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6

DISSOCIATION IN HYPNOSIS: THEORETICAL FRAMEWORKS AND PSYCHOTHERAPEUTIC IMPLICATIONS

PAMELA SADLER AND ERIK WOODY

Largely because of the seminal influence of Hilgard (1977), the concept of *dissociation* has become strongly linked with the domain of hypnosis. Unfortunately, however, dissociation is a complex and elusive construct, and various clinicians and researchers tend to use the term, often quite loosely, to refer to very different ideas about hypnosis. Partly because of this, when clinicians or researchers refer to dissociation in describing a hypnotic phenomenon or in attempting to explain it, their intended meaning is often unclear. For instance, is the word being used descriptively to denote a certain kind of event, and if so, what are the defining features of such an event? Or is the word being used to allude to an underlying mechanism, and if so, what are the essential properties of this putative mechanism?

In this chapter, we examine a set of hypothetical underlying mechanisms of dissociation that provide the basis for several intriguing theories about how hypnosis works. We briefly trace how these proposed mechanisms developed in hypnosis research over the last 100 years. We show that there are actually multiple competing dissociation theories of hypnosis, one stream of which

Clinical material has been disguised to protect patient confidentiality.

focuses on alterations of conscious experience and the other on alterations of cognitive control. Finally, we outline some clinical implications of these ideas and present a case example to illustrate some of these implications.

A BRIEF HISTORY OF DISSOCIATION THEORIES OF HYPNOSIS

Interest in the concept of dissociation has waxed and waned over the decades, with much activity in some periods of time and virtually none in others. To begin, we go back to the turn of the 20th century.

Janet's Concept of Dissociation

Janet (1901, 1907) originated the concept of *désagrégation* [dissociation] to explain hypnosis and hysterical disorders, both of which he interpreted as suggestive phenomena. He hypothesized that a particular cluster of mental contents can become split off, or disassociated, from the rest of a person's mental processes. Such ideas thereby become isolated from both awareness and voluntary control. This separation allows those ideas to be activated, outside of awareness, through suggestion.

Janet (1925) proposed that dissociation could often be partial rather than complete, such that the awareness and voluntary control linked with the dissociated content are only reduced somewhat but not eliminated. Nonetheless, subsequent research on Janet's concept of dissociation in hypnosis was designed to test a much stronger interpretation of it, which implied autonomous simultaneous mental processes. Some researchers (Hull, 1933; Rosenberg, 1959; White & Shevach, 1942) inferred that if Janet was correct, then in hypnosis people ought to be able to do two mental tasks at the same time without these tasks interfering with each other as they usually would. Results of the research did not seem to confirm this prediction, and, therefore, interest in Janet's ideas declined.

Hilgard's Neodissociation Theory

Reviving interest in Janet's work, Hilgard (1977) adopted Janet's concept of dissociation as "the splitting off of certain mental processes from the main body of consciousness with various degrees of autonomy" (Hilgard, 1992, p. 69). Hilgard proposed that in hypnosis the mechanism of an *amnesia-like barrier* could block some mental activity from the conscious access it would otherwise have. In addition, he discovered that with appropriate suggestions, a *hidden observer* could be elicited that was able to report the mental activity that was otherwise blocked from awareness in hypnosis. From this finding, he

made the bold conjecture that in hypnosis amnesia-like barriers can divide consciousness into parallel, coexisting channels (which, however, can interfere with each other to some extent). These ideas—the amnesia-like barrier and the hidden observer—basically elaborated Janet's theme that hypnosis crucially involves reversible restrictions of awareness.

However, Hilgard (1977, 1991, 1992) also developed other ideas, less indebted to Janet, about the mechanisms that may underlie hypnosis. In particular, he proposed a model of hierarchical levels of cognitive control mechanisms, and he hypothesized that hypnosis alters how this control system operates. At the lower level of the model are numerous coexisting control subsystems, and at the higher level is an executive system that ordinarily governs the activity of the lower subsystems. Hilgard hypothesized that hypnosis changes the function of the executive system and, hence, the way in which behavior is controlled.

One important function of the executive system is planning and initiating new behavior. Hilgard (1979) argued that hypnosis weakens this function, such that in hypnosis a person "does not independently undertake new lines of thought or action" (p. 50). Another important function of the executive system is to monitor activity in the subsystems. Accordingly, Hilgard argued that hypnosis reduces this monitoring, such that in hypnosis people become less aware of some of their mental operations, such as the role of volition in their hypnotic responses. A further important function of the executive system is the use of monitoring to provide corrective feedback for the supervision of control. Hilgard suggested that the loss of this corrective feedback in hypnosis could explain why people may confuse their own imaginings with external reality, as in hypnotic hallucinations.

Although Hilgard attempted to combine this hierarchical-control model of hypnosis with his Janet-inspired ideas about amnesic barriers and the hidden observer, the awkward sutures from the attempt often show in his writings. For example, this unwieldy integration led him to propose multiple, inconsistent explanations for the same hypnotic phenomenon, as we examine next.

Bowers's Reformulation of Neodissociation Theory

Strongly influenced by Hilgard, Bowers was one of the most vigorous proponents of neodissociation theory (e.g., Bowers & Davidson, 1991). However, he eventually became critical of some aspects of the theory. In particular, he pointed out that amnesic barriers were an implausible mechanism for most hypnotic behaviors (Bowers, 1990, 1992b) because spontaneous amnesia is a far more rare response than the hypnotic behaviors that Hilgard claimed it might explain. In addition, Bowers noted that Hilgard's proposed barriers are arbitrarily selective in an uncomfortably ad hoc way. For example, with regard

to hypnotic analgesia, “the pain and cognitive effort to reduce it is hidden behind an amnesic barrier, but not the original suggestions for analgesia, nor the goal-directed fantasies that typically accompany the reductions in pain” (Bowers, 1992b, pp. 261–262).

