

# *Hypnosis I: Basic Phenomena, Hypnotic Susceptibility, and Applications*

The history of hypnosis is longer than the history of psychology. Modern hypnosis methods trace their descent from the work of Franz Anton Mesmer, who practiced “animal magnetism” in Paris in the 1770s (Sheehan & Perry 1976). Mesmer thought that his influence over subjects was due to the transmission of some sort of magnetic force between himself and them. The theory of animal magnetism was discredited quite early by the French Commission of 1784, under the direction of the American ambassador, Benjamin Franklin. As a result, *mesmerism* was ridiculed by the medical and scientific community. Yet, the fact remained that Mesmer’s procedures produced some dramatic effects and were sometimes successful in curing or alleviating a variety of physical problems such as rheumatism, pain, skin disease, and convulsive asthma. Because of its demonstrated practical benefits, mesmerism continued to be of interest to a small minority of physicians through the nineteenth century. In 1843 the English physician James Braid coined the term hypnosis (from the Greek *hypnos*, to sleep).

A major theoretical issue was raised in the Nancy-Salpêtrière controversy of the 1880s over whether hypnosis was a neurophysiological phenomenon or a psychological one (Sheehan & Perry 1976). Jean-Martin Charcot, a neurologist at the Salpêtrière Hospital in Paris, claimed that hypnosis is a neurophysiological condition, and that deep hypnosis (then termed “artificial somnambulism”) is found only in hysterics (patients with conditions such as functional paralysis or deafness, where there is nothing physically wrong with the organs in question). Charcot believed that there were several

stages of increasingly deeper hypnosis, each of which required physical induction techniques such as eye fixation, forcing open the patient's closed eyelids, or pressure to the patient's scalp. In contrast, Hippolyte Bernheim, a medical professor at the University of Nancy (France), argued that hypnosis is a purely psychological condition, where hypnotic induction depends on natural responsiveness to suggestions, and the hypnotic state is one of enhanced suggestibility. Ultimately, Bernheim won the argument by showing that hypnosis can be induced by verbal suggestions alone without physical manipulations and that the "somnambulistic" state is not limited to hysteric patients, but can occur in a substantial minority of the normal population (about 15 to 18 percent of his cases). Also, it was found that the "hypnotic" behavior of Charcot's demonstration cases had been influenced by prior coaching by his assistants. Bernheim's influence continues to the present day, where there is a continuing emphasis on psychological suggestion and related concepts of imagination and the feeling of involuntariness in hypnotic responsiveness. (For more on the fascinating history of hypnosis see Ellenberger 1970; Laurence & Perry 1988; and Sheehan & Perry 1976. Also see Edmonston 1986, on hypnotic methods from past to present.)

There were numerous demonstrations of practical applications of hypnosis during the nineteenth century. For example, James Esdaile, an English surgeon working in India from 1845 to 1851, used hypnosis extensively to control pain and bleeding in both minor and major surgery, including normally traumatic operations such as the removal of large tumors of the scrotum (Bowers 1976). However, most physicians continued to be skeptical that the mere words of hypnotic suggestions could work such wonders, and indeed, there were enough failures to support their skepticism. Surgeons wanted a technique that would work with everybody. The discovery of chemical general anesthetics, ether and chloroform, in the mid-1800s was sufficient to cause most surgeons to lose interest in hypnosis. A few doctors continued to use hypnosis for treatment of psychiatric cases. Sigmund Freud, the father of psychoanalysis, used hypnosis for several years in Vienna in the late 1880s to treat hysteric and neurotic symptoms, but he eventually abandoned it in favor of his psychoanalytic techniques such as free-association and dream analysis.

From Mesmer's time to the present day, hypnosis has continued to fascinate the general public, particularly as a result of stage-show demonstrations and fictional treatments—two sources of misinformation as well as information. Hypnosis has gone through several cycles of interest and disinterest in the medical community, but it has never been practiced widely among physicians. Besides their preference for physical interventions (such as drugs and surgery) and skepticism about psychological methods, another reason for skepticism among physicians is the association of hypnosis with stage shows and occult practices, such as seances and spiritualism, and sometimes with fraud. Hypnosis has been condemned both because it doesn't always work and because it sometimes keeps bad company. And while the general public still finds it fascinating, some religious fundamentalists think that hypnosis is the work of the devil.

From the mid-1900s to the present there has been a revival of interest in hypnosis and an increase in its respectability among doctors, psychiatrists,

and psychologists. The American Medical Association and the American Psychological Association recognize clinical hypnosis as a valid type of professional training. The increased respectability of hypnosis is due mainly to modern experimental research on hypnosis, as well as to modern demonstrations of its practical applications, for example, in psychotherapy and in control of pain in cancer patients. Also, the shift in psychology from a behaviorist orientation to a cognitive orientation, with a renewed interest in mental phenomena, provides an intellectual climate for increased interest in and acceptance of hypnosis. There is little doubt that hypnotic methods are effective for treating some types of physical and psychological problems, at least in a minority of patients. But theoretical controversy continues over what is going on in hypnosis.

In this chapter I will consider the basics of hypnosis, including the problem of definition, hypnotic induction, typical hypnotic phenomena, subjective aspects of hypnosis, and how hypnotic responsiveness is measured. I will also discuss research on the personality correlates of individual differences in hypnotizability, and whether hypnotizability can be increased by special training methods. Then I will describe some clinical applications of hypnosis, and finally I will discuss whether hypnosis is dangerous. We will see that hypnosis research has been heavily influenced by theoretical controversies, more so than any other topic in altered states of consciousness.

The traditional theoretical view is that hypnosis is an altered state of consciousness characterized by both alterations of subjective experience and alterations of mental processes of perception, thinking, memory, and control of behavior (Bowers 1976; Orne 1977; Sheehan & Perry 1976; Shor 1962). The term "hypnotic trance" reflects the traditional altered-state view of hypnosis. Hilgard's (1977) neodissociation theory—which explains hypnosis in terms of dissociations or disconnections between an executive control system, conscious monitoring, and cognitive subsystems—is related to the altered-state view of hypnosis. Spanos (1986a) called the altered-state and dissociation views of hypnosis the *special-process view*, since they assume that people's mental processes operate somehow differently during hypnosis than in the normal waking state.

An alternate view, the *social-psychological view* (or social-cognitive view), is supported by many contemporary researchers (Barber 1969; Coe & Sarbin 1977; Lynn, Rhue, & Weekes 1990; Sarbin & Coe 1972; Spanos 1986a; Spanos & Chaves 1989; Wagstaff 1981, 1986). The social-psychological view says that hypnosis is not an altered state of consciousness, but rather it involves normal thinking and behavior processes operating in a somewhat unusual manner in a special social situation. In this view, subjects in a hypnosis situation enter into a special social role (hypnotic subject) and play that role to the best of their ability using various cognitive and behavioral strategies. Good hypnotic subjects try to convince both the hypnotist and themselves that they are good hypnotic subjects, according to their understanding of the subjective and behavioral characteristics of good hypnotic subjects.

Hypnotic phenomena may be described differently, depending on whether a writer subscribes to an altered-state (or special-process) view or a social-psychological view of hypnosis. This presents a problem for a writer who would like to take an unbiased position. In this chapter I will mostly use

the familiar language of the traditional altered-state view of hypnosis. I will also consider the social-psychological view on a number of topics discussed here. In Chapter 15, I will go into more detail on theoretical controversies and research on two particularly important hypnotic phenomena: hypnotic analgesia (pain control) and posthypnotic amnesia. In Chapter 16, I will discuss research on hypnotic age regression and hypnotic hypermnesia (memory enhancement).

## THE DEFINITION OF HYPNOSIS

What is hypnosis? It would be nice to have a simple, objective definition of hypnosis in order to know it when we see it or when we experience it. But defining hypnosis is not easy. There is no simple behavioral criterion for identifying hypnosis, nor do hypnotic inductions reliably produce a hypnotic "state." To make matters worse, all attempts to objectively define hypnosis seem to be contaminated by a theoretical view on the nature of hypnosis.

In view of the problems in getting hypnosis researchers to agree on a definition of hypnosis, Hilgard (1973) suggested that we can at least agree on the "domain" of hypnosis. That is, there is a certain set of phenomena that tends to be of interest to hypnosis researchers, regardless of their theoretical viewpoints. Phenomena in the domain of hypnosis tend to be correlated with each other, that is, they tend to occur together in some individuals, but not others. They include responses to various types of hypnotic suggestions (such as temporary paralyses, hallucinations, and amnesia), responses to certain types of waking suggestions (given without a prior hypnotic induction), as well as some measures of spontaneous alterations of consciousness and capacity for imaginative involvement outside of hypnosis. On the other hand, people who are responsive to suggestions in the domain of hypnosis (sometimes termed "primary suggestions") will not necessarily be responsive to other types of social suggestions, such as those involved in conformity and gullibility (termed "secondary suggestions").

### A Working Definition of Hypnosis

Regardless of earlier definition problems, it will be useful for our purposes to give a working definition of hypnosis: *hypnosis* is a psychological state or condition, induced by a ritualistic procedure, in which the subject experiences changes in perception, thinking, memory and behavior in response to suggestions by the hypnotist (after Orne 1977).

The purpose of this definition is to narrow the domain of hypnosis to those aspects that will be emphasized in this book and which have, in fact, been the focus of most hypnosis research. Several comments on the definition are in order. (1) By "psychological state or condition" I mean that to hypnotized subjects, hypnosis seems to be subjectively different from their normal waking state or condition. I am not taking a strong stand here on the issue of whether hypnosis is an altered state in the sense of altered brain functioning or altered mental processes. (2) The "ritualistic procedure" re-

fers to the *hypnotic induction*. While a variety of specific techniques (to be described later) can be used, they have in common the fact that they identify the situation to the subject as an attempt at hypnosis. Thus, spontaneous alterations of consciousness are excluded from the definition of hypnosis, though they may be in the larger domain of hypnosis. When I refer to “hypnotized” subjects, I mean subjects who have experienced a hypnotic induction followed by subjective and behavioral responses to suggestions. (3) The “changes in perception, thinking, memory and behavior” refer loosely to several types of hypnotic experiences that are characteristic of hypnosis, such as hallucinations, suggested amnesia, and so forth (to be described later in more detail). (4) The phrase “the subject experiences changes . . .” emphasizes the point that the critical aspect of hypnosis is subjects’ conscious experiences, rather than their overt behavior. (5) That the experiences occur “in response to suggestions by the hypnotist” emphasizes two points: First, the characteristic changes in perception, thinking, and so forth occur in response to specific relevant suggestions by the hypnotist, rather than as spontaneous responses to the hypnotic induction alone. Second, I am concerned here with *heterohypnosis*, which involves a social-psychological relationship between the hypnotic subject and another person, the hypnotist, who gives the induction and the suggestions. In contrast, *self-hypnosis* is a situation where the subject provides his or her own induction and suggestions. Self-hypnosis is in the domain of hypnosis, but it is a continuing question as to how similar it really is to heterohypnosis (Fromm et al. 1981; Johnson 1981). (6) This is a quasi-operational definition, in that it implies that the situation involves hypnosis *if* a hypnotic induction is used and *if* the subject experiences the characteristic effects following the hypnotist’s suggestions. The induction alone is not sufficient to define the situation as hypnosis. Cases where subjects respond to suggestions without a prior hypnotic induction are certainly within the domain of hypnosis as defined by Hilgard (1973), but they are not, strictly speaking, cases of hypnosis according to the present definition.

### Suggestion

Up to this point I have been using the term “suggestion” without defining it. Weitzenhoffer (1957) defined *suggestion* as “any communication, verbal or nonverbal, simple or complex, from the suggestor [hypnotist] to the suggestee [subject], aimed at bringing about some experience and behavior at variance with the suggestee’s environment or the behavior he would have otherwise exhibited” (p. 25).

Suggestions can be distinguished from commands or instructions. A command or instruction tells the subject exactly what to do. A suggestion influences the subject’s behavior indirectly, by implication. It induces a response, rather than forcing it. In practice, hypnotic suggestions may begin with instructions or commands to set up the suggestion. And suggestions may employ imagination instructions, with the implication that a certain response may follow. For example, the “hands moving together” suggestion begins with these instructions: “Hold your hands straight out in front, at arms length, about a foot apart, with the palms facing each other.” Then the

hypnotist says, "Now imagine a force between your hands, like a magnet, pulling your hands together." Subjects are not commanded to move their hands together, but it is implied that if they vividly imagine the force, then their hands will move together. Furthermore, Weitzenhoffer (1957, 1978) emphasized the point that in the *classic suggestion effect*, subjects experience their responses (such as hands moving together) as *involuntary* (nonvoluntary) in the sense that they do not involve any conscious volitional command. The response seems to happen by itself, automatically.

Some suggestions sound like commands, for example, response inhibition or "challenge" suggestions ("you will not be able to bend your arm") and posthypnotic amnesia ("you will not be able to remember anything that happened during hypnosis"). Such cases are nonetheless classed as suggestions because they lead to behavior that is contrary to what the subject would ordinarily do, without directly forcing compliance (that is, ordinarily, without the suggestion, the subject would be able to bend the arm or recall what happened during hypnosis).

