know (Gaddini & Gaddini, 1970; Rudhe & Ekecrantz, 1974) the following characteristics of transitional objects for 3-year-olds:

1. *Spontaneously desired.* They become absolutely necessary at bedtime or at times of loneliness, depression, or threat. Sixty percent of children have a transitional object, and they are spontaneously requested at times of stress.
2. *Specific.* Seventy-eight percent of small children who have a transitional object display rigid and vigorous adherence to one, and only one, such object. They will accept no substitutes.

3. *Emotionally intense.* The transitional object is affectionately cuddled as well as excitedly loved, sometimes until quite tattered.

Our idea for a research project began to take form. What would happen if we screened for, and selected, outstandingly responsive hypnotic subjects and exposed each subject individually to the following procedure: hypnotize and hypnotically age regress subjects to the age of 3? The wording of the hypnotic age regression suggestion would be this:

In a moment I am going to count backward from (your present age) to 3. As I do, you will go backward in time. When I reach the count of "three" you will be 3 years old. You will continue to hear me and do what I tell you to do, but you will otherwise be and feel as you did when you were 3 years old. You will be 3 years old. But no matter what you experience you will continue to hear my voice even if you do not recognize me. . . . [As the experimenter counts back he intersperses the numbers with comments.] You are getting smaller and smaller, younger and younger, once more a little boy/girl.

We would then suggest that Mommy was out of sight and further suggest fear of being alone; and then ask open questions: "What is happening? What else is happening? What are you touching?" Would the subject *spontaneously* mention or request a transitional object? Would the object be *specific*, or would more than one object be requested? Would independent judges rate the response to be emotionally intense? If adult hypnotic subjects really responded to these situations like actual 3-year-olds, 59% of them should display a transitional object spontaneously, about 78% of these objects should be specific, and the response to the object should be quite emotional.

But the informed skeptic might well say: "Even if you get the results you think you will, with hypnotized subjects acting like children, that does not necessarily mean that the hypnotized subjects did anything special. After all, there is no need to theorize about the unconscious if normal un hypnotized people can guess what the experimenter wants and successfully mimic 3-year-old behavior relying only on their own conscious understanding of how children behave at that age." This is a very good point. Thus is born the control group, or more precisely, the quasi-control group.

For our study we chose a design that would enable us to assess the possibility that the childlike behavior of our hypnotic subjects had little to do with hypnosis and everything to do with an attempt to please the experimenter and conform to the role of a good hypnotic subject. Our control group consisted of special subjects (simulators) whom we had earlier found to be unable to enter hypnosis in any substantial way. Just before the experimental situation the project director told all these subjects that in a few minutes they would be working with a hypnotist. Each subject was to FAKE being a good hypnotic subject. No coaching was given. The simulating subjects were told that success was related to intelligent use of situational cues. And they were told that the hypnotist did not know who were real hypnotic subjects and who were faking, but if the experimenter detected someone faking, he would stop the experiment immediately. It was in fact true that the experimenter/hypnotist did not know who was real and who was faking (it is essentially impossible for even the most experienced

hypnotists to tell the difference anyway). But it was *not* true that the experimenter would stop the procedure. Subjects were then led to the experimental room and were treated precisely as were the real hypnotic subjects.

There is a two-step logic to this design: First, if meaningful hypnotic age regression involves a reinstatement of genuinely childlike affective processes, then the behavior of real hypnotic subjects should closely correspond to that of actual children (their transitional objects should be spontaneous, specific, and emotionally intense). Second, before we can confidently attribute any childlike response of our hypnotic subjects to a reinstatement of unconscious modes of relating, we must eliminate the possibility that these responses could be the product of conscious role-playing. We can be reasonably sure that play acting is not a major factor if the simulators do a miserable job mimicking the behavior of the real hypnotized subjects (and by extension, that of children).