More important, Bowers (1990, 1992b) pointed out that the amnesic barrier and Hilgard’s hierarchical-control model pose mutually inconsistent explanations of the core experience of involuntariness in hypnotic behavior. On one hand, Hilgard (1977) proposed that if hypnosis creates amnesic barriers, a hypnotic response might be enacted voluntarily and effortfully, as it would under other circumstances, but in hypnosis this self-agency could be walled off from awareness by such an amnesic barrier. Hence, the person’s experience of the response as involuntary and effortless would be illusory, a hypnosis-evoked reduction in self-awareness and not a result of a genuine change in the underlying control of behavior. On the other hand, Hilgard alternatively proposed that if hypnosis alters the hierarchical control of behavior, then a hypnotic suggestion may relatively directly activate a subsystem of control, bypassing much of the executive initiative and effort that would govern such a behavior under other circumstances. Hence, the person’s experience of the response as involuntary and effortless would be a result of a real change in the underlying control of behavior and not simply an illusory effect of reduced self-awareness.

In summary, the two branches of neodissociation theory make opposite predictions: There is high versus low executive cognitive effort in hypnosis, and the experience of involuntariness is illusory versus accurate. To resolve this inconsistency, Bowers (1990, 1992b) proposed that neodissociation theory should be split into two distinct subtheories: one involving *dissociated experience* and another involving *dissociated control*.

A dissociated experience explanation of hypnosis focuses on the alteration of how people experience their behavior: In hypnosis, the effort and volition that may be involved in enacting suggestions can become dissociated from awareness, such that “the control being exercised is not consciously experienced” (Bowers, 1990, p. 164). According to this account, executive effort in successfully enacting suggestions is actually relatively high but inaccurately experienced as low: “The hypnotized subject remains for the most part unaware that a good deal of effort may have been exercised in order to produce the suggested state of affairs” (Bowers, 1990, p. 162).

In contrast, a dissociated control explanation of hypnosis focuses on the alteration of how behavior is controlled: In hypnosis, lower subsystems of control can become relatively dissociated from oversight by the higher, executive level of control, largely bypassing its processes of volition and effortful control. According to this account, executive effort in successfully enacting suggestions is actually relatively low and thus correctly experienced as such (Bowers & Davidson, 1991).

Although Bowers (1990) initially viewed dissociated experience and dissociated control as complementary phenomena in hypnosis, he later became much more skeptical of dissociated experience and proposed that dissociated control is the principal dissociative mechanism underlying hypnosis (Woody & Bowers, 1994). In addition to the previously mentioned problem of spontaneous amnesic barriers being an improbable mechanism for most hypnotic behaviors, Bowers (e.g., Bowers & Davidson, 1991) viewed the dissociated experience account as somewhat difficult to discriminate from Spanos's (1986) social-cognitive theory of hypnosis. This theory similarly proposes that in hypnosis people maintain ordinary volitional control over their behavior, but, consistent with situational cues, simply misinterpret their responses as involuntary. Bowers (1992b) eventually advocated a position on dissociation in hypnosis that is remarkably far from Janet's: "Dissociation is not intrinsically a matter of keeping things out of consciousness—whether by amnesia, or any other means" (p. 267). In summary, Bowers believed that hypnosis alters the control of behavior, rather than distorting the self-perception of this control.

Woody and Sadler's Proposal to Reintegrate Dissociation Theories

In an important critique of dissociation theories of hypnosis, Kirsch and Lynn (1998) pointed to the inconsistencies between the different versions, such as dissociated experience and dissociated control. Thus, as is also evident in the foregoing brief review, there seemed to be no reasonably consistent, integrated view about dissociation in hypnosis. In addition, Kirsch and Lynn directed strong criticism at the problematic special mechanisms of the amnesic barrier and the hidden observer, which were assigned such a central role in Hilgard's (1977) highly influential work.

In response to Kirsch and Lynn's (1998) critique, we (Woody & Sadler, 1998) outlined a framework in which the various theoretical positions concerning dissociation in hypnosis may be viewed as closely related and reasonably consistent with one another. In addition, we argued that these positions could be reformulated without reference to the admittedly elusive, metaphorical constructs of the amnesic barrier and the hidden observer. Instead, we proposed that dissociation theories of hypnosis might be anchored in dual-systems models of action, as proposed by various cognitive neuroscientists (e.g., Goldberg, 1987; Lhermitte, 1986; Mesulam, 1986; Norman & Shallice, 1986; Perner, 2003). In these models, two complementary systems are responsible for the initiation and control of action: a higher, centralized executive system, which principally handles volitional, effortfully controlled acts; and a lower, diverse system, which mainly handles more stimulus-driven, routine acts. The close parallel of such dual-systems models with Hilgard's hierarchical-control ideas about hypnosis is practically self-evident. In addition, this perspective

has the considerable potential of opening up hypnosis research to a thriving domain of research in cognitive neuroscience rather than stranding it on the shoals of special-purpose, ad hoc constructs such as the amnesic barrier and the hidden observer. In the next section, we provide an updated and expanded version of this reintegration of dissociation theories.

AN INTEGRATIVE PERSPECTIVE ON DISSOCIATION THEORIES OF HYPNOSIS

Figure 6.1 provides a diagrammatic representation of our *integrative model* (Woody & Sadler, 2008). Although this model, as it is described here, is mainly conceptual, the possible neural bases for it are covered in detail elsewhere (Jamieson & Woody, 2007; Woody & Sadler, 2008; Woody & Szechtman, 2007).

The model depicts two levels of control of action. The higher, executive level consists of *executive control* and *executive monitoring*, whereas the lower level consists of diverse *subsystems of control*. In accordance with dual-systems models of action (e.g., Norman & Shallice, 1986), it is the subsystems of control that