**A demonstration.** Let's try a demonstration, so you can get a better idea what I mean by suggestion. I often do this in my classes as a demonstration of waking suggestion without a prior hypnotic induction. Perhaps you can do it as a waking autosuggestion (self-suggestion). This is best done while sitting on a straight chair, sitting up straight with both feet on the floor. (If you do this with someone else, read the suggestion slowly, allowing time for the subject to use his or her imagination and respond.)

Hold both hands straight out in front of your body, palms up, both arms straight, elbows straight, at shoulder height. Both hands feel the same. It is easy to hold them up. But soon this will change. Now imagine a heavy object in your left hand. Imagine a brick in your left hand. It weighs five pounds. Feel the weight of the brick. It's hard to hold it up. Your left hand will get very tired, trying to hold up the brick. The brick will tend to push your hand down. Your left hand is getting more and more tired. But your right hand is not tired at all. It just floats there in the air without any effort, as if it were a big helium-filled balloon. It's easy to hold your right hand up. But your left hand is feeling more and more tired and heavy. Feel the weight of the brick as it pushes your left hand down, more and more down . . . .

This is the "differential hand heaviness" suggestion. We can distinguish between objective responses and subjective responses to the suggestion. The *objective response* is your overt, objective response. If somebody else had been watching you, would they have seen that your left hand dropped lower than your right hand? The *subjective response* is your conscious experience during the suggestion. Did it feel like your left hand was heavier or more tired than the right hand (regardless of whether the left dropped lower than the right)? Both objective and subjective responses can vary in degree. As an arbitrary criterion, if your left hand dropped at least two inches below the right, then you objectively passed the item. The objective and subjective responses are highly correlated. Most people who make the objective response also experience the subjective response. But a minority have a subjective response—the left hand feels heavier—without the objective response;

perhaps they made an extra effort to hold up their tired left hand. Also, a minority may make the objective response without feeling the subjective response; perhaps they are faking it by deliberately lowering their left hand. (By the way, it doesn't make any difference whether you imagine the brick in your left hand or your right hand.) You might also try giving yourself a waking autosuggestion for a force pulling your hands toward each other, as in the "hands moving together" item (see Table 14.1).

## HYPNOTIC INDUCTION

There are dozens of different techniques for inducing hypnosis (Edmonston 1986; Weitzenhoffer 1957). In a clinical setting hypnotists can be creative and employ whatever technique they believe will be most effective for a particular subject/client. Experienced subjects may enter hypnosis almost immediately in response to a simple cue. However, slower methods are typically used for the first hypnosis experience. Subjects are usually asked to focus their attention on some object, such as a spot on the ceiling or a swinging medallion or metronome, and to listen only to the hypnotist's voice. Then suggestions for progressively greater relaxation are given, and sometimes hypnosis is characterized in terms of a sleep metaphor ("you are falling asleep").

The fact that hypnosis can be induced by such a wide variety of techniques implies that there is nothing magical about the induction itself. *Hypnotic susceptibility*—the subject's ability to respond to hypnotic suggestions—is more important than either the hypnotist's skill or the nature of the specific induction technique. However, it seems to be important to use some sort of induction ritual, since it identifies the situation as hypnosis, distinguishes between the roles of subject and hypnotist, and generates in the subject certain expectancies about the types of experiences that he or she is likely to have.

For experimental research it is important to use a standardized hypnotic induction. The induction is a controlled variable, in that it is the same for all subjects. Also, it is useful for different experimenters, in different laboratories, to use the same standardized induction in order that their results can be compared.

The induction from the Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C) (Weitzenhoffer & Hilgard 1962) is widely used in hypnosis research. It takes about ten minutes to administer. Subjects begin with their eyes open. The hypnotist asks them to focus their eyes on a "target" (a shiny thumbtack placed high on the wall or on the ceiling). The induction begins with some preliminary banter about the importance of concentrating and wanting to be hypnotized and not resisting, and about there being nothing supernatural or frightening about hypnosis. Then suggestions for relaxing various parts of the body are given, as well as suggestions for feeling heavy and becoming sleepy. Suggestions about feeling sleepy and having heavy eyelids are repeated several times. Hypnotizable subjects usually close their eyes spontaneously within a few minutes, but after a while, if a subject has not already done so, the hypnotist instructs him to go ahead and close his

eyes. Finally a “deepening” suggestion is given, where subjects are told that they will feel more and more deeply “asleep” as the hypnotist counts slowly from one to twenty.

By itself, hypnotic induction does not seem to do anything very interesting. Subjects simply look and feel very relaxed. The most characteristic hypnotic phenomena involve subjects’ responses to specific suggestions that the hypnotist gives following the induction.

## THE MEASUREMENT OF HYPNOTIC SUSCEPTIBILITY

One of the most important facts about hypnosis is that people vary widely in *hypnotic susceptibility* (hypnotic responsiveness or hypnotizability), the ability to respond to hypnotic suggestions. Individual differences in hypnotizability is a major topic of hypnosis research. Researchers have studied possible correlates of hypnotic susceptibility, such as personality and cognitive traits, childhood experiences, interests, and attitudes that relate to hypnotizability. And researchers have asked whether an individual’s level of hypnotizability is a relatively permanent personality trait or a skill that can be improved by special training.

A major boost to modern hypnosis research was the development of reliable and valid standardized techniques for quantitatively measuring hypnotic susceptibility. Particularly important were the Stanford Hypnotic Susceptibility Scales (SHSS forms A, B, and C), developed by Andre Weitzenhoffer and Ernest Hilgard (1959, 1962). In these scales, subjects are first given a standard hypnotic induction, such as the one described above for SHSS:C. Then they are given a series of different suggestion items, with each suggestion being given with the same wording and at the same pace for every subject. Subjects are given a hypnotic susceptibility score according to how many suggestion items they pass. Passing an item means making an overt movement or verbal report of subjective experience that fits the intention of the suggestion and meets standard scoring criteria. The reliability and validity of the Stanford scales have been thoroughly assessed, and norms have been established so that individuals may be classified as high, medium, or low in hypnotic susceptibility (Hilgard 1965).

The major types of suggestions may be classified into three categories: ideomotor actions, response inhibitions (challenge items), and cognitive distortions (such as hallucinations, amnesia). Posthypnotic suggestions form a fourth category that cuts across the other categories in that posthypnotic suggestions may involve either motor or cognitive responses to a prearranged cue. (The types of hypnotic suggestions are discussed in more detail in the next section.)

Table 14.1 lists the items on the Harvard Group Scale of Hypnotic Susceptibility (HGSHS) (Shor & E. Orne 1962). The HGSHS (based on SHSS:A) was designed to be conveniently administered to moderately large groups of people (about twenty to fifty at a time), including people who have not previously experienced hypnosis. Thousands of research subjects, mostly college students, have been tested with HGSHS. The induction and test suggestions are read aloud to the group, or they may be presented by a tape



**TABLE 14.1 Test Items from the Harvard Group Scale of Hypnotic Susceptibility: Form A**

1. Head falling	A waking suggestion item given before the hypnotic induction.
2. Eye closure	In response to suggestions of eyelid heaviness given during the induction.
3. Hand lowering (left hand)	In response to suggestion of hand heaviness, with the image of a weight pulling the hand down.
4. Arm immobilization (right arm)	Inability to lift the arm, in response to suggestion that the arm is very heavy and impossible to lift.
5. Finger lock	Inability to separate the hands, in response to suggestion that the fingers are tightly interlocked.
6. Arm rigidity (left arm)	Inability to bend the arm, in response to suggestion that the arm is stiff like a bar of iron, and cannot be bent.
7. Hands moving together	Outstretched hands moving together, in response to suggestion to imagine a force pulling them toward each other.
8. Communication inhibition	Inability to shake head "no," in response to suggestion that subject cannot do it.
9. Fly hallucination	Movement indicating annoyance at hallucinated fly, in response to suggestion flies are buzzing around the subject's head.
10. Eye catalepsy	Inability to open eyes, in response to suggestion that eyelids are glued shut.
11. Posthypnotic suggestion	Touching left ankle in response to cue given after arousal from hypnosis, following suggestion that subject will do so but will forget that he was told to do so.
12. Posthypnotic amnesia	Inability to recall more than three of the suggestions given since eye closure, in response to suggestion that subject will not be able to remember anything that happened during hypnosis until explicitly told "Now you can remember everything."

recording. Subjects score their own responses from memory after the procedure has been completed. Research has shown that the self-scoring procedure has acceptable accuracy, in comparison with scoring by objective observers.

The most commonly used advanced testing procedure is the Stanford Hypnotic Susceptibility Scale: Form C (SHSS:C) (Weitzenhoffer & Hilgard 1962). It is ordinarily administered to subjects individually, though it has been adapted for use in small groups. Table 14.2 shows the SHSS:C items. Compared to HGSHS, SHSS:C employs more cognitive items (age regression, hypnotic dream, negative hallucination), and thus is a more valid mea-

TABLE 14.2 Test Items from the Stanford Hypnotic Susceptibility Scale: Form C

1. Hand lowering (right hand)	In response to suggestion of hand heaviness, with the image of a weight pulling the hand down.
2. Moving hands apart	Moving outstretched hands apart, in response to suggestion to imagine a force pushing the hands apart.
3. Mosquito hallucination	Movement indicating annoyance at hallucinated mosquito, in response to suggestion that a mosquito is buzzing around and landing on right hand.
4. Taste hallucination	Overt movement, such as lip movement or grimacing, or verbal report of strong taste, in response to either suggested sweet taste or sour taste.
5. Arm rigidity (right arm)	Inability to bend arm in response to suggestion that it is stiff, as if tightly splinted, and cannot be bent.
6. Dream	Report of dream-like experience in response to suggestion to sleep and dream about hypnosis. [Should include vivid visual imagery and spontaneous action.]
7. Age regression	Following suggestion that the subject is growing younger and smaller, and is back in a second-grade classroom, the subject is asked to write his name and shows a clear change in handwriting compared to a sample taken before the regression suggestion.
8. Arm immobilization (left arm)	Inability to lift the arm, in response to suggestion that the arm is very heavy and impossible to lift.
9. Anosmia to ammonia	In response to suggestion that subject will be unable to smell odors, he shows no overt reaction to a small bottle of ammonia held under his nose and does not report smelling ammonia.
10. Hallucinated voice	Overt verbal response to hallucinated questions, in response to suggestion that he will be asked questions over an intercom.
11. Negative visual hallucination	Subject reports seeing only two small boxes on table, in response to suggestion that he will see only two boxes, though there are actually three boxes.
12. Posthypnotic amnesia	Inability to recall more than three of the suggestions given since eye closure, in response to suggestion that subject will not be able to remember anything that happened during hypnosis until explicitly told "Now you can remember everything."

sure of hypnotizability. One reason that HGSHS does not include more cognitive items is that, by their nature, they require more personal communication between the subject and the hypnotist. Also, some cognitive items (especially age regression) occasionally elicit an emotional reaction, and such reactions can be handled more easily in an individual test session than in a group session. On both HGSHS and SHSS:C, a score of 0 to 4 is considered low, 5 to 9 is medium, and 10 to 12 is high. On both scales, scores are distributed approximately normally; that is, most people score in the middle range, with only a minority being classified as high, or low, in hypnotizability.

Several other standard scales have been developed. The Stanford Profile Scales of Hypnotic Susceptibility (SPSHS) (Weitzenhoffer & Hilgard 1967) emphasize more difficult cognitive items; they can distinguish highly hypnotizable versus *very* highly hypnotizable subjects better than the shorter and easier scales such as SHSS, Form A or Form C (Hilgard 1978/1979). The Stanford Hypnotic Clinical Scale for Adults (SHCS: ADULT) (Hilgard & J. Hilgard 1983; Morgan & J. Hilgard 1978/1979a) is designed for a relatively quick hypnotic assessment of clinical patients who may have limited mobility. The Stanford Hypnotic Clinical Scale for Children (SHCS: CHILD) (Morgan & J. Hilgard 1978/1979b) has an induction and test items designed especially for children ages six to sixteen years (with an alternate form for children four to eight years old). The Carleton University Responsiveness to Suggestion Scale (CURSS) (Spanos, Radtke, et al. 1983a) is a group scale that may be administered either with or without a prior hypnotic induction; it includes questions about subjective as well as objective responses to suggestions. (These scales [except CURSS] and others are described in detail in Edmonston 1986.)

## TYPES OF HYPNOTIC SUGGESTIONS

The major types of hypnotic suggestions also serve to define the major hypnotic phenomena.

### Ideomotor Suggestions

In ideomotor suggestions the hypnotist asks subjects to imagine some state of affairs that, if it were true, would cause them to make a particular movement. Subjects pass the item if they make the movement implied by the suggestion. The "hands moving together" item described previously is an example of an ideomotor suggestion.