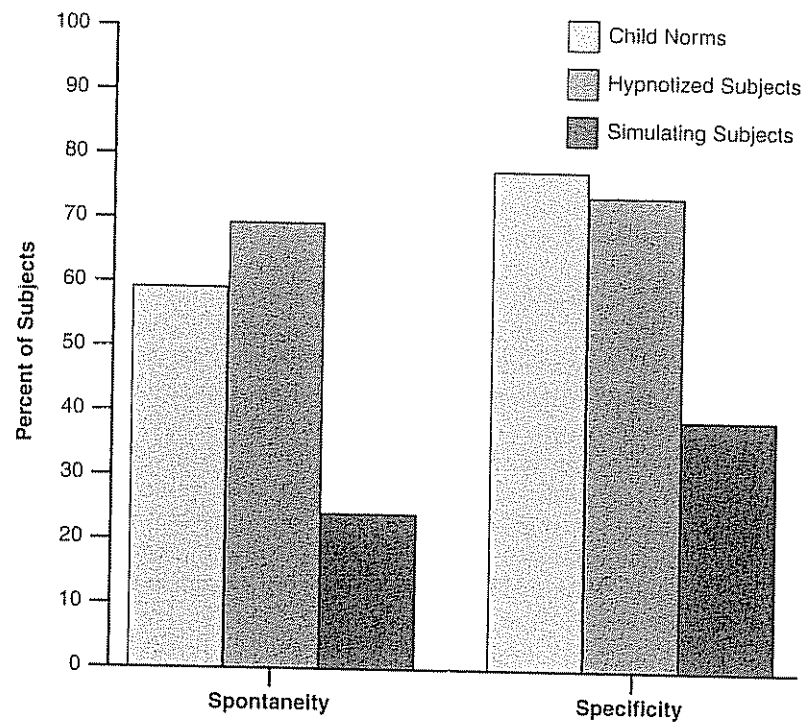
We hypothesized that hypnotized subjects and actual children would look much the same across spontaneity, specificity, and intensity; and that simulators would perform quite differently from both the real hypnotized subjects and children on these same measures. We carefully scripted all these procedures and completed the study.

The experimenter considered an object to be a spontaneous transitional object if the subject mentioned its presence or desired presence in two of three stress situations. A spontaneous response was scored as 1, and a nonspontaneous response was scored as 0. For the specificity measure, the number of objects named in response to the question "Would you like anything else?" was recorded. A negative response (specific) was scored as 1, a positive response of any number was scored as 0. Four intensity ratings were obtained for each subject. The hypnotist/experimenter evaluated the intensity manifested in the subject's response to the last three questions on a scale from 1 to 5. The hypnotist/experimenter also gave a subjective intensity rating from 1 to 5, low to high, based on general affect and nonverbal behaviors. By testing some subjects preexperimentally, interrater reliability was found to be acceptable on these ratings. All four intensity measures were summed across questions to give each subject an intensity score with a possible range of 4 to 20.

Figure 8.1 summarizes the results. Eleven of 16 hypnotized subjects spontaneously produced transitional objects under stress (69%). Just four of the 15 simulators were spontaneous under the same conditions (27%). Approximately 60% of children are reported to require transitional objects during stressful times. Similarly, 75% of hypnotized subjects requested just one object (i.e., were specific), compared to 41% for simulators. Again, the norm for children is approximately 78%. Finally the experimenter (blind to whether subjects were hypnotized or simulators) rated emotional intensity on a scale from 4 to 20. Hypnotized subjects' emotional intensity was significantly higher ( $M = 13.50$ ), compared to the emotional intensity of simulators ( $M = 7.53$ ),  $p < .05$ . As Figure 8.1 demonstrates, across spontaneity and specificity measures hypnotized adults and actual children looked similar in their response to transitional objects. That similarity could not be mimicked by simulators exposed to exactly the same procedures. Not only were simulators significantly different from hypnotized subjects; they were also significantly

**Figure 8.1**

Performance of children, hypnotized subjects, and simulators on the spontaneity and specificity measure.



different from children. We boldly interpreted these findings to mean that there was a more complete reinstatement of a past (otherwise unconscious) emotional state for subjects experiencing meaningful hypnotic age regression.

### Study 2: Replicating and Extending Our Findings

We were encouraged, but still puzzled. Our positive findings concerning genuine regression seemed to run counter to the bulk of empirical work, which suggested that hypnotic age regression was nothing more than good acting. Further, most empirical studies suggest that after the age of 10, people's earliest recollections do not date back before the age of 3 or 4 (Howe & Courage, 1993, 1997). Our results seem to fly in the face of these findings. We were on record saying that the procedure had elicited personalized, strong feelings. Maybe this accounted for our unusual findings. Or maybe it was because the measures taken during the procedure focused on emotion (rather than thinking). In a follow-up study (Nash, Lynn, Stanley, Frauman, & Rhue, 1985) we decided to examine the first possibility. In our first study we scared, and in some cases terrified, our hypnotically regressed subjects by suggesting that "Mommy" was inexplicably "gone." In a sense we induced separation anxiety. What would happen if our hypnotic subjects were not overwrought, if they

were regressed to age 3 but given suggestions for Mommy to be right there with them (in sight), in several different contexts. Would we lose our effects because the experimental situation was no longer "electric" with emotions?