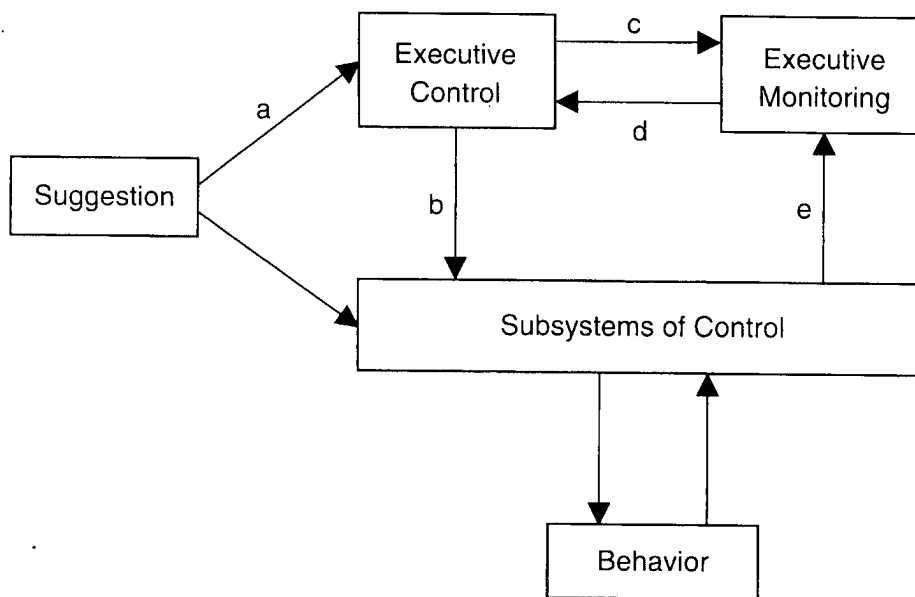


Figure 6.1. An integrative model of dissociation theories of hypnosis. A theory of *dissociated experience* involves the weakening of path *c*, and possibly of path *e*. A theory of *dissociated control* involves the weakening of path *b*, and possibly of path *a*. A theory of *second-order dissociated control* involves the weakening of path *d*. From *Oxford Handbook of Hypnosis* (p. 90), edited by M. R. Nash and A. J. Barnier, 2008, Oxford, England: Oxford University Press. Copyright 2008 by Oxford University Press. Reprinted with permission.

are hypothesized to be directly involved in the selection and tracking of behavior. The executive system provides a second level of control, associated with the sense of volition, which can modulate and monitor the subsystems of control to fine-tune their function. The model posits a major feedback loop by which executive oversight of action occurs. This loop runs from executive control, to subsystems of control, to executive monitoring, and back to executive control. Within the loop, the model posits another important feedback loop, between executive control and executive monitoring. It provides reciprocal connections by which information about intentions and goals passes from executive control to executive monitoring, and, in turn, information about ongoing activity in the subsystems of control passes from executive monitoring to executive control. Dissociation theories of hypnosis may be conceptualized as involving changes in the function of these feedback loops. In Figure 6.1, the lower-case letters along the arrows label functional connections, the weakening of which, according to different dissociation theories, may be hypothesized to yield characteristically hypnotic responses.

First, the *theory of dissociated experience* can be interpreted as crucially involving the weakening of the path labeled *c*, the functional connection from executive control to executive monitoring. Accordingly, when behavior is initiated and modulated in a voluntary fashion by executive control, this information would not be fully passed to the executive monitor and, therefore, not represented well in awareness. The theory of dissociated experience may also imply a weakening of the path labeled *e*, from subsystems of control to the executive monitor. In both cases, the executive monitor would be cut off, or dissociated, from information about the self-mediated nature of ongoing behavior. Hence, in response to hypnotic suggestions, highly responsive individuals could deliberately initiate and modulate their behavior without accurately monitoring this volition. As a result, they would have the illusion that the behavior occurred extravolitionally.

Second, the *theory of dissociated control* can be interpreted as crucially involving the weakening of the path labeled *b*, the functional connection from executive control to the subsystems of control. Accordingly, hypnotic suggestions could bypass the influence of executive control and more directly activate lower subsystems of control. The theory of dissociated control may also imply a weakening of the path labeled *a*, from the suggestion to executive control. In both cases, executive control would be relatively cut off, or dissociated, from the activation of behavior, and, thus, processes of volition and effortful control would be minimized. Hence, in response to hypnotic suggestions, highly responsive individuals could enact behavior without the usual executive initiative and effort. As a result, they would have the correct impression that the suggested behavior occurred with less volition and effort than is typical in ordinary circumstances.

Third, a further important variant of dissociated control not previously addressed by us (Woody & Sadler, 1998) can be readily integrated into this overarching model. This variant, which can usefully be termed the *theory of second-order dissociated control* (Woody & Sadler, 2008), crucially involves the path labeled *d*, from executive monitoring to executive control. As mentioned earlier, Hilgard (1992) posited that, ordinarily, actions initiated by executive control are tracked by the executive monitor to provide information for ongoing adjustments to the executive control process, and he proposed that hypnosis might block this correction process. This idea is at the core of a revision of dissociated control theory recently proposed by Jamieson and colleagues (Egner, Jamieson, & Gruzelier, 2005; Jamieson & Sheehan, 2004; Jamieson & Woody, 2007). They advanced the idea that, in hypnosis, monitoring feedback becomes functionally dissociated from executive control, as represented in our integrative model by the weakening of path *d*. Accordingly, in hypnosis, the executive control process would not be corrected and fine-tuned by the executive monitor in the usual way. Thus, monitor-detected inconsistencies that would ordinarily evoke changes in control in other circumstances would have relatively little impact on the executive control process in hypnosis. This type of dissociation would involve weakening in the control of control, a second-order level of cognitive control normally grounded on executive monitoring.

The integrative model, as shown in Figure 6.1, indicates both how the three types of dissociation theory may be distinguished from one another and also how they fit together conceptually. The three theories represent alternative hypotheses about the mechanisms underlying hypnosis; however, the model indicates that these hypotheses are potentially compatible rather than mutually exclusive. Although in future research one of these dissociative mechanisms may prevail over the others, it is alternatively possible that hypnosis may involve some kind of flexible mixture of multiple processes, depending on the individual's characteristics and the type of suggestions (Woody & McConkey, 2003).

In the next sections, we offer more detail about how hypnotic responses may be conceptualized from each of the three perspectives. For clarity, we discuss pure versions of each of the three theoretical positions, presuming the absence of the types of effects hypothesized by the alternative dissociation theories.

Dissociated Experience Theory

According to *dissociated experience theory*, in hypnosis, people enact suggestions voluntarily, with the same degree of executive control as in non-hypnotic circumstances; however, because they do not self-monitor their volition accurately, they have the illusory impression that their responses are

involuntary (Kihlstrom, 1992; Shor, 1979). Hypnotic responses, therefore, are essentially delusions of control, in which people mistakenly attribute self-generated thoughts and actions to causes outside the self. Similarly, the failure to accurately monitor the self-generation of thoughts and images could lead to experiences incorrectly attributed to extravolitional origins, such as positive hallucinations and confabulations of memory. Likewise, the failure to accurately self-monitor the voluntary inhibition of thoughts and images could lead to experiences such as negative hallucinations and amnesia.

