

stages of NREM sleep (McNamara, et al., 2005). The researchers focused their analysis of the dreams on social interactions that occurred in the dream reports. They then compared aggressive versus friendly dream social interactions and found some surprising results. Twice as many aggressive interactions occurred in REM sleep dream reports compared to NREM reports (an interesting side note was that none of the dream reports included sexually related interactions).

CONCLUSION

Whether or not you are willing to accept the rather less romantic view of dreaming developed by Hobson and McCarley's research, this is an excellent example of how psychologists or scientists in any field need to remain open to new possibilities even when the established order has existed for decades. Without a doubt, the activation-synthesis model of dreams has changed psychology. This does not mean that we have solved all the mysteries of sleep and dreaming, and perhaps we never will. But it's bound to be a fascinating journey.

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 Hobson, J. A. (1989). Sleep. New York: Scientific American Library.
 Mancia, M. (1999). Psychoanalysis and the neurosciences: A topical debate on dreams. *International Journal of Psychoanalysis*, 80(6), 1205–1213.
 McNamara, P., McLaren, D., & Smith, D., et al. (2005). A "Jekyll and Hyde" within: Aggressive versus friendly interactions in REM and non-REM dreams. *Psychological Science*, 16(2), 130–136.

Reading 8: ACTING AS IF YOU ARE HYPNOTIZED

- Spanos, N. P. (1982). Hypnotic behavior: A cognitive, social, psychological perspective. *Research Communications in Psychology, Psychiatry, and Behavior*, 7, 199–213.

The alterations in consciousness with which we are all most familiar are related to sleep and dreaming. The two previous readings have focused on highly influential studies relating to these topics. Another phenomenon relating to altered states of consciousness is hypnosis. Most people see hypnosis as a mysterious and powerful process of controlling a the mind. The phrases and words that surround hypnosis, such as *going under* and *trance*, indicate that it is commonly considered to be a separate and unique state of awareness, different from both waking and sleep. And many psychologists support this view to varying degrees. Nicholas Spanos (1942–1994), however, led an opposing view that hypnosis is, in reality, nothing more than an increased degree of motivation to perform certain behaviors and can be explained fully without invoking notions of trances or altered states.

The beginnings of hypnosis are usually traced back to the middle of the 18th century, a time when mental illness was first recognized by some as stemming from psychological rather than organic causes. One of the many influential

individuals who helped bring psychology out of the realm of witchcraft and devil possession was Franz Anton Mesmer (1733–1815). He believed that "hysterical disorders" were a result of imbalances in a "universal magnetic fluid" present in the human body. During strange gatherings in his laboratory, soft music would play, the lights would dim, and Mesmer, costumed like Dumbledore, would take iron rods from bottles of various chemicals and touch parts of afflicted patients' bodies. He believed that these elements and chemicals would transmit what he called the "animal magnetism" into the patients and provide relief from their symptoms. Interestingly, history has recorded that in many cases this treatment appears to be successful (probably due to placebo effects). It is from Mesmer that we acquired the word *mesmerize*, and many believe that his treatment included some of the techniques we now associate with hypnosis.

Throughout the history of psychology, hypnosis (named after *Hypnos*, the Greek god of sleep) has played a prominent role, especially in the treatment of psychological disorders, and it was a major component in Freud's psychoanalytic techniques. Ernest Hilgard (1904–2001) was at the forefront of modern researchers who support the position that hypnosis is an altered psychological state (see Hilgard, 1978; Kihlstrom, 1998). His and others' descriptions of hypnosis have included characteristics such as increased susceptibility to suggestion, involuntary performance of behaviors, improvements in recall, increased intensity of visual imagination, dissociation (the psychological separation from a person's current environmental reality), and analgesia (lowered sensitivity to pain). Until the 1970s, the idea that hypnosis is capable of producing thoughts, ideas, and behaviors that would otherwise be impossible, and that it is an altered state of consciousness, has been virtually undisputed.

However, it is the job of scientists to look upon the status quo with a critical eye and, whenever they see fit, to attempt to debunk common beliefs. Just as Hobson and McCarley proposed a new view of dreaming that was radically different from the prevailing and popular one, social psychologist Nicholas Spanos suggested that the major assumptions underlying hypnosis, as set forth by Hilgard and others, should be questioned. In this article Spanos wrote, "The positing of special processes to account for hypnotic behavior is not only unnecessary, but also misleading Hypnotic behavior is basically similar to other social behavior and, like other social behavior, can be usefully described as strategic and goal-directed" (p. 200). In other words, Spanos contended that hypnotized participants are actually engaging in *voluntary* behavior designed to produce a desired consequence. He further maintained that although such behavior may result from increased motivation, it does *not* involve an altered state of consciousness.

THEORETICAL PROPOSITIONS

Spanos theorized that all the behaviors commonly attributed to a hypnotic trance state are within the normal, voluntary abilities of humans. He maintained that the only reason people define themselves as having been hypnotized

is that they have interpreted their own behavior under hypnosis in ways that are consistent with their *expectations* about being hypnotized. Spanos viewed the process of hypnosis as a ritual that in Western cultures carries a great deal of meaning. Participants expect to relinquish control over their own behavior, and as the process of hypnotic induction develops, they begin to believe that their voluntary acts are becoming automatic, involuntary events. An example of this that Spanos offered is that voluntary instructions are given early in the hypnotic procedure to the participant, such as "Relax the muscles in your legs," but later these become involuntary suggestions, such as "Your legs feel limp and heavy."

In collaboration with various colleagues and associates, Spanos devoted nearly a decade of research prior to this 1982 article, demonstrating how many of the effects commonly attributed to hypnotic trances could be explained just as readily (or even more simply) in less mysterious ways.