Ideomotor suggestions are the easiest types of hypnosis items, in that a higher percentage of subjects pass them than other types of items. For example, the four ideomotor items on the HGSHS were passed by an average of 84 percent of the subjects in a sample of 272 students from the University of Maine (Farthing, Brown, and Venturino 1983a). In fact, many people can pass ideomotor items without a prior hypnotic induction.

### Response-inhibition (Challenge) Suggestions

In response-inhibition ("challenge") items the hypnotist first suggests that the subject cannot move some part of his or her body, then the hypnotist challenges the subject to try to move that part. Subjects pass the item if they *do not* move that part of their body. For example, in the arm rigidity item, the hypnotist suggests that the subject's outstretched arm is "stiff, like a bar of iron, and you cannot bend it." Then the hypnotist says, "Now, try to bend the arm. Just try." The subject passes the item if he or she *fails* to bend the arm. Deeply hypnotizable subjects feel that they *cannot* bend the arm, even though they are trying to do so. Challenge items are more difficult than ideomotor items. Five challenge items on the HGSHS were passed by an average of 57 percent of the subjects (Farthing et al. 1983a).

### Cognitive Suggestions

Cognitive suggestions, including changes in perception, thinking, and memory, are particularly important for several reasons. Subjectively they are the most dramatic hypnotic experiences. The most important practical applications of hypnosis involve responses to suggestions for cognitive changes—for example, negative hallucination of pain (hypnotic analgesia). And theoretically, cognitive changes define the essence of hypnosis (Orne 1977). Cognitive items vary widely in difficulty, but most of them are more difficult (lower pass percentage) than challenge items. The major cognitive suggestions will be briefly described here, and research on four of the most important cognitive phenomena (hypnotic analgesia, posthypnotic amnesia, age regression, and hypermnesia) will be discussed in more detail in the next two chapters.

**Positive hallucinations.** In a positive hallucination the subject believes that he or she perceives something when objectively it is not really there. For example, the hypnotist might suggest to the subject that music will be played on a portable cassette player. Then the hypnotist runs a blank tape. The hallucinating subject will "hear" music and be able to name the tune or sing or hum along with it. Or the hypnotist might tell the subject that when he opens his eyes he will see a puppy sitting on the floor. Subsequently, the subject will "see" the puppy and react to it in a friendly or avoidant manner, depending on how he feels about dogs. Although hallucinations are subjective experiences, the hypnotist/experimenter must observe some sort of overt response in order to judge whether the subject experienced a suggested hallucination. For example, on the HGSHS fly hallucination item, subjects are judged to have passed the item if they make some movement of the hand or face (such as a grimace or twitch) that seems to indicate annoyance at a fly buzzing around their head. On the HGSHS, having a vivid, realistic subjective experience of a fly buzzing nearby is strongly correlated with both objectively passing the item by making an overt annoyance response and experiencing that response as automatic rather than voluntary (Farthing et al. 1983a).

Note that there are two aspects to hypnotic hallucinations: (1) a mental image (a quasi-perceptual visual or auditory experience); and (2) the belief

that the mental image is a genuine sensory perception. Some evidence suggests that hypnosis can enhance mental imagery vividness in highly hypnotizable subjects. Also, hypnosis may enhance belief in the reality of the hallucinated object (Naish 1986). A more skeptical view is that during hypnosis some subjects behave *as if* they are hallucinating, although they know that the imagined object is not real (Wagstaff 1981).

**Negative hallucinations.** In a negative hallucination the subject fails to perceive something that really is there and that he or she would ordinarily perceive. For example, in hypnotic deafness the hypnotist suggests “you are going deaf,” and subjects subsequently fail to react to sounds, such as odd noises, taunts, and jokes. When aroused from hypnosis, they deny that they heard anything while they were “deaf.” Yet, electrophysiological recordings of muscle-potential responses to noises show that subjects are not really deaf during hypnotic deafness (Malmo, Boag, & Raginsky 1954). Also, subjects show the usual disruptions of speech fluency during delayed auditory feedback (Barber 1969; Barber & Calverley 1964). What is going on here? One interpretation is that following the deafness suggestion, the hypnotized subjects’ attention is turned profoundly inward, so they do not notice external sounds. An alternative, skeptical view is that they hear the sounds, but *behave as if* they do not hear (Wagstaff 1981).

In a suggestion for selective blindness, the negative chair hallucination, the hypnotist suggests that a particular chair has been removed from the room—although it has not really been removed. The subject subsequently fails to mention the chair when describing the contents of the room and denies that the chair is present. It appears that the subject does not see the chair. The skeptical view is that the subject really sees the chair, but behaves as if he does not see it. Paradoxically, while walking across the room the subject may walk around the chair to avoid bumping into it. What is going on here? According to Martin Orne (1959), avoiding the chair is an example of *trance logic*, where good hypnotic subjects may accept two contradictory beliefs without the usual feeling of cognitive conflict. (Trance logic will be discussed in Chapter 16.)

One of the most important practical applications of hypnosis is for pain reduction. Hypnotic analgesia is a type of negative hallucination, in that a normally painful stimulus is not felt to be painful or is perceived as less painful than normal. Because of its importance, I will discuss hypnotic analgesia in detail in the next chapter.

**Age regression.** Age regression is often the most dramatic hypnotic experience for the hypnotic subject, as well as for the audience at public demonstrations of hypnosis. In an age-regression suggestion, the hypnotist tells the subject that he or she is becoming younger and smaller and going back to some earlier time in life, such as first grade. Good hypnotic subjects have a subjective experience of feeling much younger and smaller. They may have vivid mental images of past experiences, such as sitting in the classroom and seeing where each of the other children was sitting, or seeing children playing on the playground. Subjects’ overt behavior may also change. Their voices may sound different. When asked to write their names they may spon-

taneously switch to printing in a childlike way. In good age regressions, subjects are more likely to speak in the present tense than in the past tense. For example, a subject might say "I *am* on the playground playing marbles with Jimmy and Johnny," rather than "I *was* on the playground. . . ."

What is going on here? Are age-regressed subjects really mentally younger in the sense of having the knowledge and mental abilities of a child? Are they emotionally younger? Are their vivid images really accurate recollections of scenes from childhood? One interpretation is that age regression is a vivid hallucination of being young again, in another time and place (Orne 1951). Alternatively, apparent age regression may be a strategic role enactment. (In Chapter 16 I will discuss age regression, along with the related issue of hypermnnesia—whether hypnotized subjects really have a greater-than-normal ability to recall personal past experiences.)

**Hypnotic dreams.** In hypnotic dream suggestions the hypnotist usually suggests that subjects dream about a particular topic. For example, the hypnotist might say, "Now you are going to go to sleep and dream about what being hypnotized means to you." Then subjects are allowed a few minutes of peace and quiet during which to dream. Finally, the hypnotist asks them to describe their dream in as much detail as possible. Subjects are judged to have had a hypnotic dream if they report a mental experience characterized by vivid mental imagery with spontaneous action (that is, the dream events occur spontaneously, without deliberate control by the subject).

Hypnotic dreams are not the same as sleep dreams. Brain-wave recordings show that subjects are not in a sleep state during hypnotic dreaming. Furthermore, hypnotizable subjects usually report that their hypnotic dreams are not as vivid as their sleep dreams, although their hypnotic dreams are more vivid than their typical daydreams.

Surprisingly, the contents of hypnotic dreams often have no obvious relationship to the suggested dream topic. From a psychoanalytic perspective, the manifest or surface content of a hypnotic dream may be only a symbolic expression of latent content (Fisher 1953). On the other hand, Tart (1964) found that, following hypnotic suggestions to have sleep dreams on a particular topic, subsequent sleep dreams often had contents that were obviously related to the suggested topic. Barrett (1979) found that when no specific dream topic was suggested, hypnotizable subjects had hypnotic dreams that were more similar to their night dreams than to their daydreams in aspects such as length, emotional theme, and amount of distortion.

**Posthypnotic amnesia.** There are two types of posthypnotic amnesia: *suggested* amnesia, which is common among highly hypnotizable subjects, and *spontaneous* amnesia, which is rare. "Posthypnotic amnesia" always refers to suggested amnesia, unless specified otherwise.

In the posthypnotic amnesia suggestion, prior to arousing subjects from hypnosis the hypnotist says, "You will not be able to recall anything that happened during hypnosis. You won't remember anything until I say to you 'Now you can remember everything.'" When subsequently asked to report everything that happened during hypnosis, highly hypnotizable sub-

jects report little or nothing about the suggestions or what they did during hypnosis. Low hypnotizables, on the other hand, report most of the suggestions and their responses. The degree of apparent amnesia varies among subjects. In some cases, subjects may report "I did something with my hands," but they cannot recall the details.

One of the most important facts about suggested amnesia is its *reversibility* (Kihlstrom & Evans 1976). After the hypnotist gives the *reversal cue* by saying "Now you can remember everything," most high hypnotizables report some additional items not previously reported. Reversibility is important because it shows that the previous recall failure was due to a temporary inability to retrieve information stored in memory, rather than to failure to store it in memory (Kihlstrom & Register 1984).

*Spontaneous amnesia*, which is rare, occurs when the subject cannot recall what happened during hypnosis even though the hypnotist had not given a suggestion for posthypnotic amnesia. Hilgard (1965) argued that spontaneous amnesia is the result of a self-suggestion for amnesia, due to the subject's prior belief that he or she would be unable to recall what happened during hypnosis.

Suggested posthypnotic amnesia has great theoretical importance, because its occurrence is one of the best ways of distinguishing between highly hypnotizable and less hypnotizable subjects, and because the process by which it occurs may underlie a number of other hypnotic phenomena. For that reason, I will discuss suggested amnesia in more detail in the next chapter. We will see that there is a controversy over whether apparent amnesia is due to an *inability* to retrieve hypnotic experiences or an *unwillingness* to retrieve or report them.

### Posthypnotic Suggestions

In posthypnotic suggestions the hypnotist suggests to subjects that after they have been aroused from hypnosis they will perform certain acts, or have certain subjective experiences, in response to specified cues. Further, the hypnotist suggests amnesia for the posthypnotic suggestion and that responses to the cue will occur automatically. For example, the hypnotist might suggest that upon hearing a tapping noise the subject will feel an irrepressible need to cough or clear his throat or that upon hearing the word "experiment" the subject will rub his nose (Hilgard 1965).

Posthypnotic suggestions are particularly important for practical applications of hypnosis, since they enable responsive subjects to modify their experience or behavior without having to be "hypnotized" all day. For example, posthypnotic suggestions can be used to reduce chronic pain or to aid in controlling maladaptive habits such as smoking or overeating. Subjects may perform self-hypnosis in the morning and give themselves posthypnotic suggestions to help deal with their problems during the day (Sacerdote 1981).

The question most often asked about posthypnotic suggestions is how long they last. They may last for several minutes or hours (rarely for several days). How long they are effective depends on several factors, including: (1) the hypnotizability of the subject (the higher the better); (2) the complexity of the response (the simpler the better); (3) the setting in which the response

occurs (better in the original clinical or experimental setting); and (4) the subject's awareness that there is something incongruous or unusual about making the response in the current setting (the less awareness the better) (Hilgard 1965). Spanos, Menary, et al. (1987b) found that posthypnotic responses occurred much less often when given by the hypnotist outside of the original experimental context than in the original context, and that responses never occurred when the cue was given by someone other than the hypnotist.

## THE SUBJECTIVE EXPERIENCE OF HYPNOSIS

Following hypnosis, subjects may be asked to make introspective verbal reports about their subjective experiences during hypnosis. Low-to-medium hypnotizables usually say simply that they felt relaxed or sleepy. Reports by high hypnotizables vary widely. The variety of descriptions reflects not only subjects' different subjective experiences, but also their selection of different aspects of their experiences for emphasis, and their use of different metaphors to describe their experiences. Here are examples of subjective reports from some of Hilgard's (1965, p. 13) highly hypnotizable subjects:

"Hypnosis is just *one thing* going on, like a thread . . . focusing on a single thread of one's existence. . . ."

"My thoughts were an echo of what you were saying. . . ."

"Your voice came in my ear and *filled* my head."

"When I felt deepest, I was down in the bottom of a dark hole. I turned over and over on the way down. Now and then I would float up toward the top of the hole. . . ."

"I felt like my eyes were turned around and I could see inside myself . . . as though my eyes and head were not part of my body but suspended on the ceiling. I was completely unaware of any other part of my body."

"I felt as though I were 'inside' myself; none of my body was touching anything. . . ."

"I was very much aware of the split in my consciousness. One part of me was analytic and listening to you. The other part was feeling the things that the analytic part decided I should have." [The feeling of split consciousness is fairly common, and I will return to it and its implications later.]

It is difficult to draw any firm conclusions about typical hypnotic experiences from such varied descriptions. However, they can provide the basis for developing questionnaires with which to find out the relative frequencies of different types of subjective experiences during hypnosis. Table 14.3 shows the percent of subjects who responded affirmatively to various items on a questionnaire on subjective experiences. In general, the higher the level of hypnotic susceptibility, the more subjects who reported having had these types of experience. However, none of the experiences was universal, even among highly hypnotizable subjects. Thus, there is no single subjective criterion identifying the hypnotic state, just as there is no single objective behavioral criterion.