A critical aspect of self-monitoring may be a felt or emotive component. Two types of monitoring appear to be of particular relevance to hypnosis: the sense of volition, whether or not an action is attributable to one's own intentions; and the sense of reality, whether or not an experience is attributable to the external environment (Woody, Barnier, & McConkey, 2005). It has been argued that both of these discriminations are fundamentally emotive rather than cognitive (James, 1890; Proust, 2003).

Woody and Szechtman (2000) hypothesized that hypnosis may exert its effects by altering these underlying, felt experiences, which they labeled with the broader term *feelings of knowing*. Various psychopathological conditions—including delusional misidentification syndromes, derealization and depersonalization, and obsessive-compulsive disorder (Szechtman & Woody, 2004)—indicate that such felt components are highly potent. For example, in Capgras syndrome, patients recognize that acquaintances possess all their usual objective characteristics, such as face and tone of voice, yet the patients insist that the others are imposters. This misperception is caused by the absence of the covert emotional “glow” normally experienced in the presence of familiar others (Ellis & Young, 1990). Similarly, consistent with dissociated experience theory, hypnosis may temporarily alter such covert, affective components and thereby powerfully change people's perceptions of the accompanying experiences.

Dissociated Control Theory

According to *dissociated control theory*, in hypnosis, people's behavior is governed less by higher, executive control and more by unmodulated lower subsystems of control, compared with nonhypnotic circumstances (Woody & Bowers, 1994). Given a reduced role for executive control, responses in hypnosis should be more contextually dependent and stimulus-driven than usual, and less readily redirected in a deliberate, effortful way. Thus, the characteristic hypnotic experiences of involuntariness and effortlessness would accurately reflect a genuine change in the hierarchy of control.

In addition to the core hypnotic experiences of involuntariness and effortlessness, dissociated control theory explains other hypnotic phenomena

quite differently from dissociated experience theory. To illustrate, consider a motor challenge suggestion in which an initially suggested state of affairs, arm rigidity, is followed by the explicit instruction to try to overcome it by bending one's arm. In carrying out the instruction to try, the individual must exert will, which represents a bid for the executive system to modulate lower subsystems of control (Norman & Shallice, 1986). However, according to dissociated control theory, this executive control is weakened in hypnosis, and therefore the individual should have the experience that effortful control is less effective than it is in normal circumstances. Because exerting will does not counteract stimulus-driven behavior as well as it usually does, the arm is hard to bend.

Dissociated control theory also provides an intriguing explanation of hypnotic alterations of memory. For this purpose, Woody and Bowers (1994) applied a model of the executive control of memory, proposed by Norman and Bobrow (1979) and Shallice (1988). These researchers argued that the executive system (which they termed the *supervisory system*) offers a higher-order level of control over memory, just as it does for action. Confronted with a nonroutine problem that cannot be handled readily by lower-level retrieval subsystems, the executive system formulates preliminary descriptions of what the relevant records would be like if indeed they existed and then compares candidate records with these descriptions to verify their relevance.

Accordingly, if hypnosis weakens executive functioning, it should differentially interfere with memory tasks that require such description and verification phases. The description phase seems particularly relevant to hypnotic suggestions for amnesia: Hypnosis should interfere with access to memories when they require the formulation of preliminary descriptions, as in free recall, but not when they are externally cued, as in cued recall and recognition. The laboratory evidence on hypnotic amnesia is generally consistent with these implications (Barnier, Bryant, & Briscoe, 2001; Evans, 1979; Kihlstrom, 1980; Kihlstrom & Shor, 1978; McConkey & Sheehan, 1981; McConkey, Sheehan, & Cross, 1980; Spanos, Radtke, & Dubreuil, 1982). The verification phase seems particularly relevant to the problem of suggestions that may lead to confabulation: Hypnosis should interfere with verification, leading to irrelevant associations and incorrect confidence that they match the searched-for material. The laboratory evidence on hypnotic distortion of memory is consistent with these implications (Dywan & Bowers, 1983; Laurence & Perry, 1983; Orne, Whitehouse, Dinges, & Orne, 1988).

Woody and Bowers (1994) also advanced a dissociated-control explanation for hypnotic analgesia. Pain typically captures attention in a peremptory fashion (McCaul & Malott, 1984), such that awareness of pain repeatedly interrupts any ongoing deliberative activity in the executive system (Norman & Shallice, 1986). Woody and Bowers hypothesized that hypnotic suggestions

for analgesia may lower the sensitivity of the executive system to these pain-based interruptions, such that pain, in effect, no longer draws attention to itself. Presumably, the executive monitor would normally generate such interruptions; thus, this explanation seems to imply a dissociation of executive control from executive monitoring, as in second-order dissociated control theory.

Second-Order Dissociated Control Theory

Rather than focusing on the dissociation of lower subsystems of control from executive control, as in the original version of dissociated control theory (Woody & Bowers, 1994), *second-order dissociated control theory* focuses on the dissociation of executive control from executive monitoring (Egner, Jamieson, & Gruzelier, 2005; Jamieson & Sheehan, 2004; Jamieson & Woody, 2007). According to a pure version of this account, hypnosis does not affect the modulation of subsystems of control by executive control (i.e., a first level of executive control); however, it weakens the feedback from executive monitoring to executive control (i.e., a second level of cognitive control). The normal role of such feedback is to provide information about how well control is working, which allows ongoing adjustments in control to make it more flexible and responsive to changing task demands (Cohen, Aston-Jones, & Gilzenrat, 2004). Thus, in hypnosis, after initiating behavior at the first level of executive control, the individual is relatively incapable of flexibly adjusting this control on the basis of executive monitoring.

Second-order dissociated control theory provides a further explanation for the phenomenon of hypnotic involuntariness. Discussing the dual-control model of action, Perner (2003) hypothesized that “intentional action is defined by the match between what the lower level produces and what the higher level stipulates should be done” (p. 239; see also Haggard, 2003). Thus, if hypnosis weakens the fine-tuning of executive control by executive monitoring, the mismatches that result should be experienced as nonvolitional.