The answer is "no." The hypnotic subjects ( $n = 16$ ) in our second study were indeed quite calm. And they were understandably disinclined to spontaneously ask for a transitional object under such serene conditions (why ask for a Mommy-substitute when you have the real thing right there?). But when a transitional object was explicitly suggested, the hypnotic subjects were specific in their selection (one and only one object), and they were rated as being more emotionally attached to the object than the simulators. Simulators ( $n = 15$ ) were unerringly miserable in their rendition of what a real hypnotic subject would do (or a child for that matter). They tended to ask for multiple objects, and they were not particularly attached to them. With the exception of the spontaneity variable, the pattern of results of Study 2 conformed to that of Study 1. All of this seemed to suggest that it was not WHAT we did with our Study 1 subjects (render them emotionally overwrought) that accounted for our results, but rather it was WHERE we looked for the regressed effect: in the realm of emotional functioning. Study 2 subjects could be perfectly calm but elicit the same accurate childlike responses.

### Study 3: The Wake-Up Call

When we submitted our manuscripts to professional journals, it became clear to us that we were meeting with unusually stiff resistance. In retrospect, between the time that Study 1 and Study 2 were conducted, the American Medical Association and the Society for Clinical and Experimental Hypnosis had both issued stern public statements about the inadvisability of using hypnosis for law enforcement purposes: Their point was that hypnosis does not really "refresh" memory, and it actually causes problems with overconfidence once the hypnosis is ended. Our studies were running against this current in some respects. Reviewers pressed us on two points:

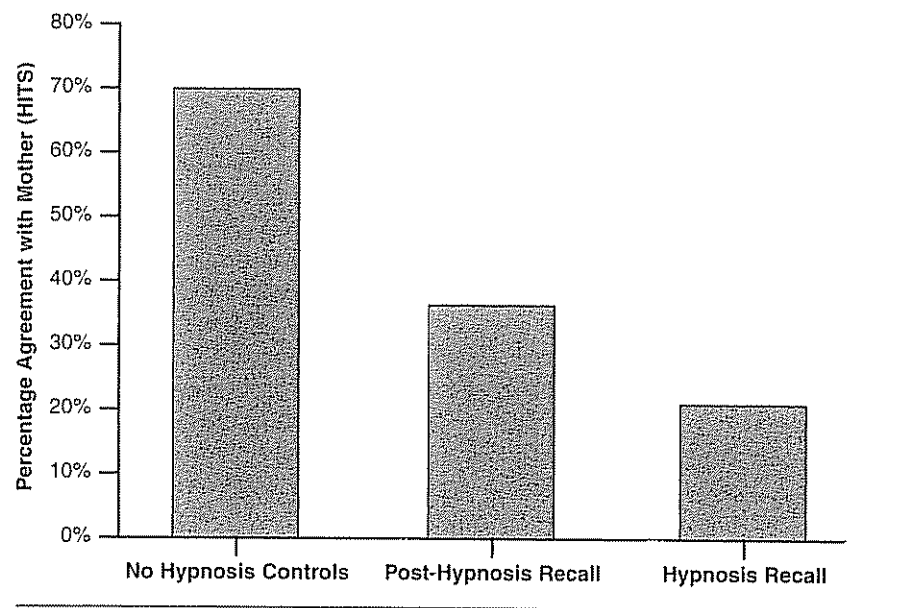
First, we had acknowledged in Study 2 that the differences between hypnotized subjects and simulators in regard to transitional objects could conceivably be due not to the presence/absence of hypnosis, but to differential history with transitional objects. That is, simulators were all low hypnotizables; hypnotic subjects were all high hypnotizables. Maybe people who are low hypnotizables, as children, just have less experience with transitional objects. Thus they would be at a loss to know how to respond appropriately. This seemed a "stretch" to us, but maybe worth a look. Second, those who bemoaned the fallibility of memory during forensic hypnosis did not "like" our results. They tended to harp on the first point and slyly hint (correctly) that we really did not know for sure whether the transitional objects mentioned during hypnosis were in fact real or imagined.