**TABLE 14.3 Subjective Reports by Subjects Varying in Measured Hypnotic Susceptibility Based on an Inquiry Following Attempted Hypnosis**

INQUIRY	AFFIRMATIVE REPLIES TO INQUIRY (BY PERCENTAGE)			
	HIGH (N = 48)	MEDIUM (N = 49)	LOW (N = 45)	NONSUSCEPTIBLE (N = 17)
Were you able to tell when you were hypnotized?	65	60	47	31
Disinclination to speak?	89	79	68	31
Disinclination to move?	87	77	64	50
Disinclination to think?	55	48	32	12
Feeling of compulsion?	48	52	20	6
Changes in size or appearance of parts of your body?	46	40	26	0
Feeling of floating?	43	42	25	12
Feeling of blacking out?	28	19	7	6
Feeling of dizziness?	19	31	14	0
Feeling of spinning?	7	17	0	6
One or more of prior four feelings?	60	60	39	25
Any similarity to sleep?	80	77	68	50

From Hilgard, E. R. (1965). *Hypnotic Susceptibility*. New York: Harcourt. By permission of the author.

The disinclination of hypnotized subjects to speak, move, or think for themselves indicates a general feeling of passivity. Although subjects usually report that their responses to suggestions were nonvoluntary or automatic, Hilgard's data showed no consistent feeling of compulsion or coercion to respond. As one of Hilgard's subjects put it: "I didn't feel that I had to, but I felt I might as well do it" (Hilgard 1965, p. 12). The reports of changes in perceived body size or appearance, floating, and so on, can be interpreted as aspects of a trance state involving a loss of "general reality orientation" (Shor 1959).

Some 65 percent of high hypnotizables reported that they were able to tell when they were hypnotized. Perhaps a higher percentage felt that their state of consciousness was somehow different from normal but could not tell with certainty whether they were hypnotized because they didn't know exactly what it feels like to be in a hypnotic trance. In fact, studies indicate that being in a trance is not an all-or-nothing matter; rather, it is a matter of degree.

### Trance Depth

It is important to distinguish between the concepts of *hypnotic susceptibility* and *hypnotic depth*. Hypnotic susceptibility is a measure of a person's overall degree of responsiveness to hypnotic suggestions under standardized conditions. Hypnotic depth, on the other hand, has to do with the degree of

"profundity" of the subjective hypnotic experience, which can vary from moment to moment within a hypnosis session (Tart 1970).

Tart (1979) developed scales to quantitatively measure hypnotic depth. Such scales are based on the assumptions that "[1] there are dimensions of depth or profundity of the hypnotic state, [2] that a given subject may move along such dimensions from time to time, and [3] that there are experiential correlates of position on each dimension that the subject can consciously perceive or unconsciously react to and report" (Tart 1970, p. 120).

These assumptions seem to be justified by Tart's research showing that subjects can reliably rate their hypnotic depth on a numeric scale, and that these ratings relate meaningfully to other measures of hypnotic behavior and experience. In one study (Tart 1970) subjects were instructed to call out a number from zero to ten whenever they heard the hypnotist say "state?". They were told that "zero" means wide awake, "one" means a borderline state, "two" means lightly hypnotized, "five" means deeply hypnotized, and "ten" means very deeply hypnotized. Subjects were asked for depth (state) reports several times during an administration of SHSS:C, once before each of the test suggestions. There was a high correlation (+0.74) between mean state ratings and hypnotic susceptibility scores. Though depth ratings varied from time to time within the session for individual subjects, the average depth ratings were higher, the higher the subject's hypnotic susceptibility. (Mean depth ratings were 5.0, 2.5, and 1.2 for subjects scoring high, medium, or low, respectively, on SHSS:C.)

Conceivably, the high correlation between mean depth ratings and susceptibility scores was a result of subjects' momentary depth ratings being influenced by their overt responses to the immediately preceding suggestions. That is, perhaps they rated their state as deeper if they had responded to the preceding suggestion (such as arm rigidity, hallucination) than if they had not responded. A more valid measure of the *prediction* of hypnotic susceptibility from depth ratings is the correlation between the *first* depth report—the one obtained immediately after the induction—and the susceptibility score obtained from subsequent suggestions. Tart (1970) found this correlation to be moderately high (+0.56), which indicates that while hypnotic depth and behavioral hypnotic responsiveness (susceptibility) are related, they are not simply alternative measures of the same thing. Hypnotic susceptibility is a relatively enduring characteristic of the individual, whereas hypnotic depth (state) is a momentary subjective feeling.

What sorts of subjective experiences do subjects use to judge their hypnotic depth? Tart's (1970) subjects reported using the following criteria: "(a) intensity of reaction to previous suggestibility test item, 21 percent [of the cases] (b) feelings of drowsiness, 20 percent; (c) fading of the environment, 14 percent; (d) changes in body image or perceived body position, 12 percent; (e) relaxation, 11 percent; and (f) feelings of compulsiveness of responses, 11 percent. If categories (d) and (e) are combined with several other infrequent categories under the general category of bodily changes, 32 percent of the reports are accounted for" (p. 115).

Tart's results suggest that there is some validity to the idea of hypnotic depth, though it is still a poorly understood concept. Subjects apparently find it meaningful to quantitatively rate their hypnotic depth. The fact that

hypnotic depth and hypnotic suggestibility (that is, behavioral responsiveness) are only moderately correlated indicates that on some occasions one could feel deeply hypnotized but be unresponsive to suggestions, or vice versa.

Some researchers have argued, however, that the concept of trance depth as a single, linear dimension is an oversimplification of the complexity of subjective hypnotic experiences (Laurence & Nadon 1986). For example, Ronald Shor (1959, 1962, 1979) argued that there are three dimensions of hypnotic depth: (1) trance depth, concerning shifts of attention and loss of "reality orientation"; (2) depth of hypnotic role taking, where responses are experienced as nonvoluntary; and (3) depth of "archaic involvement," concerning subjects' perceptions of the interpersonal relationship between themselves and the hypnotist (as in the transference effect in psychotherapy).

An alternative view is that the whole idea of hypnotic depth ratings is misleading. According to a social-psychological interpretation, hypnotic depth ratings are not simply ratings of directly felt subjective experiences. Rather, they result from an attribution process, where subjects try to infer their "depth" according to the context, their overt responses to suggestions, and the nature of the questions asked about their subjective experiences (Radtke & Spanos 1981). The importance of context was shown in a study in which subjects rated themselves as more deeply hypnotized following instructions identified as a hypnotic induction than following identical instructions not identified as a hypnotic induction (Spanos, Radtke-Bodorik, & Stam 1980).

The importance of wording of questions was shown in a study in which, following a standard hypnotic susceptibility test (CURSS), different groups were given different types of questionnaires over their experiences. When given the choice between describing themselves as hypnotized versus alternative descriptions (such as "absorbed but not hypnotized"), fewer subjects described themselves as hypnotized, compared to a questionnaire where they could describe themselves only on a single dimension of hypnotic depth; the difference was greatest for medium-hypnotizable subjects (Radtke & Spanos, 1982). On the other hand, another study found that most highly hypnotizable subjects chose to describe themselves as moderately-to-deeply hypnotized even when given the opportunity to describe their experience in other ways (Laurence & Nadon 1986). Thus, it appears that most highly hypnotizable subjects can identify a subjective hypnotic state.

### **Involuntariness of Responses**

Traditionally it has been assumed that true hypnotic responses are experienced by subjects as involuntary, in the sense of occurring without a feeling of volitional command (Weitzenhoffer 1978). If subjects vividly imagine the state of affairs suggested by the hypnotist, then the implied overt response should seem to happen by itself, automatically. For example, consider the "hands moving together" suggestion (see Table 14.1). In a true hypnotic response, you would feel a force between your hands, your hands would gradually move together, and it would feel as if your hands moved

because of the imagined force. Alternatively, if you deliberately moved your hands together, then you would be making the correct objective response but without the implied feeling of involuntariness; in that case you would be faking it. Similarly, in a posthypnotic amnesia suggestion, a true hypnotic response would involve not only failing to report the test items, but also a feeling that you are unable to recall them.

Weitzenhoffer (1978) criticized the commonly used hypnotic susceptibility scales because they fail to ask subjects whether they experienced their responses as involuntary (automatic) or as voluntary. Although Weitzenhoffer's complaint may be valid from a theoretical viewpoint, research shows that as a practical matter it is usually not very important to formally assess the involuntariness of responses. In a large majority of cases, correct objective responses are in fact accompanied by a feeling of involuntariness (K. Bowers 1981; P. Bowers, Laurence, & Hart 1988.) For example, Farthing et al. (1983a) found that in a large sample ( $n = 272$ ) tested on HGSHS, when subjects objectively passed ideomotor and challenge items, they experienced their responses as mostly or fully automatic in 77 percent of the cases, and in only 9 percent did they experience their responses as fully deliberate or voluntary.

When subjects experience their overt responses to suggestions as deliberate or voluntary, it seems that they are faking their responses. Most hypnotic responses could be faked if subjects wanted to do so, but it appears that faking is rare. Nonetheless, as we will see, the fact that faking can occur has important implications for hypnosis theories. One of the problems of hypnosis research is to determine the validity of both overt responses and subjective reports.

The feeling of involuntariness of hypnotic responses is consistent with theories that view hypnosis as an altered state of consciousness. At a minimum, subjective experience is different from normal, if subjects feel that their responses are involuntary when they are the same type of responses that normally are experienced as voluntary. A stronger position is Hilgard's (1977) neodissociation theory. Hilgard said that "one of the most striking features of hypnosis is the loss of control over actions normally voluntary" (p. 115). He interpreted the feeling of involuntariness as an actual loss of control and explained it in terms of a temporary dissociation or disconnection of response subsystems from the conscious executive control system.

Theorists taking the social-psychological viewpoint have questioned the validity of the concept of involuntariness of hypnotic responses. Lynn, Rhue, and Weekes (1990) pointed out some senses in which hypnotic responses are not involuntary or automatic. (1) Hypnotic responses do not happen against the subject's will. Rather, subjects allow them to happen and use cognitive strategies to actively encourage them. Subjects can resist responding to hypnotic suggestions. (2) Hypnotic responses have the volitional response characteristic of purposiveness. Hypnotizable subjects use cognitive strategies—such as goal-directed fantasies and redirection of attention—to make the responses happen. When overt responses to suggestions occur while cognitive strategies are being used, subjects tend to interpret the responses as involuntary (Spanos, Rivers, & Ross 1977). (3) Hypnotic responses do not occur automatically in the sense of occurring without mental

effort or the use of limited attentional capacity. Many subjects put considerable mental effort into using cognitive strategies to make the responses happen. (4) Hypnotic responses are not automatic in the sense of occurring non-consciously; subjects ordinarily are consciously aware of their overt responses.

In essence, the social-psychological approach says that good hypnotic subjects desire to convince both the hypnotist and themselves that they are good hypnotic subjects (Spanos 1982, 1986a). They may delude themselves into thinking that their hypnotic responses are involuntary, when in fact their responses have many of the characteristics of voluntary responses. A minority of subjects may deliberately fake overt responses to suggestions, but more commonly subjects use cognitive strategies that encourage the responses to occur, and they subsequently experience or interpret their responses as involuntary. In conclusion, there is only one sense in which many hypnotic responses are involuntary, namely, that subjects do not feel that they have directly willed or commanded the responses to occur. (The term "involuntary" has unfortunate, inappropriate connotations; "nonvoluntary" would be a better term.) We will pursue the controversy between dissociation theory and the social psychological approach further in the next chapter. For now, I want to mention the fact that among highly hypnotizable subjects, different subjects operate with different cognitive styles, some being more active and some being more passive (Sheehan & McConkey 1982). The social-psychological interpretation of hypnotic responses may apply to many hypnotizable subjects, but not necessarily to all of them.

## CORRELATES OF HYPNOTIC SUSCEPTIBILITY

As I mentioned earlier, one of the most important facts about hypnosis is that there are wide individual differences in hypnotic susceptibility. Furthermore, hypnotic susceptibility scores tend to be remarkably stable over time. In a longitudinal study, fifty former Stanford University students were retested on SHSS:A at ten years, and again at twenty-five years, after their original susceptibility tests; moderately high correlations were found between the later scores and the original score (+0.64 and 0.71, respectively) (Morgan, Johnson, & Hilgard 1974; Piccione, Hilgard, & Zimbardo 1989). These results suggest that hypnotic susceptibility is a relatively stable personality trait. In a later section, I will discuss the alternative viewpoint that hypnotic responsiveness is a skill that can be learned through special training. For now, however, let us assume that hypnotizability is a relatively stable personality trait and ask about its correlates. That is, are there nonhypnotic personality and cognitive characteristics that distinguish between people of high, medium, or low hypnotizability? This question is important both for understanding why some people are more hypnotizable than others and for understanding the basic nature of hypnosis.

Three different methods have been used in research on the correlates of hypnotic susceptibility: (1) administering paper-and-pencil tests of personality and cognitive traits to relatively large groups of unselected subjects;

(2) intensive interviews of selected subjects about their attitudes, beliefs, interests and experiences; and (3) testing groups of high, medium, and low hypnotizables on laboratory measures of cognitive performance.