In summary, whereas the original dissociated control theory implies that the initiation of executive control is the issue, the second-order theory implies instead that it is the ongoing adjustment of executive control that is the issue. To illustrate the second-order theory, consider our example of the motor challenge suggestion. Proprioceptive information, such as the lack of changes that should be associated with trying to bend one’s arm, may indicate that the control program requires updating. However, in hypnosis, the executive monitor fails to pass this information to executive control, and therefore the control strategy and concomitant suggested state of affairs remain unchanged.

Another intriguing distinction between the original and the second-order dissociated control theories concerns the capacity to generate novel responses in hypnosis. Generally, an important role of the executive system

is to aid the production of novelty when circumstances require it (Norman & Shallice, 1986). In a pure version of second-order dissociated control theory, the first level of cognitive control—the governing of subsystems of control by executive control—is unaffected, allowing greater novelty in hypnotic responses than the original dissociated control theory, in which this level of control is weakened (Bowers, 1992a). Indeed, the second-order theory implies strong persistence of novelty. In particular, after setting up unusual cognitive control strategies, individuals who are high hypnotizable should be able to sustain them in a quasi-perseverative way, whereas those who are low hypnotizable would have such attempts overturned by conflict monitoring (Jamieson & Sheehan, 2004; Raz, Fan, & Posner, 2005; Woody & Farvolden, 1998).

Individuals who are high hypnotizable may differ in the degree to which they generate novelty. In a detailed comparison of two hypnotic virtuosos, McConkey, Glisky, and Kihlstrom (1989) found that for one of them, the suggested effects just happened passively by themselves, whereas the other person actively produced a variety of rather complex cognitive strategies in responding to the suggestions. A passive style of hypnotic response seems to fit the original formulation of dissociated control better, whereas a cognitively active style seems to fit the second-order dissociated control theory better.

CLINICAL APPLICATIONS

Before sketching out some possible clinical implications of the foregoing ideas, we want to raise a few caveats. First, we make no attempt to cover applications of hypnosis to a wide range of psychopathologies and other problems, because these applications are specifically covered in detail elsewhere, particularly in many other chapters of this volume. Instead, we focus on some issues common to various applications of hypnosis. These issues derive from the conceptualization of hypnosis as a way of altering the nature of awareness, as in dissociated experience, and as a way of altering the nature of control, as in dissociated control.

Second, we emphasize that the foregoing theoretical framework is somewhat provisional and incomplete. As such, it cannot explain all possibly effective applications of hypnosis. Dissociation theories of hypnosis can enrich clinicians' conceptualizations of how hypnosis works but do not tell them what is impossible.

Third, we need to address the issue of individual differences. Modern dissociation theories of hypnosis, from Hilgard's (1965, 1977) work onward, were devised, to a large extent, to explain the differences in hypnotic behavior between people who score high in hypnotic responsiveness on standardized

hypnosis scales versus those who score low. Thus, it is possible that these theories best explain the response to hypnosis of people who are high hypnotizable, whereas they may be less applicable to people with low to moderate hypnotic susceptibility.

Indeed, Bowers (1984) posited that treatment effects should be regarded as genuinely hypnotic if and only if they correlate with hypnotic susceptibility, as assessed with standardized scales. Although hypnosis can lead to improvement in clients of relatively low hypnotic susceptibility, Bowers argued that such improvement is attributable to placebo effects and other nonhypnotic processes at work in the therapeutic situation rather than to hypnotic suggestion per se.

Accordingly, along with many other hypnosis researchers, we strongly recommend that clinicians use standardized hypnosis scales in their hypnotherapeutic work. Information from standardized scales is necessary so that clinicians can verify, over an aggregate of cases, that the treatment effects involved are actually hypnotic. Without this information, hypnotherapy seems wide open to the criticism that it may be an assortment of nonspecific effects masquerading under an exotic label. (For a further discussion of these issues, see Woody & Barnier, 2008.)

Implications of Dissociated Experience

A major implication of the concept of dissociated experience is that hypnosis may be useful for effecting therapeutic changes in awareness. For example, an important, classic use of hypnosis to alter awareness is hypnotic analgesia. However, from the theoretical vantage point, the crucial issue concerns the underlying process by which hypnotic analgesia is achieved. According to the dissociated experience account, individuals who are high hypnotizable and who experience analgesia in response to hypnotic suggestions are voluntarily using the same kinds of effortful cognitive strategies to reduce pain that they would use outside of hypnosis; the difference is that in hypnosis they become less aware of their own volition and effort. As Bowers (1990) pointed out, the dissociated experience view of hypnosis appears to restrict hypnotizability and hypnotherapy to a rather minor role:

The only conceivable advantage of high hypnotizability would thus be a very limited one: Patients high in hypnotic ability would be more able than their low-hypnotizable counterparts to dissociate from consciousness any special effort or motivation involved in achieving treatment success. (p. 166)

Unlike Bowers, some other clinicians have been reasonably comfortable with the idea that hypnosis mainly affects clients' experience of therapy,

leaving the underlying mechanisms of therapeutic change mostly unaffected. For example, Kirsch (1993) made the following memorable comment:

For the cognitive-behavioral therapist, *hypnosis* is merely a new label for what is already being practiced. However, it is a label that can potentiate treatment for many clients. Unlike a rose, a therapy by a different name may not be experienced as the same. (p. 168)

Although dissociated experience theory implies that hypnosis is more than a new label, its treatment implications appear to be similar: The impression of effortlessness that clients who are high hypnotizable have in hypnosis may enhance how engaging and motivating the treatment is, even though this impression is illusory.

However, there is another, far bolder, rationale for the clinical application of hypnosis that stems from dissociated experience theory. Janet (1901, 1907) proposed that hypnosis and dissociative disorders closely parallel each other and, in fact, share the same underlying mechanisms, including a crucial underlying restriction of awareness. Similarly, there is currently a fairly widespread belief among clinicians that dissociative clinical phenomena, such as fugue states and depersonalization, represent “the spontaneous mobilization of hypnotic experience” (Spiegel, 1990, p. 127). That is, dissociative disorders may have an important autosuggestive core, such that these clients have spontaneously walled off certain material from consciousness using the same underlying, awareness-altering mechanisms that are at work in hypnosis (Allen, 1995).