We were skeptical about these objections and somewhat inclined to dismiss them, when we realized that we might be able to actually test their validity. By a stroke of good luck, we had retained the campus addresses of subjects in the second study, both hypnotic subjects and simulators. Put simply, we called their

But Figure 8.2 illustrates a vexing pattern of results concerning the accuracy of hypnotic subject report. During the hypnotic age regression procedure all 14 hypnotic subjects reported having at least one transitional object, but only three of these (21%) were confirmed by the mother. Among the controls (i.e., the simulators asked about transitional objects after the experiment was over, post-simulation), seven of them either reported a transitional object that matched one reported by the mother (three subjects) or agreed with the mother that there was no transitional object (four subjects), for a 70% accuracy. We subjected these data to a number of statistical analyses and in all cases the difference in accuracy was significant. During hypnosis, hypnotized subjects had significantly fewer "hits" with mothers than did simulators during the post-simulation interview. Even after hypnosis was terminated, subjects in the hypnotized group still had significantly fewer "hits" than did those who had been in the simulating group. In addition, the ratio of number of responses matching parent report to total number of responses given by the subject was calculated for hypnotic recollection and controls (people who had been simulating). The mean accuracy ratios were .178 and .633 for hypnotic

**Figure 8.2**

Percentage of "hits" between subject and parent description of transitional objects for hypnosis and control subjects



and post-simulation conditions, respectively. This difference was significant, with a greater accuracy ratio evident in the post-simulation condition.

Clearly, hypnotic subjects were enthusiastically productive. They reported a lot of transitional objects during the age regression procedure (15 of them). But this productivity was at the cost of accuracy (they were wrong almost 80% of the time). Further (we might say "worse yet"), upon post-experimental questioning, subjects who had been hypnotized went right on believing that they had had these transitional objects. In fact, during the post-experimental questioning they reported seven more transitional objects that they had not reported during hypnosis. Their post-hypnosis accuracy was 36%. The point here is that hypnotic subjects do not just believe what they report only when they are in hypnosis; they believe it afterward as well.

Maybe hypnotized subjects were just extraordinarily accurate about their transitional objects, and it was their *mothers* who were wrong. This was in fact a point never raised by the reviewers, but we did consider it. There are several good reasons to reject this position. First, the mothers of hypnotic subjects were just about on the mark when 64% of them reported that their child had had a transitional object (remember, 59% is the norm); second, our suggested regressed age (3) was right on the upper edge of childhood amnesia. Given this apparently biologically based barrier to recall it seems unlikely that an adult (even when hypnotized) would accurately remember anything earlier than age 3 or 4. The task for mothers was much simpler. They were asked as adults to



remember something (i.e., their child's transitional object) that occurred *while* they themselves were adults. Third, because transitional objects are by definition ever-present companions that operate as mother-substitutes, one might reasonably expect that mothers' repeated exposure to these objects night after night, over many months and even years, would be sufficient opportunity for memory encoding. Fourth, if mothers were so extraordinarily inaccurate as to be wrong about their child's transitional object (79% of the time among our hypnotized group), how would one explain that the mothers of our controls agreed with their children 70% of the time?

Why then would hypnotized subjects be so inaccurate about their transitional objects? It is a fact that under certain circumstances all of us unwittingly confabulate (fill in the gaps of our memory, Schacter, 1995). Over the past ten years it is now abundantly clear that hypnosis is a condition which, for highly hypnotizable individuals, appears to exaggerate this tendency. Further, hypnotic subjects emerge from hypnosis more confident about the validity of these confabulations than would be the case if they had never been hypnotized (Kihlstrom & Barnhardt, 1993; McConkey, 1992).

In sum, the results of Study 3 led us to agree with our critics: To the extent that a psychoanalytic conception of the "unconscious mind" implies a memory bank of detailed, pristine representations of the past, our research is not supportive. The especially distorted recall of hypnotic subjects concerning their transitional objects contradicts our contentions in Studies 1 and 2. As so often is the case in science, our data led us to a paradox: There was a genuine, age-appropriate emotional response to objects that were nonetheless inaccurately remembered or entirely made up.