In the early 1960s, during the first few years following the publication of the Stanford scales, there were several studies that attempted to find relationships between hypnotic susceptibility and measures of major personality trait variables such as introversion-extraversion and stability-neuroticism, as well as others such as hysteria and perceived locus-of-control (that is, internal versus external control) (Bowers 1976; Hilgard 1965). The results of these studies were disappointing. The correlations were usually insignificant, and occasional moderately high correlations could not be replicated from one study to the next. In addition, hypnotic susceptibility is unrelated to measures of social responsiveness, such as social acquiescence, conformity, or gullibility (Bowers 1976). Thus, traditional personality-trait measures appear to be unrelated to hypnotizability. However, in more recent research some personality traits have been discovered that correlate fairly consistently with hypnotizability.

### **J. Hilgard's Interview Studies of Personality and Hypnotizability**

Josephine Hilgard (1970) discovered personality correlates of hypnotizability by conducting extensive clinical interviews with subjects. She interviewed subjects *before* measuring their hypnotic susceptibility in order to avoid having the interviews being influenced by expectations—either the interviewer's or the subject's—arising from knowing the subject's hypnotizability level. The interview data were used to rate the subjects on a number of scales concerned with activities, imaginative involvements, attitudes, family interactions, and childhood experiences that might conceivably be related to their hypnotizability level.

J. Hilgard found that highly hypnotizable subjects almost always had at least one "pathway" to hypnotizability involving a high degree of imaginative involvement, usually one that had developed during childhood and been continued through to adulthood. The various pathways included high degrees of involvement in: (1) fictional reading (to the point of identifying with the characters and responding emotionally to their experiences); (2) the dramatic arts (identifying with the characters, either as an actor or a viewer); (3) religion (as a true believer, not just a churchgoer); (4) affective arousal through sensory stimulation (either through music or through aesthetic appreciation of nature); (5) adventuresomeness (including mental and physical space traveling); and (6) artistic creativity (such as painting, poetry, or music). Also, (7) having had imaginary companions in childhood was related to hypnotizability. People low in hypnotizability were less likely than high hypnotizables to have these pathways. Surprisingly, people with two or more pathways were no more likely to be highly hypnotizable than were those with only one pathway. Two interests, participation in competitive team sports and majoring in the natural sciences, were negatively related to hypnotizability. J. Hilgard concluded:

The statistical data and the case reports have given consistent support to the relationship between imaginative involvement and hypnotic susceptibility. While the correlations are low, indicating that more is involved, the spontaneous assertions of the subjects leave little doubt that hypnosis capitalizes on features of past experience that have permitted the free play of imagination, the setting aside of reality, and the immersion in an experience that to the subject is absorbing and satisfying (1970, p. 169).

The earlier results were confirmed in a later study (J. Hilgard 1974a), in which subjects preselected for high hypnotizability were found to be more likely than lows to have a high degree of involvement in one or more imaginative activities (see Table 14.4). However, some of the lows were highly involved in imaginative activities. Why were these people not highly hypnotizable? Based on interview data, Hilgard (1974a) suggested three factors that might prevent imaginatively involved persons from becoming hypnotized: (1) apprehensiveness over new and different experiences; (2) unwillingness to accept the hypnotist-subject relationship; and (3) attentional distractibility, which may be compatible with some of the imaginative involvements but which interferes with hypnosis.

#### Absorption and Mental Imagery Vividness

J. Hilgard's conclusions relating imaginative involvement to hypnotic susceptibility are important, but her clinical interview method takes too much time to use in studies with large numbers of subjects. Tellegen and Atkinson (1974) developed an easily administered questionnaire, the Absorption Scale, using items designed to reflect J. Hilgard's findings on imaginative involvement, as well as those of other researchers concerning hyp-

**TABLE 14.4** Areas of High Involvement in Samples of High- and Low-Hypnotizable Subjects

INVOLVEMENT AREAS	PERCENT OF SUBJECTS WITH HIGH INVOLVEMENT*	
	HIGH HYPNOTIZABLE (N = 42)	LOW HYPNOTIZABLE (N = 15)
Savoring of sensory experiences	93	20
Drama	79	20
Reading	76	13
Daydreams—child	74	13
Daydreams—adult	36	7
Mental space travelers	45	0
Physical space travelers	33	0
Creativity	26	13
Religion	19	13

\*High involvement was defined as a rating of 6 or 7 on a 7-point scale.

From Hilgard, J. R. (1974a). Imaginative involvement: Some characteristics of the highly hypnotizable and the non-hypnotizable. *International Journal of Clinical and Experimental Hypnosis*, 22, 138–56. Copyright 1974 by the Society for Clinical and Experimental Hypnosis.

notic-like experiences occurring in daily life (Ås 1963; Shor 1960). Table 14.5 shows some representative items from the Absorption Scale.

Tellegen and Atkinson found significant positive correlations between the Absorption Scale and hypnotic susceptibility in two large samples of subjects. This correlation has been replicated in numerous studies.<sup>1</sup> The correlations are typically modest, about +0.3 to 0.4, but it is noteworthy that of all of the personality scales that have been tried, the Absorption Scale is the one that relates most consistently to hypnotizability in study after study (for example, Farthing, Venturino, & Brown 1983b; Spanos & McPeake 1975). The Absorption Scale apparently taps an aspect of personality that is uniquely related to hypnotic susceptibility and is independent of a number of other personality dimensions (O'Grady 1980).

What is *absorption*? Tellegen and Atkinson (1974) interpreted it as a "cognitive-motivational trait" involving the capacity for total attentional involvement:

Absorption is interpreted as a disposition for having episodes of "total" attention that fully engage one's representational (i.e. perceptual, enactive, imaginative, and ideational) resources . . . to a unified representation of the attentional object. . . . This kind of attentional functioning is believed to result in a heightened sense of the reality of the attentional object, imperviousness to distracting events, and an altered sense of reality in general, including an empathically altered sense of self (pp. 268, 274).

In view of J. Hilgard's (1970) emphasis on the importance of imaginative involvements, you might expect that the vividness or lifelikeness of one's mental images would be related to hypnotic susceptibility. Such a result has been found in several studies (Sheehan 1979). In such studies, subjects are asked to imagine a number of different scenes as vividly as possible. For example, "Picture a landscape with a lake, trees, and a mountain." After a few

**TABLE 14.5** Representative Items from the Absorption Scale

- 
- "While acting in a play, I have sometimes really felt the emotions of the character and have 'become' him (her) for the time being, forgetting, as it were, both myself and the audience."
  - "I can sometimes recollect certain past experiences in my life with such clarity and vividness that it is like living them over again, or almost so."
  - "If I wish, I can imagine (or daydream) some things so vividly that they hold my attention in the way a good movie or story does."
  - "I am sometimes able to forget about my present self and get absorbed in a fantasy that I am someone else."
  - "If I wish, I can imagine that my body is so heavy that I could not move it if I wanted to."
  - "I enjoy—or would enjoy—getting beyond the world of logic and reason to experience something new and different."
- 

From Tellegen, A., & Atkinson, G. (1974). Openness to absorbing and self-altering experiences ("absorption"), a trait related to hypnotic susceptibility. *Journal of Abnormal Psychology*, 83, 268-77.



seconds, the experimenter says "Rate!," and subjects then rate the vividness of their mental image (on a 1 to 7 scale).

Sutcliffe, Perry, and Sheehan (1970) found a positive correlation between hypnotic susceptibility and vividness scores on a questionnaire that included items for several sensory modes (vision, hearing, touch). But most studies have used only visual imagery items, as in the Vividness of Visual Imagery Questionnaire (VVIQ) (Marks 1973). Several studies have found significant modest correlations (+0.3 to 0.4) between hypnotic suggestibility and VVIQ vividness scores (P. Bowers 1978; Crawford 1982a). However, some studies found no significant correlation. It seems that, though vividness and absorption scores are correlated with each other (Crawford 1982a), absorption is more reliable than imagery vividness as a predictor of hypnotizability.

Why are correlations between absorption and imagery vividness scores and hypnotic susceptibility scores only modest, at best? Why aren't the correlations higher? There are several reasons: (1) Hypnotizability depends on a number of other factors besides the absorption and imagery vividness traits. (2) Absorption and vividness questionnaires may not accurately measure what they are supposed to measure. For example, when rating their image vividness on a 1 to 7 scale, different subjects may use different subjective criteria for ratings of 2, 5, and so on. (3) The relationship between hypnotizability and a second variable (such as vividness) may depend on a third variable, called a *moderator variable* (Bowers 1976). For example, in order for high-vividness subjects to be highly hypnotizable, it may also be necessary for them to have a positive attitude about hypnosis and/or a belief that they are capable of experiencing hypnosis. (4) The correlates of hypnotic responsiveness may be different for different types of hypnotic test items. Farthing et al. (1983b) found that a multiple correlation combining absorption and visual imagery vividness scores predicted scores on HGSHS cognitive items better than it predicted scores on ideomotor or challenge items. This result makes sense if cognitive items represent the essence of hypnosis better than ideomotor or challenge items (Orne 1977). (5) The correlates of hypnotizability may be different for subjects with different cognitive styles (such as active or passive) during hypnosis (Sheehan & McConkey 1982).

### Other Correlates of Hypnotizability

A variety of other measures of personality, cognitive performance, and experience have been found to correlate significantly with hypnotic susceptibility (Bowers 1976; Crawford 1982b). I can list only a few examples here. Note that, as with absorption and mental imagery vividness measures, the correlates refer to measures taken in the waking state, not during hypnosis.

Several studies have found positive correlations between hypnotizability and measures of creativity (review in P. Bowers & K. Bowers 1979). Patricia Bowers (1978, 1979) suggested that this relationship is mediated by a capacity for nonvolitional or "effortless experiencing" in a variety of imagination tasks, including creative writing, creative problem solving, and hypnosis. She devised a measure of effortless experiencing and demon-

strated its correlation with creativity and hypnotizability measures. Helen Crawford (1982a) found hypnotizability to be correlated with daydreaming styles, with high hypnotizables having more vividness, positive affect, and absorption in daydreams. Wilson and Barber (1978) devised the *Creative Imagination Scale* (CIS) and showed its correlations with hypnotizability and other measures of imagination and creativity. Wilson and Barber (1983) also identified a "fantasy prone personality," which includes a small proportion (perhaps 4 percent) of people who are not only highly hypnotizable, but are also characterized by having rich daydreaming fantasy lives, ability to hallucinate (for example, having sexual fantasies leading to orgasm, without physical stimulation), deep absorption in media fantasy (such as TV) along with physiological emotional reactions, occasional out-of-body experiences, and occasional inability to distinguish fantasy from reality. In a large-scale study, Lynn and Rhue (1988) confirmed that highly fantasy-prone individuals tend to be high in hypnotizability and waking suggestibility, though there were some exceptions.

Hypnotizability is related to some measures of perception. Crawford (1981) found that high hypnotizables did better than lows on Gestalt closure tasks, where subjects attempted to identify objects whose outlines have been partly obliterated. Wallace, Knight, and Garrett (1976) found that high hypnotizables were more likely than lows to experience visual illusions and frequent reversals in ambiguous figures (such as the Necker cube). In a visual signal detection task, Farthing, Brown, and Venturino (1982) found a greater positive response bias in highs than lows; that is, highs were more likely to say "yes" when they were uncertain whether they saw the signal. An alternative interpretation is that highs sometimes hallucinated the signal. In contrast to self-report measures of attention (such as the Absorption Scale), it has been hard to find differences between highs and lows on objective measures of selective attention performance (Stava & Jaffa 1988). For example, Venturino (1983) found no differences between highs and lows in the accuracy of performance on a shadowing task, where different strings of unrelated words were presented dichotically (one in each ear) and subjects had to repeat one string word for word.

Crawford (1989) suggested that highly hypnotizable subjects have greater cognitive flexibility than low hypnotizables. "*Cognitive flexibility* is the degree to which an individual has and uses one of several available types of information processing strategies or styles during different tasks, as well as different states of awareness" (p. 155). People with superior ability to adaptively shift cognitive style outside of hypnosis might be able to use this ability for hypnotic experiencing. For example, Crawford and Allen (1983) used a task involving short-term visual memory for complex drawings and found that hypnosis improved memory performance and increased the use of holistic rather than analytic strategies in high but not low hypnotizables. Several cognitive-style characteristics of hypnosis (such as enhanced imagination and imagery ability, holistic perception) have been associated with the talents of the brain's right cerebral hemisphere, in contrast with the more analytic, verbal left hemisphere.