The apparent clinical implication of this point of view is that hypnosis has special relevance for the treatment of dissociative disorders. Because hypnosis may be conceptualized as engaging the underlying mechanisms that played a role in causing the disorder, it allows the therapist a unique window to manipulate and redirect these underlying processes for therapeutic aims. For example, Smith (1995) commented that,

Hypnosis is increasingly thought of as a ‘controlled dissociation’ and dissociation as a form of ‘self-hypnosis’ What was originally evoked in the individual by traumatic experiences can be beneficially influenced in treatment by controlled hypnotic interventions. (p. 66)

Similarly, Horevitz (1993) characterized hypnosis as an “indispensable tool” (p. 416) in the treatment of multiple personality disorder (or dissociative identity disorder).

We see reasons for some caution about this line of reasoning. First, clinicians use the term *dissociation* rather loosely to describe diverse phenomena, many of which may possibly have little to do with hypnosis and hypnotizability (Frankel, 1994). For example, attempts to measure real-life dissociative ten-

dencies, such as with the Dissociative Experiences Scale (Bernstein & Putnam, 1986), tend to yield negligible relations to hypnotizability (e.g., Faith & Ray, 1994; Kirsch & Council, 1992). Second, the research on whether dissociative disorders are related to hypnotizability presents a mixed picture at best. Although some relatively early reports indicated a strong relation (e.g., Bliss, 1984), subsequent research has found only a quite modest relation (e.g., Moene, Spinhoven, Hoogduin, & van Dyck, 2003; Roelofs, Hoogduin, Keijsers, Naring, Moene, & Sandijck, 2002) or results suggesting no relation at all (e.g., Nash, Hulsey, Sexton, Harralson, & Lambert, 1993).

For these reasons, we believe it is unwarranted for clinicians to make any blanket assumption that dissociative psychopathology implies a role for hypnotizability and underlying hypnotic-like processes. Instead, we argue that the hypothesis of such a connection requires careful case-by-case evaluation, one part of which should include the administration of a standardized hypnosis scale. In our opinion, individuals who are relatively unresponsive to a formal hypnosis scale are unlikely to have autosuggestion as a core component of their difficulties.

We also raise a final reservation about a dissociated experience conceptualization of the hypnotic treatment of dissociative disorders. If we conceptualize both dissociative disorders and hypnosis as involving restrictions of awareness (e.g., Kihlstrom, 1994), the hypnotherapist seems to be put in the strange position of fighting fire with fire. In other words, why would a technique that restricts awareness be a good way to treat disorders having to do with a restriction of awareness?

Recent research linking hypnosis with dissociative disorders, conducted by Oakley and colleagues (Halligan, Athwal, Oakley, & Frackowiak, 2000; Oakley, 1999; Ward, Oakley, Frackowiak, & Halligan, 2003) and by Roelofs and colleagues (Hagenaars, Roelofs, Hoogduin, & van Minnen, 2006; Roelofs, Hoogduin, & Keijsers, 2002; Roelofs, Hoogduin, Keijsers, Naring, et al., 2002), strongly favors the dissociated control account rather than the dissociated experience account. For example, in conversion disorder, it is not simply a change in awareness that is implicated, but a change in the hierarchy of control. Roelofs, Hoogduin, and Keijsers (2002) noted that "in conversion paralysis and hypnotic paralysis the linkage between higher-level and lower-level information processing is impaired, resulting in disturbances that predominantly affect the intentional motor functions" (p. 52). Thus, dissociated control may provide a more useful conceptualization.

Implications of Dissociated Control

As stated earlier, the concept of dissociated control is that hypnosis modifies underlying control processes, or the manner in which behavior is

executed. The main clinical implication of this idea is that hypnotherapy should be useful for changing how clients control their behavior and for helping them to develop new ways of control. More specifically, according to the dissociated control account, hypnotic suggestions tend to bypass the intentional level of control and invoke control mechanisms that involve low cognitive effort. For example, according to this theory, hypnotic suggestions for analgesia given to individuals who are high hypnotizable elicit a type of pain control that is different from nonhypnotic control and involves much less effort. In contrast, according to the dissociated experience account, individuals achieving hypnotic analgesia are actually working hard in the same ways as they would control pain in nonhypnotic circumstances but are not aware of this effort.

The critical distinction, therefore, concerns how much effortful cognitive control is being expended in hypnotic responding. In a series of laboratory studies, Bowers and his colleagues provided important evidence that hypnotic phenomena do not depend on effortful control or other deliberate cognitive strategies. Miller and Bowers (1993) demonstrated that, in contrast to a cognitive-behavioral stress-inoculation procedure, hypnotic analgesia did not impair concurrent performance on a cognitively demanding task. This result indicated both that hypnotic analgesia uses negligible cognitive effort and that it taps mechanisms that are different from the effortful cognitive strategies of cognitive-behavioral therapy. Hargadon, Bowers, and Woody (1995) showed that the effectiveness of hypnotic analgesia in individuals who are high hypnotizable was not enhanced at all by deliberate cognitive strategies, such as engaging in counter-pain imagery. This study convincingly indicated that such deliberate cognitive strategies, which often spontaneously accompany suggestions for analgesia, actually have no role in producing the analgesia, which takes place through other, relatively effortless mechanisms. In a further study of hypnotic analgesia, Eastwood, Gaskowski, and Bowers (1998) verified that it requires low attentional resources or cognitive load, unlike stress inoculation.

Similarly, another series of laboratory studies by Bowers and his colleagues showed that hypnotic amnesia does not depend on any of a variety of proposed effortful cognitive strategies (Bowers & Davidson, 1991; Davidson & Bowers, 1991). Indeed, Bowers and Woody (1996; see also King & Council, 1998) showed that intentional efforts to suppress thoughts had the opposite effect from hypnotic suggestions for amnesia, increasing the rate of spontaneous occurrence of such thoughts. In addition, studies of other types of hypnotic suggestions likewise supported the hypothesis that the control mechanisms involved in hypnotic responding actually involve low cognitive effort (e.g., Ruehle & Zamansky, 1997; Sadler & Woody, 2006). Such studies require that researchers devise ways of measuring cognitive effort that avoid self-report

because both dissociated experience and social cognitive theories posit that self-report is an inaccurate indicator of actual effort.