How do we solve or understand this? How can something be emotionally true, completely believed in, and yet patently fictional? It is important to keep in mind that this is an ancient paradox encountered by tribal shamans, mythographers, playwrights, and thoughtful psychotherapists among others. Most psychotherapists acknowledge that the emotional tone and expressive style connected to a conflicted and believed-in "memory" of an event can be of immense help and validity in psychotherapy, even when the event has in fact never happened. Early on, Freud stopped assuming that everything his patients "remembered" about past traumas was literally true. But he adamantly maintained that the emotional tone and expressive style connected to a conflicted (and believed-in) "memory" can be of immense clinical import and validity, even when the memory is inaccurate.

It could be that hypnosis (and by extension psychotherapy) enhances access to important emotional material, but this in no way implies an accurate reliving of a specific event. The emotion is in some sense "true," but the content (e.g., the story, the details, the event) may not be. Maybe it is not "finding out the truth," or plumbing the unconscious depths for hidden events that sets us free from distress, whether in the mall reflecting on how we sorted out the quality of nylon stocking (while being pressed by a vaguely sneering experimenter), or in the therapist's office earnestly reflecting on where we "went wrong" in our life. Instead, maybe it is the telling of a compelling story about ourselves,

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our world, and our feelings that heals and reassures us. We are undoubtedly moved by unconscious influences, not the least of which is the deeply rooted compulsion to create and explain ourselves.

## SUMMARY

The chapter begins by offering a model (first articulated by Ken Bowers) for organizing and understanding possible avenues for unconscious influence. This model focuses on *the unconscious as unnoticed* (Can a stimulus or experience be processed in such a way that it influences thoughts or actions, yet be unconscious by virtue of its being unnoticed?), *the unconscious as the noticed, but uncomprehended* (Can a noticed stimulus or experience be processed in such a way that it influences thoughts or actions, yet be unconscious by virtue of its being unappreciated as influential?), *the unconscious as a retained, but unavailable, memory of an actual event* (Can a past event be coded or stored in memory in such a way that it influences thought and action, but remains unavailable to conscious awareness?) and *the unconscious as personal fiction that "feels like" a memory of an actual event* (Can noticed stimuli and experiences be encoded and stored in such a way that they elicit "memories" of events that in fact never occurred, and the source of the false memory is unappreciated?).

The chapter then samples the research literature as it relates to each of these constructions of unconscious influence. Investigations on subliminal perception, social influence, human judgment, intuition, creativity, hypnosis, learning, and neuropathology are woven into the fabric of this treatment. While psychoanalytic notions of the unconscious are in no way dismissed, the broader perspective of cognitive science is embraced. Finally, programmatic research on hypnotic age regression as it relates to unconscious processes is presented to further illustrate the logic and challenge of such work. This line of research revealed that it is probably not accurate to think of the "unconscious mind" as a memory bank of detailed, uncontaminated representations of the past.

## DISCUSSION QUESTIONS

1. Can you remember an event that happened before you were 2 years old? Are you sure it is a memory of the event itself? Or is it something you pieced together from other sources (e.g., hearing people recount the event; seeing photographs)?
2. Have you ever been absolutely certain that you witnessed an event, and later you found out the event never happened, or that you could not have witnessed it?
3. Have you ever been absolutely certain that you did *not* witness an event, and later found out that you did?
4. Have you ever used a Ouija board? How do you think it works?
5. Do you think people can influence your feelings and ideas without your being aware of it? If so, give an example.

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Schacter, D. (Ed.). (1995). *Memory distortion: How minds, brains, and societies reconstruct the past*. Cambridge, MA: Harvard University Press. This edited book brings together some fine papers by neurologists, psychologists, and other cognitive scientists who present their views and findings on how memory becomes distorted.

## SUGGESTED WEB SITES

<http://sunsite.utk.edu/IJCEH/>

The web site of the *International Journal of Clinical and Experimental Hypnosis* informs the reader of what hypnosis is, and what it is not.

<http://list-socrates.berkeley.edu/~psy001/jk/psych1mem5.html>

A concise overview of the psychological unconscious.

[http://www.institute-shot.com/hypnosis\\_theories\\_&\\_explanations.htm](http://www.institute-shot.com/hypnosis_theories_&_explanations.htm)

The web site of the Institute for the Study of Healthcare Organizations & Transactions offers information on the history, theory, and applications of hypnosis.

## INFOTRAC COLLEGE EDITION SEARCH TOPICS

Unconscious  
Memory

Hypnosis  
Repression

Freud  
False memory

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