Crawford (1989) hypothesized that greater cognitive flexibility is correlated with greater *physiological flexibility*, which she defined as "the degree to

which an individual shows different patterns of cerebral activation when performing different types of tasks or when applying different types of strategies to the same task" (p. 155). This hypothesis is supported by evidence for greater EEG "hemispheric specificity" in high than in low hypnotizables. In the waking state, when performing various cognitive tasks thought to require mainly either right, or left, hemisphere processing (such as spatial versus verbal tasks, respectively), highs show a greater degree of appropriate left-right shifting in cerebral activity according to brain-wave measures. For example, during a visuospatial task the left hemisphere shows more alpha EEG, whereas the right hemisphere shows more beta EEG, indicating that the right hemisphere is more active (MacLeod-Morgan & Lack 1982; see also DePascalis, Silveri, & Palumbo 1988).

For many years researchers have searched in vain for reliable physiological correlates of hypnosis. But some recent research shows promising results. MacLeod-Morgan (1982) found increased relative right-hemisphere activity (compared to the left hemisphere) during hypnosis in high hypnotizables, but not in lows. Crawford (1989) studied the effects of hypnosis on regional cerebral blood flow. Subjects inhaled a small amount of radioactive xenon-133. Blood-flow changes were estimated by special sensing devices that detected the xenon-133 levels in various cortical regions. Overall cerebral blood flow increased during hypnosis in high hypnotizables, but not in lows. Highs and lows also differed in patterns of blood-flow changes between and within cerebral hemispheres, but these changes are too complex to describe here, and their functional significance has not been determined. It remains to be seen whether the recent findings of physiological correlates of hypnosis can be replicated. But regardless of the physiological results, the hypothesis of greater cognitive flexibility among high hypnotizables is a promising one.

The findings described here support the idea that hypnotizability is a relatively permanent personality trait that is correlated with other cognitive and personality traits. However, the social-psychological approach says that hypnotizability is not a personality trait, but rather, it is a learnable cognitive skill. In this view, correlates of hypnotizability are probably related to the learning of cognitive skills relevant to hypnotic performance, or they may be procedural artifacts (Council, Kirsch, & Hafner 1986). In the next section I will discuss evidence on the question whether hypnotic responsiveness is a learnable skill.

### CAN HYPNOTIC SUSCEPTIBILITY BE MODIFIED?

Can a person's level of hypnotic susceptibility be increased through some sort of special experience or training procedure? This question is important for two reasons. First, if it were possible to train unhypnotizable people to be hypnotizable, then they could take advantage of clinical applications of hypnosis, such as pain reduction or habit control. Second, a critical theoretical issue is at stake: Is hypnotic susceptibility a relatively permanent personality *trait*, or is it a learnable *skill*? The trait theory (Hilgard 1965) allows that hypnotic susceptibility may be strongly affected by childhood experiences

(J. Hilgard 1979). But the trait theory would not expect any special training procedure to be successful in producing large, permanent changes in the hypnotic susceptibility of adults. The skill theory (Diamond 1977; Spanos 1986b) says that hypnotic susceptibility depends upon certain attitudes, beliefs, and cognitive skills (such as how to think, imagine, and interpret one's experience) that can be improved by special training methods. The trait theory has been held by theorists who view hypnosis as an altered state of consciousness or cognitive control systems (Bowers 1976; Hilgard 1977), whereas the skill theory has been held by those who take a social-learning approach to hypnosis (Spanos 1986b). Thus, the outcome of attempts to increase hypnotic responsiveness by special training has great relevance to basic theories of hypnosis.

**Early attempts.** In earlier attempts to modify hypnotic susceptibility, most studies used relatively simple training programs. Several studies showed significant increases in hypnotizability scores between pretreatment and posttreatment sessions. For example, increases were found following sensory deprivation (Sanders & Reyher 1969; more recently Barabasz & Barabasz 1989), alpha biofeedback training (London, Cooper, & Engstrom 1974), muscle relaxation biofeedback training (Wickramsekera 1973), and encounter-group experience (Shapiro and Diamond 1972). However, several attempts to modify hypnotic susceptibility have failed; for example, meditation training and practice was ineffective (Spanos, Gottlieb, & Rivers 1980), and some successful studies could not be replicated (review in Spanos 1986b).

Campbell Perry (1977) pointed out several problems with the apparently successful early attempts to modify hypnotic responsiveness: (1) The gains were typically rather small, and there was no proof that the gains were maintained over a relatively long period of time. The special training methods might have produced short-term improvements in hypnotic *performance*—perhaps by changing motivation or compliance—without necessarily producing permanent changes in hypnotic susceptibility.

(2) The pretest to posttest change score might be inflated by using an inappropriate pretest baseline. Anxiety, negative attitudes, or self-consciousness may cause some individuals to score below their capability on their first test of hypnotizability, but they do better on a second test after they overcome the initial problems. Perry argued that, to establish a suitable pretest baseline, researchers should measure *plateau hypnotizability* by giving several tests until there is no further improvement.

(3) Results of modification studies may be biased by *compliance effects*. It is usually obvious to subjects that the experimenter expects the training procedure to increase their hypnotic responsiveness. Subjects might “cooperate” and show increased hypnotic responsiveness through either direct behavioral compliance or self-deception.

Perry (1977) concluded that despite the fact that several studies have shown modest increases in test scores between pretest and posttest, the small size of the gains and the methodological problems of the studies are such that one cannot conclude that long-term hypnotic susceptibility is modifiable by special training. Thus, the trait theory of hypnotic susceptibility ap-

peared to be supported, according to Perry's evaluation, by the earlier research.

**The Carleton studies.** In recent years, however, evidence has accumulated in support of the social-psychological viewpoint that hypnotic responsiveness is a learnable skill. Building on earlier work by Diamond (1977) and others, Nicholas Spanos (1986b) and his Carleton University colleagues developed the Carleton Skills Training Program (CSTP). CSTP was designed to modify hypnotic susceptibility by employing three relatively distinct components that earlier research had indicated to be important aspects of hypnotic responsiveness:

1. *Disinhibitory information.* CSTP provides information aimed at rectifying misinformation about hypnosis, reducing anxiety, and producing positive attitudes, expectations, and motivations toward experiencing hypnosis.
2. *General facilitatory information.* CSTP emphasizes the importance of generating and becoming absorbed in imaginary situations consistent with the intent of the suggestion. For example, if it is suggested that an arm is becoming light and starting to float up, then subjects should concentrate on imagining their arm being like a large helium-filled balloon.
3. *Detailed information on how to interpret specific types of suggestions.* Hypnotic suggestions are often ambiguous. They often convey the impression that an implied response should happen by itself, and some subjects wait passively for the response to occur. In fact, research by Spanos (1986a, 1986b) and his colleagues shows that high hypnotizables engage actively in cognitive strategies to make the suggested responses occur. CSTP gives examples of several types of suggestions, explains how to interpret the intent of the suggestion, and instructs subjects how to direct attention and generate images consistent with the suggestion's intent, while avoiding mere behavioral compliance. The specific information is presented in two ways. First, the experimenter gives specific information and practice suggestions with feedback. Second, subjects see a videotaped model who responds to several suggestions while she describes appropriate goal-directed imagery strategies.

Spanos et al. (1986) showed that training with CSTP can produce large increases in hypnotic responsiveness in many subjects. They used groups of originally low-hypnotizable subjects (mean score 1 on the 7-point Carleton suggestibility scale, CURSS) and compared their pretreatment hypnotizability scores with posttreatment scores. The *full CSTP group* got the complete three-part training procedure, while the *partial CSTP group* got only the first two components, without the detailed information and suggestion demonstrations. A *no-treatment control group* was simply retested at a later date, without any intervening training or special instructions, to control for the possibility of changes occurring merely as a result of retesting hypnotic susceptibility. The second hypnotizability test was done by a new experimenter, so subjects would not feel that they had to respond in order to please the experimenter who trained them.

Subjects showed marked increases in hypnotic responsiveness on the second test in the full-CSTP group (mean score 5.5 of 7), but not in the partial-CSTP group (mean 1.7) or the control group (mean 0.8). In fact, 73

percent of the full-CSTP group scored in the high-hypnotizability range on retesting (5 or better on the 7-point CURSS), whereas none of the partial-CSTP or controls showed such an increase. Nor were the changes limited to overt behavioral responses to suggestions. Full-CSTP subjects showed marked increases in subjective responses to suggestions, and they reported that most of their behavioral responses occurred nonvoluntarily. Finally, full-CSTP subjects' gains were not limited to suggestions on which they had had previous training. They also responded more than the partial-CSTP or control subjects on new items on CURSS and on SHSS:C. Thus, subjects could apply their training on interpreting suggestions and developing cognitive strategies to entirely new suggestions. Some 53 percent of full-CSTP subjects scored in the high-hypnotizable range on a second posttest, with SHSS:C. Another finding was that attitudes toward hypnosis improved as much in the partial-CSTP group as in the full-CSTP group. Thus, the improved attitudes of the partial-CSTP group were not sufficient to produce marked increases in hypnotic responsiveness.

A critical question in all attempts to increase hypnotizability is whether apparent gains are merely a matter of behavioral compliance by subjects who want to be cooperative. CSTP subjects are explicitly told that the training procedures are intended to increase their hypnotic responsiveness, and it is conceivable that they faked their responses. To evaluate this possibility, Spanos et al. (1986) included a fourth group of low hypnotizables, the *simulator group*, who were not given any special training but who were instructed to fake responding like a highly hypnotizable subject on the second test of hypnotic susceptibility. The pattern of results for the simulator group was quite different from that of the full-CSTP group. The simulators over-faked, which suggests that the full-CSTP group was not merely faking, because they could have faked better.

Regarding Perry's (1977) argument for measuring plateau hypnotizability, Spanos (1986b) replied that: (1) in fact, hypnotic susceptibility is remarkably stable over short-term test-retest intervals; and (2) a single pretest score is satisfactory in experimental designs that include a no-treatment, test-retest control group.

The dramatic increases in hypnotic responsiveness following training with the full Carleton Skills Training Program have been replicated in several studies. "Created highs" (full CSTP-trained subjects) and untrained "natural highs" have been found to have equivalent levels of subjective responding and feelings of nonvolition on a variety of different hypnotic suggestions (Gfeller, Lynn, & Pribble 1987; Gorassini & Spanos 1986; Spanos, Lush, & Gwynn 1989).

In Spanos's studies, typically about 50 percent of initially low-susceptibles improved to the high hypnotic susceptibility level following training on the full CSTP. The question arises, if hypnotizability can be trained, why can't everybody learn it? Or to turn the question around, who can benefit from hypnotic skills training? Spanos et al. (1987a) found that full-CSTP training was effective only for subjects who scored high on a test of mental imagery vividness. Among untrained subjects, those who are low in imagery vividness are rarely hypnotizable, but those who are high in imagery vividness may be either high or low in hypnotizability. Spanos et al.'s results sug-

gest that subjects must have an underlying capacity for vivid mental imagery in order to use effectively the imagination strategies described in CSTP.

Spanos's results with the Carleton Skills Training Program are impressive. They suggest that hypnotic responsiveness is a learnable skill, and that earlier attempts to increase responsiveness were largely unsuccessful because they took the wrong approach. In some of the earlier studies, researchers assumed that hypnosis is an altered state of consciousness, and that altered-state training (such as through sensory deprivation, biofeedback, or meditation) was necessary. Other early studies were on the right track in trying to improve attitudes and/or general instructions for using imagination, but they did not include training and modeling of how to interpret specific suggestions and develop appropriate cognitive strategies, which is a critical component of the CSTP.

The issue whether hypnotic responsiveness is a learnable skill is not entirely settled, however. More research is needed to compare CSTP-“created highs” with “natural highs” in a variety of situations. One important question concerns the long-term stability of hypnotic responsiveness in CSTP-created highs. Spanos has found stability over one month. But Bates et al. (1988) found that responsiveness gains following CSTP training were not maintained when subjects were tested again four months later (though their subjects' initial increases were not as large as in Spanos's studies). This result contrasts with findings of stability of hypnotic responsiveness over ten- and twenty-five-year periods in untrained subjects. More research on this point is needed. Also, if hypnotic responsiveness is related to the degree of symptom improvement in clinical hypnosis applications, then it seems important to find out whether created highs respond as well as natural highs in clinical hypnosis applications. Spanos (personal communication, 1989) replied that this is not a critical test of created highs, since it assumes a correlation between hypnotizability and clinical outcomes with hypnosis. Spanos (1990) reviewed research on hypnotherapy and concluded that it does not convincingly show that clinical outcomes with hypnotherapy are related to patients' hypnotic susceptibility levels. I will discuss some of the research on hypnotherapy effectiveness and its relation to hypnotizability in the next section.

## CLINICAL APPLICATIONS OF HYPNOSIS

Hypnosis has been used to treat a wide variety of medical and psychological disorders over the last 200 years (Crasilneck & Hall 1985; DePiano & Salzberg 1986). Its popularity among practitioners has gone through several cycles, but in recent years it has been used with increasing frequency in behavior therapy (such as habit and anxiety treatment) (Spinhoven 1987), hypnoanalysis (a variety of psychoanalysis) (Fromm 1987), and behavioral medicine (especially for pain and psychosomatic disorders) (Frankel 1987). Thousands of individual case studies have been published over the years (see Dowd & Healy 1986 for recent examples). However, only in the last twenty-five years have researchers begun to do controlled studies to critically examine *hypnotherapy*, the application of hypnotic methods as either a primary means of therapy or as a adjunct to other methods. We are beginning to ob-

tain answers to questions such as: For what types of disorders does hypnotherapy work? For whom does it work? How does it work?