The clinical implications of the foregoing body of research are quite important, because they indicate that hypnosis may offer clients genuinely new ways of controlling behavior. There are some major potential advantages of the shift toward low-effort control that hypnosis facilitates. First, compared with more effortful strategies, hypnotic control may free up cognitive resources for other purposes. For example, deliberate cognitive strategies for controlling pain exert a considerable drain on the individual's cognitive resources (Farthing, Venturino, & Brown, 1984) and are subject to disruption by fatigue and distraction (McCaul & Malott, 1984). When such strategies are being used, there may be relatively little cognitive capacity available for other tasks (Miller & Bowers, 1993). According to dissociated control theory, hypnosis offers individuals who are high hypnotizable a way to control pain with lower cognitive costs, such that these clients not only obtain relief from pain but also retain more of the cognitive resources needed to engage in other desired activities. A related hypothesis advanced by Bowers (1992b) is that, compared with strategic efforts to reduce pain, analgesia through hypnotic suggestion should be less vulnerable to disruption by fatigue and distraction.

Second, intentional, effortful control can become maladaptive, and hypnosis offers important therapeutic opportunities to shift clients to alternative kinds of control that may be more effective. Deliberate, effortful control is relatively slow and limited in capacity, and in many types of behavior—for example, sports and music performance—it can readily become counterproductive, interfering with skilled performance (Norman & Shallice, 1986). Furthermore, when such control proves inadequate, people may respond by exerting even greater effort, which can propel them into a vicious circle in which increasing effort produces a worsening of control rather than the intended improvement. Wegner (1994) showed that trying too hard to exert control ironically impoverishes control and leads to persistent unwanted thoughts, emotions, and behaviors. Wegner argued that the solution is often to relinquish effortful control; however, intentionally reducing overcontrol can be difficult because it involves the paradox of exerting yet more effort.

Accordingly, Woody and Bowers (1994) proposed that an important practical use of hypnosis is to provide “a therapeutic opportunity to relinquish some kinds of control in order to further others” (p. 74). With hypnosis, the bypassing of executive initiative and effort may help overturn maladaptive intentional control. In addition, by temporarily assuming some planning and control functions, the hypnotherapist may help elicit new patterns of control, eventually replacing old ones that might otherwise be difficult for clients to relinquish. Bowers and Woody (1996) pointed out that Ericksonian uses of

hypnosis, such as paradoxical manipulations of intention (e.g., Haley, 1967), might be viewed in this way.

A Case Study

The following case illustrates some of the foregoing points, particularly the use of a standardized hypnosis scale in therapy and the broad relevance of dissociated control in the conceptualization of hypnotherapy. The client, a woman in her 70s, was referred for persistent breathing difficulties (i.e., dyspnea). These difficulties, which had begun 5 years earlier and eventually began occurring several times per day, consisted of episodes of fairly severe shortness of breath due to the sudden inability to move air through the throat, which interfered with her physical activity and speaking. A series of diagnostic workups showed that the problem stemmed from the tendency of the client's vocal chords to close spontaneously during inhalation and exhalation (i.e., paradoxical vocal fold motion), but these workups were unable to determine whether the problem was principally organic or psychological in origin. A series of treatments, including voice therapy, massage therapy, and biofeedback, had provided only limited improvement. Subsequently, diagnostic impressions had shifted toward conceptualizing the breathing problem as related to anxiety, culminating in inpatient treatment of 2 months' duration, in which the client was given the diagnosis of generalized anxiety disorder. At this time, she was told her breathing difficulties were psychological in origin, connected psychologically to an emotionally abusive upbringing and the stress of a previous period of financial difficulties. However, treatment on the basis of this conceptualization did not lead to any improvement of the breathing problems. The client was also put on several psychoactive medications to treat the presumed anxious basis of her breathing problems and also depressive tendencies.

At the first session in our clinic, the breathing difficulties were abundantly evident: jerky inhalation and exhalation with sudden arrest of air flow, gasping for air, and interrupted, labored speech in a hoarse, low-pitched voice. Although the client said that her breathing problems were the result of anxiety, she could not explain what she meant by the word *anxiety* and could not report any thoughts or feelings consistent with this term. For example, when asked whether she experienced distressing thoughts in association with her breathing problems, she said, "Not really; I just wish I could breathe properly and get on with my life." However, these comments were somewhat difficult to evaluate because she appeared to be a somewhat limited informant, often unable to remember details of her condition and past treatments.

At the beginning of the therapy, when some of the foregoing medical history was not yet available, the client had two expectations. First, she anticipated further exploration of earlier hardships in her life, presumably to bring to

awareness and resolve unconscious motivations underlying the problem. The therapist, under the supervision of the second author (Woody), declined to pursue this avenue. Second, the client wanted help to relax better and hence lower her anxiety level. Given the plausibility that anxiety might be a factor that exacerbated the breathing difficulties, the therapist began treatment by using progressive muscle relaxation.

The first such session revealed a striking phenomenon. The early part of the progressive muscle relaxation protocol included instructions for steady, deep breathing. These immediately produced extremely disrupted breathing, full of gasping and choking. Subsequently, with instructions to focus on relaxing muscle groups, the client's breathing returned rapidly to a closer approximation of normal. In the next session, the therapist was readily able to replicate this phenomenon: Whenever the client was asked to voluntarily regulate her breathing, her difficulties worsened dramatically; in contrast, whenever her attention was drawn away from her breathing, the problem relented quite quickly. The client's medical history became available at this time, revealing that other professionals had in the past sometimes noted improvement of the breathing problem with distraction.

Continued progressive muscle relaxation practice, now with the breathing instructions removed, led to reduction in the client's breathing problems both in sessions and, more important, at home. However, it was not the anxiety-reducing effect of this intervention that seemed important; indeed, it became clear that the client had simply adopted the word *anxiety* as a quasi-technical term to denote her breathing difficulties. Instead, the relaxation appeared to work because it shifted the client's attention away from her breathing and her deliberate attempts to fix it. Thus, our case conceptualization was as follows: (a) the client's voluntary regulation of breathing was dysfunctional, whereas her automatic regulation of breathing was reasonably normal; and (b) her expectation or noticing of incipient breathing problems led to a vicious circle in which deliberate attempts to regulate breathing rapidly and paradoxically produced the problem.