Two different approaches to defining hypnosis in hypnotherapy have been used: hypnosis as an antecedent variable or as a subject variable (Orne 1977; Wadden & Anderton 1982).

**Hypnosis as an antecedent variable.** In this operational approach, a therapeutic intervention is said to involve hypnosis (*hypnotherapy*) if: (1) the therapist labels the situation as hypnosis; (2) the patient understands that the situation involves hypnosis; and (3) some sort of hypnotic induction ritual is used. Following induction a variety of different techniques may be used, ranging from imagery suggestions to direct suggestions for behavioral change. It is critical to note, however, that use of a hypnotic induction does not guarantee that a patient will enter a hypnotic state. Therapists taking this approach typically do not assess their patients' hypnotic susceptibility, and in fact they sometimes insist that high hypnotizability is unimportant for therapeutic gain. The benefits of hypnotic induction for a particular problem can be evaluated by comparing groups of patients who do or do not receive hypnotic inductions, where other therapeutic procedures are identical for the two groups. However, in the absence of systematic assessments of hypnotic susceptibility, any apparent benefits of hypnotic induction cannot necessarily be attributed to hypnosis *per se*. Conceivably, just labeling a situation as hypnosis may have indirect benefits—such as relaxation or increased expectancies for therapeutic gain—for all patients, regardless of hypnotizability level (Wadden & Anderton 1982).

**Hypnosis as a subject variable.** In this approach, patients' hypnotic susceptibility levels are systematically measured and therapeutic outcome is evaluated in relation to hypnotic susceptibility. Only when hypnotic methods are used and the benefit is greater for more highly hypnotizable patients can it be concluded that hypnosis *per se* is important for the therapeutic gain. It has been argued that in high hypnotizables, hypnosis can enhance therapeutic interventions by augmenting process variables, such as relaxation, mental imagery vividness, or suggestibility, though evidence on each of these points is equivocal (Wadden & Anderton 1982). Alternatively, individual differences related to hypnotizability—such as absorption and imagery vividness—might sometimes affect therapeutic outcome even when hypnosis is not used.

In a review of research on hypnotherapy outcomes, Wadden and Anderton (1982) distinguished between two classes of disorders: voluntary and involuntary. *Voluntary disorders* are maladaptive habits that arise from the patient's voluntary, self-initiated behavior. Among voluntary disorders, hypnotherapy has been used most often in attempting to modify behaviors of smoking, overeating, and alcoholism. *Involuntary disorders* are undesirable experiences or symptoms that occur against the patient's will. Important examples include anxiety, nausea, pain, skin disorders, and asthma. Asthma, some types of pain (such as migraine headache), and some skin disorders (such as warts), are *psychosomatic disorders*—disorders either caused by or exacerbated by psychological factors (DePiano & Salzberg 1979).



From the studies that they reviewed, Wadden and Anderton (1982) concluded that: (1) hypnotherapy is more effective for involuntary disorders than for voluntary disorders; and (2) hypnotic susceptibility is more often related to therapeutic gains for involuntary than for voluntary disorders; but (3) even when hypnotherapy works, it is not necessarily more effective than nonhypnotic methods. Which therapeutic method will be more effective depends on the type of disorder and the patient's characteristics. I will discuss behavioral medicine applications of hypnosis to three involuntary disorders (pain, warts, and asthma), followed by discussion of behavior modification applications of hypnosis to two voluntary disorders (smoking and overeating).

### **Involuntary Disorders: Pain, Warts, and Asthma**

Hypnosis with analgesia suggestions has been used to reduce a wide variety of clinical pains, such as pain of childbirth, major and minor surgery, dentistry, burns, headaches, and chronic pain such as arthritis and cancer (Crasilneck & Hall 1985; Hilgard & Hilgard 1983). Hypnotic analgesia has also been studied extensively in laboratory experiments using pain-stimulation methods designed to hurt subjects without doing any damage (see Chapter 15). There is compelling evidence that hypnotic analgesia suggestions are more effective, the greater the subject's hypnotic susceptibility (Wadden & Anderton 1982; Frankel 1987). For example, migraine headaches are thought to result from an initial vasoconstriction (constricting of blood vessels in the head, resulting in reduced blood flow), followed shortly by an overcompensating vasodilation that produces blurred vision, dizziness, nausea, and pain. In treating migraines, hypnosis has been used to promote relaxation and reduce vasodilation. The degree of therapeutic gain is positively related to individual differences in hypnotizability (Cedercreutz 1978).

J. Hilgard & LeBaron (1982) used hypnosis with children with leukemia who had to undergo repeated bone marrow aspirations, a procedure that is normally quite painful and anxiety provoking. To reduce pain during bone marrow aspirations, the children were given a hypnotic induction followed by suggestions of local analgesia (numbness) and guidance in pleasurable fantasies for distraction from pain. Of some nineteen highly hypnotizable patients, 79 percent showed reduced pain and anxiety according to both self-ratings and ratings by observers (observer ratings based on overt behavior, such as crying). In several cases the hypnotic treatment was so successful that the aspiration procedure was reduced from an unbearable experience to a merely annoying one. Of five low-hypnotizable subjects, none showed benefit from hypnotic methods.

Several types of skin disorders have been treated with the help of hypnosis, including warts, psoriasis (reddish and silvery scales), and others (reviews in DePiano & Salzberg 1979; Wadden & Anderton 1982). Though skin conditions may be caused initially by an irritant (such as poison ivy) or virus (as in warts), psychological factors may influence the severity and duration of symptoms. Some hypnotherapy studies that used no control group have been flawed by failing to consider the spontaneous remission rate. For example, warts tend to disappear spontaneously in about 2.3 years, on the aver-

age. However, several cases have been reported where skin conditions that had been resistant to medical treatment for many years showed rapid and dramatic improvement when hypnotherapy was used. Also, several studies have shown better improvement in hypnotherapy groups than in control groups. Hypnotherapy does not work in all cases, and it is more likely to work for highly hypnotizable subjects. In treating warts, the most common method involves suggested images, such as tingling sensations in the affected area, intended to increase the blood supply to that area. In some cases hypnoanalysis revealed that skin symptoms served the function of providing an excuse for the patient to avoid social or sexual encounters that evoked anxiety. Skin symptoms cleared up following psychotherapy to help the patients gain insight into the situation (DePiano & Salzberg 1979).

Asthma symptoms include labored breathing accompanied by wheezing and a sense of constriction in the chest. The etiology (causes) of asthma is not fully understood, but it appears to involve an interaction of allergic, infective, and psychological factors. The symptoms fluctuate in intensity. Asthma attacks may be triggered by anxiety or stress in some patients. In hypnotherapy for asthma, the emphasis is usually on suggestions for tension reduction and increased self-confidence, rather than direct suggestions for symptom removal. Several studies have shown that hypnotherapy can reduce asthma symptoms according to subjects' self-reports, though results with physiological measurements of symptoms have been more equivocal (DePiano & Salzberg 1979). Though most studies did not measure hypnotizability, at least one study showed that treatment gains are positively related to hypnotizability (Collison 1975).

### **Voluntary Disorders: Smoking and Overeating**

Hypnosis has been widely used in attempts to modify maladaptive behaviors, including smoking, alcoholism, and overeating (Wadden & Anderton 1982), and treatment of phobias (McKeegan 1986; Spinhoven 1987). Though some impressive case studies have been reported, controlled research shows equivocal results, at best. Even when hypnotherapy works, it is not necessarily better than other therapy methods, nor is it clear that its benefits depend on hypnosis *per se*.

The health hazards of cigarette smoking are well known. Unfortunately, nicotineism is one of the most difficult addictions to overcome. Smoking is a habit maintained both by positive reinforcement—the pleasures of smoking—and by negative reinforcement—avoidance of the discomforts of nicotine withdrawal. When addicts try to quit smoking, either on their own or with the help of psychotherapy, most of them return to smoking within a few weeks or months. The total abstinence rate after one year is only about 20 percent, regardless of treatment method.

Hypnotherapy for smoking cessation has employed a variety of techniques, including: (1) aversive conditioning that emphasizes the harmful effects of smoking and suggestions that cigarettes taste bad, (2) visualization of the benefits of smoking abstinence, (3) desensitization of aversive feelings during smoking abstinence, (4) increasing confidence in the ability to quit, and (5) mental rehearsal of coping skills for dealing with problem situations

where smoking is especially tempting (Sandford 1986). Treatment duration ranges from a single session to several sessions. Success claims range from 4 to 80 percent of patients still abstaining after three to six months. About 30 to 40 percent abstinence is common, which may be contrasted with an estimated 20 percent success rate for placebo treatment (merely being in therapy and expecting benefits). Success rates are highest with treatment packages that combine several methods, though it is impossible to isolate the contribution of hypnosis in treatment packages. Even when hypnotherapy is successful, treatment outcome is usually uncorrelated with hypnotic susceptibility (Perry, Gelfand, & Marcovitch 1979), though there is at least one exception (Barabasz et al. 1986). Perry et al. (1979) found that the best predictor of treatment outcome was the client's motivation to quit smoking, rather than hypnotic susceptibility.

One of the most common uses of hypnosis is for weight reduction. I once received a letter from a man who said "I want you to hypnotize me out of being fat." Unfortunately, it is not that simple. Hypnosis does not have any magical, automatic effects. Changing maladaptive behaviors requires considerable willpower by subjects. Any diet program, with or without hypnosis, requires careful attention to nutritional needs, and benefits are likely to be greatest if physical exercise is part of the program.

Hypnotherapy for weight loss has employed several techniques, including: (1) suggestions for decreased appetite, (2) increased confidence in one's ability to stick to a diet, (3) positive imagery for the social and health benefits of weight loss, (4) covert modeling of effective coping behavior, and (5) suggestions that favorite foods will become nauseating to the individual. Also, (6) hypnoanalysis has been used to uncover deep-seated emotional conflicts that underlie excessive eating behavior. However, most controlled studies have found that hypnotic inductions do not enhance the effectiveness of the treatment program, and treatment effectiveness is not related to hypnotic susceptibility (Wadden & Anderton 1982).

Voluntary maladaptive behaviors are hard to change. While hypnotherapy has been associated with some strikingly successful cases, most controlled studies have found that hypnotherapy is no better than the best non-hypnotic methods. The fact that treatment success is usually uncorrelated with hypnotic susceptibility indicates that hypnosis *per se* (that is, a hypnotic state) is not a factor in treatment effectiveness. Thus, whenever hypnotic induction appears to enhance the treatment, it is probably due to nonspecific factors such as increased expectation of benefit, which may help subjects to gain more self-control.

### Concluding Comments on Hypnotherapy

It is impossible to draw firm conclusions about the effectiveness of hypnotherapy. The term "hypnotherapy" has been applied to virtually any clinical application of hypnosis. A wide variety of different techniques has been applied to a wide variety of different disorders. As in other psychotherapy research, the studies have varied widely in quality. Some have used appropriate control groups; some have not. Some have used objective, quantitative assessments of therapeutic gains; some have not. Some have assessed

hypnotizability with standardized scales; some have not. Some have controlled for nonhypnotic variables, whereas others have confounded hypnotic procedures with other variables, such as specific suggestions and instructions that were not given to nonhypnotic subjects.

Spanos (1990) reviewed hypnotherapy research for three voluntary disorders—phobic avoidance, smoking, obesity—and three involuntary disorders—asthma, warts, and pain—and drew conclusions from the better-controlled (though often imperfect) studies. His conclusions did not entirely agree with those of Wadden and Anderton (1982).

Spanos agreed with Wadden and Anderton that when hypnotherapy works, it usually does not work any better than nonhypnotic treatments. Furthermore, Spanos suggested that hypnotherapy might work better than nonhypnotic methods for certain individuals, but when that happens it is because of the *mystique* of hypnosis, which may benefit some subjects by increasing their expectations of therapeutic gains. But the opposite result may occur in some individuals, if they fear hypnosis.

Spanos agreed with Wadden and Anderton that with hypnotherapy, hypnotic susceptibility is more likely to be related to therapeutic gains for involuntary disorders (15 of 30 studies) than for voluntary disorders (5 of 17 studies). Even so, only half of the studies with involuntary disorders found a relationship between hypnotizability and therapeutic gain, and the proportion was even lower for studies using standardized measurements of hypnotizability (6 of 18 studies).

Spanos (1990) concluded that hypnotherapy research does not support the traditional interpretation that therapeutic gains occur because of an altered state of consciousness or hypnotic trance, or that hypnotherapy works best for hypnotizable subjects who can enter a hypnotic trance. When hypnotherapy is successful it is because of patients' motivations and expectations and aspects of the therapeutic procedure (such as instructions, suggestions) that also promote positive outcomes for nonhypnotic therapy methods. Spanos hypothesized that in studies where positive relationships between hypnotizability and therapeutic gains are found, the correlation occurs because subjects' perceived success or failure during initial hypnotizability testing engenders expectations of success or failure for hypnotherapy, which in turn affect therapeutic gains. This idea might be tested by manipulating subjects' perceptions of their hypnotic responsiveness and the relationship between hypnotic responsiveness and therapeutic outcome.

Questions about hypnotherapy—which methods work best for particular disorders and why, and the relationship between hypnotizability and therapeutic gains—are far from settled. Additional carefully controlled research is needed (Wadden & Anderton 1982).

## IS HYPNOSIS DANGEROUS?

When I invite introductory psychology students to participate in my hypnosis research, most of them are happy to volunteer. Most students are eager to try such an interesting new experience. But some choose not to volunteer. Some people are afraid to be hypnotized. The fear of hypnosis seems to be

based largely on fictional treatments of hypnosis, where the ability of hypnotists to control people is exaggerated and evil hypnotists coerce unwilling victims to do evil or immoral things. Some people fear that being hypnotized will make them weak-willed or that they might enter a trance and not be able to come out of it. Is hypnosis really dangerous?

First, it can be said without reservation that hypnosis is safe provided that it is done by a properly trained professional who uses it in an ethical manner. Second, the issue of whether an unethical hypnotist could coerce an unwilling subject into carrying out some immoral, harmful, or illegal act is still controversial.

Let us consider several of the alleged dangers of hypnosis. I will begin with a brief overview of the worries that people might have about hypnosis when it is used in a competent and ethical manner. Then I will discuss the question of loss of control and the unethical use of hypnosis.

(1) Will hypnosis make me weak-willed, so that I will be more easily controlled by other people after the hypnosis session? No. There is no evidence that this happens.

(2) What if the hypnotist should abandon me, or die, while I am hypnotized? Will I stay hypnotized forever? No. The evidence indicates that you will spontaneously come out of hypnosis after about twenty minutes or so (Evans & Orne 1971). You might fall asleep, and when you awaken you will no longer be hypnotized.

(3) Can hypnosis precipitate a psychotic breakdown? There is no convincing evidence that this is the case. Hilgard (1965) reported that there have been a small number of cases where hypnotherapy patients got worse instead of better, but in all of those cases the patients had severe mental problems and got worse despite the use of hypnosis, rather than because of it.

(4) Can hypnosis elicit unanticipated emotional reactions? Yes, this occasionally happens. In particular, during age regression subjects may cry if they are regressed back to an unhappy time of their life. (In my experience, this has happened only once among about 200 subjects tested on SHSS:C.) Crying reactions may be embarrassing to the subject, but they are not a serious problem. Standard hypnotic susceptibility testing procedures are designed to minimize the likelihood of unpleasant emotional reactions. Crying sometimes occurs during some types of hypnotherapy, but crying also occurs in psychotherapy without hypnosis. Experienced psychotherapists know how to deal with patients' emotional reactions. Such emotional reactions are more likely to create an awkward situation when hypnosis is done by amateurs.

(5) Will there be any unpleasant *sequelae* (aftereffects) of hypnosis? A large majority of subjects report that they feel relaxed or rested after hypnosis. However, hypnosis subjects occasionally report some sort of unpleasant feeling following hypnosis, such as feeling drowsy, confused, dizzy or light-headed, a mild headache, upset stomach, stiff neck, anxiety, or unhappiness (J. Hilgard 1974b). Such symptoms usually last less than an hour, and they do not pose any risk to subjects (Crawford, Hilgard, & Macdonald 1982). The important question is whether hypnosis *per se* is really to blame for such symptoms. Coe and Ryken (1979) put the problem in perspective by comparing the frequency of unpleasant experiences following hypnosis with their

frequencies following other experiences among college students, including attending a college class, taking an exam, participating in a psychology experiment on verbal learning, or college life in general. The results indicated that unpleasant aftereffects were no more common for hypnosis than for the other activities. On the other hand, the subjects rated hypnosis as significantly more pleasant than the other activities.

### The Question of Coercion Through Hypnosis

Probably the major source of anxiety over hypnosis is people's fear that they will lose their normal self control and be controlled by the hypnotist. Such fears are based largely on fictional treatments and stage demonstrations of hypnosis. For example, a stage hypnotist may suggest to subjects that they are famous rock or opera singers, and subsequently they will sing in an uninhibited manner, even though they ordinarily would be too timid to sing in front of an audience. It is important to realize that in such cases the subjects have not been coerced into doing anything dangerous or immoral. Hypnosis may reduce people's inhibitions against doing things that they would ordinarily be too timid to do. Even un hypnotizable people may go along with suggestions in a hypnotic setting, since the hypnotic setting provides an excuse for doing unusual things.

But what about the possibility that a hypnotist might coerce a subject into doing something harmful or immoral? Most clinical and research hypnotists with whom I have talked believe that subjects can resist suggestions if they want to do so. Some hypnotists speak of a division of consciousness during hypnosis, where one part, the "censor," is aware of what is going on and can arouse the subject if anything objectionable is suggested.

The point that hypnotized subjects can resist suggestions to do something against their moral standards is illustrated by two incidents described by Hilgard (1971):

An early demonstration by Pierre Janet . . . was often cited and occasionally repeated. A young woman was being used to demonstrate hypnosis, and under hypnosis she was asked to take off her clothes before an audience of medical students. According to the anecdote, she became spontaneously aroused from hypnosis. The late Professor Dorcus, of the University of California at Los Angeles, told me about his confident undertaking to repeat the demonstration, but his young woman subject began unbuttoning so rapidly that he had to call a halt. It turned out that she was accustomed to "stripping" in a night club, so this was not contradictory evidence after all! It does make the point, however, that something that happens within hypnosis need not happen *because of hypnosis*, and there will always be areas of ambiguity (p. 576).

There have been several reports of people who claimed to have been coerced by a hypnotist to perform objectionable acts. In these cases the subjects voluntarily submitted to hypnosis, and the hypnotist made unethical suggestions after the induction. Most of the cases involved sexual seduction, though there have been a few cases where hypnotists suggested that subjects commit crimes or violent acts.

Perry (1979) reviewed the evidence and testimony of a court case in

Australia, where a lay hypnotist (that is, one without professional credentials) was accused of seducing two female clients under hypnosis. The clients had come to the hypnotist for help in losing weight. The defense called experts who claimed that subjects can resist objectionable suggestions, while the prosecution called experts who claimed that some people may be unable to resist suggestions.

Watkins (1972) made two relevant points. First, he argued that hypnosis is a unique interpersonal relationship, and a person's behavior may be strongly influenced by interpersonal relationships (such as psychotherapy) even without hypnosis. If hypnotic procedures are powerful enough to do patients good, then it is reasonable to suppose they could be misused to do patients harm. Second, he pointed out that hypnosis might be used to distort the perception of reality, and thus trick subjects into committing antisocial acts. For example, Watkins (1947) described the case of an American soldier during World War II who was hypnotized and told that when he opened his eyes he would see "a dirty Jap soldier" who was going to kill him. When he opened his eyes the soldier violently attacked the other man, who in reality was an American officer.

Yet, in the case reviewed by Perry (1979), neither distorted perceptions nor intense interpersonal relationships seem to have been involved. The proper interpretation of the facts is far from certain. It could be argued that in this and similar cases there was "motivated helplessness" on the part of the subjects during the original act, but they later felt guilty about their actions and blamed the hypnotist. However, the most interesting interpretation of such cases concerns subjects' beliefs rather than their underlying motives. According to Perry:

It is possible that a percentage of people believe that all initiative and self-determination in hypnosis is surrendered to the hypnotist. In hypnosis it may be possible to coerce such people, in the sense that the belief of inability to resist is sufficient to create a *self-fulfilling prophecy* (1979, p. 213, italics added).

In order to test the self-fulfilling prophecy hypothesis, it would be desirable to have some controlled research on the topic. Yet, doing controlled research on the commission of antisocial acts under hypnosis is surprisingly complicated. In one such attempt, Orne and Evans (1965) showed hypnotized subjects a beaker of nitric acid, and demonstrated that it was strong enough to dissolve a penny. When the hypnotist told the subjects to throw the acid into a research assistant's face, five out of six of them did so! When questioned later they said that they trusted the hypnotist/experimenter not to do anything unethical. In fact, the hypnotist had surreptitiously substituted a beaker of an identical-looking but harmless liquid for the acid just before he had made the suggestion.

Coe (1977) discussed problems in doing research on the coercion of antisocial behavior in hypnosis. A satisfactory experiment would have to have an elaborate procedure to deceive subjects into believing that the suggested behavior could really do harm to themselves or to another person or their property. To be convincing, it would have to be carried out in a naturalistic setting, rather than a psychology laboratory. Also, to prove that hyp-

nosis *per se* was responsible for the antisocial acts, it would be necessary to compare a hypnosis group with a control group given the same suggestions without hypnosis. One risk is that subjects would feel guilty if they believed that they had really committed an antisocial act. Though such an experiment would be extremely valuable for understanding the limits of hypnotic coercion, the ethical problems of such research are such that it is unlikely that it would be approved by university committees responsible for evaluating the potential risks of research with human subjects.

Among hypnotists, the belief that hypnosis can be used to coerce subjects to perform antisocial acts is held mainly by clinicians who view hypnosis as an altered state in which subjects respond to suggestions automatically. In the social-psychological view, antisocial acts can be coerced during hypnosis, but antisocial acts can also be coerced in a wide variety of social situations that do not involve hypnosis. Interpersonal relationships that can influence antisocial acts outside of hypnosis can also do so during hypnosis, but no special hypnotic state is responsible during hypnosis (Spanos 1989, personal communication). Both social-psychological hypnosis theorists and most altered-state theorists agree that ordinarily, objectionable suggestions can be resisted. As a practical matter, it is important that you know and believe that you can resist objectionable hypnotic suggestions, even if you are deeply hypnotized. This belief should serve as an "inoculation" against the unethical or improper use of hypnosis, and help you to enter hypnosis in a relaxed and confident manner. Of course, most clinicians use hypnosis in an ethical manner, so there is little need to worry about objectionable suggestions. (See Laurence and Perry [1988] for more information about experimental, clinical, and field studies on coercion with hypnosis.)

## SUMMARY

Hypnosis was defined as a psychological state or condition, induced by a ritualistic procedure, in which subjects experience changes in perception, thinking, memory, and behavior in response to suggestions by the hypnotist. A suggestion is a communication intended to induce some experience or behavior that is different from what the subject would normally perceive or do, without actually commanding it. Two major theoretical approaches to hypnosis may be distinguished: (1) The special-process view, which sees hypnosis as an altered state of consciousness, or a dissociative state, in which mental processes function differently than normal; (2) The social-psychological view, which says that hypnosis involves normal thinking and behavior processes operating in an unusual social situation.

People vary widely in *hypnotic susceptibility*, the ability to respond to hypnotic suggestions. Hypnotic susceptibility can be measured by several standardized scales, such as the Stanford scales, which involve a standard induction followed by several standardized suggestions. There are three main types of suggestions: (1) ideomotor suggestions, where the hypnotist asks subjects to imagine some situation which, if it were true, would cause them to make a particular movement; (2) response-inhibition (challenge) suggestions, where the hypnotist suggests that subjects cannot move some part of



their body, then challenges them to try to move that part; and (3) cognitive suggestions, which involve changes in perception, thinking, and memory, such as positive hallucinations, negative hallucinations, age regression, hypnotic dreams, and suggested posthypnotic amnesia. According to traditional views, true hypnotic responses are experienced as involuntary, though the social psychological view says that the experience of involuntariness is a delusion promoted by prior expectations.

Hypnotic susceptibility scores are not reliably correlated with standard measures of personality traits, such as introversion-extraversion or stability-neuroticism. However, hypnotizability correlates fairly consistently though modestly with measures of imagery vividness and absorption (a disposition for having episodes of total attention, particularly in regard to aesthetic and imaginary experiences).

Pointing to evidence for the long-term stability of hypnotic susceptibility, trait theory argues that hypnotic responsiveness is a stable personality trait. Skill theory says that hypnotic responsiveness is a learnable skill. Recent research suggests that hypnotic responsiveness can be increased by special training on interpreting hypnotic suggestions and using appropriate cognitive strategies of attention and imagination.

In clinical applications, hypnotherapy has been more successful with involuntary disorders—pain and psychosomatic symptoms (skin disorders, migraine headaches, and asthma)—than with voluntary disorders—maladaptive habits (smoking, overeating, alcoholism) and phobic avoidance. Treatment outcome is correlated with hypnotic susceptibility more often for involuntary disorders than for voluntary disorders. But in general, when hypnotherapy is effective it is no more effective than nonhypnotic therapy methods.

Fears that hypnosis is dangerous stem largely from the fictional treatment of hypnosis. Hypnosis is safe provided that it is done by a properly trained professional who behaves in an ethical manner. The question whether an unethical hypnotist might coerce subjects into doing something illegal, immoral, or harmful is still controversial. It appears that subjects can resist objectionable suggestions if they believe that they can do so.

## ENDNOTE

<sup>1</sup>For readers who are unfamiliar with correlation coefficients: see Chapter 7, endnote 1.