This control-based conceptualization suggested the possible treatment relevance of hypnosis. In particular, the dissociated control account of hypnosis posits the minimization of higher-level, voluntary control of behavior—the level that functioned paradoxically for this client—and the relatively direct activation of alternative, lower levels of control. Hypnosis offered not only more variety in distraction-based coping strategies but also some novel treatment possibilities based on suggestion.

In preparation for the therapeutic use of hypnosis, the therapist administered a standardized hypnosis scale, the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A; Shor & Orne, 1962). For this case, this scale had the advantage of a comparatively extensive sampling of motor

suggestions, of both the direct motor type (e.g., hand lowering) and the motor challenge type (e.g., trying to bend an arm after the suggestion it has become stiff). The therapist explained that the rationale for administering the scale was twofold: to give the client some practice with hypnosis before applying it therapeutically and to get some information about what kinds of interventions might work best for her.

After the scale was administered, the client and therapist scored the client's responses. The client's pattern of response was clear: She tended readily to pass the direct motor suggestions, but passed none of the motor challenge suggestions or the hallucination suggestion, which are more indicative of the capacity for dissociative processes (Woody & Sadler, 1998). Inquiry into her subjective experience revealed relatively little sense of involuntariness but a state of strong motivation consistent with what Barber (1999) termed a *positive set*.

These results have some useful implications. First, in our opinion, the client's modest level of hypnotic suggestibility is not consistent with a conceptualization of the problem as autosuggestive in origin ("the spontaneous mobilization of hypnotic experience," in Spiegel's [1990] terms, p. 127). However, as our control-based conceptualization of the problem indicates, hypnosis could potentially be useful nonetheless because of its relevance for modifying the control of behavior. Second, the client's modest level of suggestibility indicated that relatively straightforward suggestions of limited difficulty were more likely to be helpful. In addition, it was reasonable to expect that the extent of her response to therapeutic suggestions would likely be relatively modest.

At the next session, the therapist used a hypnotic induction consisting of suggestions for relaxation, but without any preliminary muscle tensing, and deepening (similar to the induction of the HGSHS:A). To encourage a passive style of attention to breathing, the following passage was included:

If at any time you find yourself noticing your breath, see how beautifully it works *all by itself*. *Just observe* how your breath can work all by itself, and *just leave it alone*. Then let your attention move back to the rest of your body, to release any tension. . . . Your body will effortlessly take care of breathing, as you search elsewhere, for any last bits of tension in any of your muscles.

There were also the following kinds of suggestions:

Your breath knows what to do *all by itself*. You don't need to help it. Your body knows what to do, to breathe free and easy, free, free, and easy. Your body is wise; it knows what to do all by itself. *Just let it do what it does naturally*. You don't need to tell it anything—it already knows what to do.

And later, the following:

Your throat knows what to do to relax. Feel it opening up gently and relaxing. It is opening up, allowing the breath to travel smoothly without any effort. Feel the ease with which you are breathing. The breath is warm and soothing. It is creating a sensation of warmth from your lungs to your throat and to your nose. It is free to wander back and forth, in and out.

The client's breathing, which had been rather poor early in this session, improved markedly during the induction and became almost completely silent. Similar to the progressive muscle relaxation earlier, the hypnotic induction was recorded for the client's use at home. The therapist encouraged the client to use either tape several times per day, as she saw fit.

At later sessions, the client noted that she preferred to use the hypnosis because her mind wandered less during the sessions and the hypnosis seemed more effective in eliciting feelings of calm. She reported that she used the hypnosis tape every morning and evening, which tended to be times when the breathing problems were worse, as well as periodically throughout the day. The therapist introduced a variant of the hypnotic induction by including imagery of a favorite, peaceful place. The client also continued to use the progressive relaxation tape occasionally, for variety.

With improved breathing, the client was able to expand her range of physical activities. For example, she started doing housework (e.g., doing laundry, making beds, mopping floors) again, which she had previously avoided because of her breathing difficulties. However, she complained that she thought she could no longer walk for more than 5 or 10 minutes before her breathing difficulties would force her to stop. To further assess this difficulty, the therapist took the client on a walk outside for part of a session. The client was able to walk and simultaneously hold a conversation for more than 20 minutes without any undue difficulty. The therapist instructed the client to take walks at home while listening to a hypnosis tape on a portable tape player, which was effective.

Both the client's breathing in sessions (e.g., during discussion before any hypnosis) and her reports of physical activity at home improved considerably. However, an additional issue to address was the client's unrealistic expectation that hypnosis should completely eliminate all her breathing difficulties. (To some extent, this expectation stemmed from the client being told previously that her problems were purely psychogenic.) Instead, the therapist described hypnosis as a coping tool to help make better use of the client's automatic breathing, which was quite good, and to circumvent her deliberate regulation of breathing, which was dysfunctional.

Despite the low likelihood of the client's problem being dissociative in origin and the client's modest level of hypnotic suggestibility, this case illustrates the practical use of a dissociated control perspective on hypnosis.

CONCLUSION

The use of the construct of dissociation to explain hypnosis has a history stretching back more than a century. Recent developments in dissociation theories have proposed a specific set of underlying mechanisms. These include alterations in self-monitoring, affecting conscious experience, and alterations in the initiation and ongoing adjustment of cognitive control. Although future research may selectively favor one of these hypothesized mechanisms, it is also possible that hypnosis involves a fluid plurality of dissociative mechanisms, as Hilgard (1992, 1994) suggested.

Dissociation theories imply that hypnosis should be clinically beneficial for altering unpleasant or unwanted aspects of conscious experience and for altering maladaptive mechanisms of control. Because these theories focus on abilities for which there are strong individual differences, they also imply that assessment of clients with standardized hypnosis scales provides important information for tailoring interventions. Finally, dissociation theories provide a useful and informative perspective for the application of hypnosis in clinical therapy, even in the treatment of people with modest hypnotic responsiveness, as our case study illustrated.

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