METHOD

This article does not report on one specific experiment but rather summarizes a group of studies conducted by Spanos and his associates prior to 1982, which were designed to support his position countering Hilgard's contention (and the popular belief) that hypnosis is a unique state of consciousness. Most of the findings reported were taken from 16 studies in which Spanos was directly involved and that offered interpretations of hypnotically produced behavior other than the common assumption of a unique altered state of being.

RESULTS AND DISCUSSION

Spanos claimed that two key aspects of hypnosis lead people to perceive it as an altered state of consciousness. One is that participants interpret their behavior during hypnosis as caused by something other than the self, thus making their actions *seem* involuntary. The second aspect is the belief discussed previously that the "hypnosis ritual" creates expectations in participants, which in turn motivate them to behave in ways that are consistent with their expectations. The findings of the research Spanos reports in this article focus on how these frequently cited claims about hypnosis may be drawn into question.

The Belief That Behavior Is Involuntary

As participants are being hypnotized, they are usually asked to take various tests to determine if a hypnotic state has been induced. Spanos claimed that these tests are often carried out in such a way as to invite the participants to convince themselves that something out of the ordinary is happening. Hypnotic tests involve suggestions, such as "Your arm is heavy and you cannot hold it up"; "Your hands are being drawn together by some force and you cannot keep them apart"; "Your arm is as rigid as a steel bar and you cannot bend it"; or "Your body is so heavy that you cannot stand up." Spanos interpreted these

test suggestions as containing two interrelated requests. One request asks participants to do something, and the other asks them to interpret the action as having occurred involuntarily. Some participants fail completely to respond to the suggestion. Spanos claimed that these participants do not understand that they must voluntarily do something to initiate the suggested behavior and instead simply wait for their arms or body to begin to move. Other participants respond to the suggestion but are aware that they are behaving voluntarily. Still other participants agree to both requests; they respond to the suggestion and interpret their response as beyond their control.

Spanos suggested that whether participants interpret their behavior to be voluntary or involuntary depends on the way the suggestion is worded. In one of his studies, Spanos put two groups of participants through a hypnosis induction procedure. Then to one group he made various behavior suggestions, such as "Your arm is very light and is rising." To the other group he gave direct instructions for the same behaviors, such as "Raise your arm." Afterward he asked the participants if they thought their behaviors were voluntary or involuntary. The participants in the suggestion group were more likely to interpret their behaviors as involuntary than were those in the direct instruction group.

Right now, while you are reading this page, hold your left arm straight out and keep it there for a couple of minutes. You will notice that it begins to feel heavy. This heaviness is not due to hypnosis; it's due to gravity! So if you are *hypnotized* and given the suggestion that your outstretched arm is becoming heavy, it would be very easy for you to attribute your action of lowering your arm to involuntary forces (you want to lower it anyway!). But what if you are given the suggestion that your arm is light and rising? If you raise your arm, it should be more difficult to interpret that action as involuntary, because you would have to ignore the contradictory feedback provided by gravity. Spanos tested this idea and found that such an interpretation was more difficult. Participants who believed they were hypnotized were significantly more likely to define as involuntary their behavior of arm lowering than that of arm raising. In the traditional view of hypnosis, the direction of the arm in the hypnotic suggestion should not make any difference; it should always be considered involuntary.

Suggestions made to hypnotic participants often ask them to imagine certain situations in order to produce a desired behavior. If you were a participant, you might be given the suggestion that your arm is rigid and you cannot bend it. To reinforce this suggestion, it might be added that your arm is in a plaster cast. Spanos believed that some people may become absorbed in these imaginal strategies more than others, which could have the effect of leading them to believe that their response (the inability to move their arm) was involuntary. His reasoning was that if you are highly absorbed, you will not be able to focus on information that alerts you to the fact that the fantasy is not real. The more vividly you imagine the cast, its texture and hardness, how it got there, and so on, the less likely you are to remember that this is only your

imagination at work. If this deep absorption happens, you might be more inclined to believe that your rigid-arm behavior was involuntary when actually it was not. In support of this, Spanos found that when participants were asked to rate how absorbed they were in a suggested imagined scenario, the higher the absorption rating, the more likely they were to interpret their related behavior as occurring involuntarily. Spanos also noted that a person's susceptibility to hypnosis correlates with his or her general tendency to become absorbed in other activities, such as books, music, or daydreaming. Consequently, these individuals are more likely to willingly cooperate with the kind of suggestions involved in hypnosis.

Creation of Expectations in Hypnotic Participants

Spanos claimed that the beliefs most people have about hypnosis are adequate in themselves to produce what is typically seen as hypnotic behavior. He further contended that these beliefs are strengthened by the methods used to induce and study hypnosis. He cited three examples of research that demonstrated how people might engage in certain behaviors under hypnosis because they think they should, rather than because of an altered state of awareness.

First, Spanos referred to a study in which a lecture about hypnosis was given to two groups of students. The lectures were identical except that one group was told that arm rigidity was a spontaneous event during hypnosis. Later both groups were hypnotized. In the group that had heard the lecture including the information about arm rigidity, some of the participants exhibited this behavior *spontaneously*, without any instructions to do so. However, among the participants in the other group, not one arm became rigid. According to Spanos, this demonstrated how people will enact their experience of hypnosis according to how they believe they are supposed to behave.

The second hypnotic event that Spanos used to illustrate his position involved research findings that hypnotized participants claim the visual imagery they experienced under hypnosis was more intense, vivid, and real than similar imaginings when not hypnotized. Here, in essence, is how these studies typically have been done: Participants are asked to imagine scenes or situations in which they are performing certain behaviors. Then, these same participants are hypnotized and again asked to visualize the same or similar situations (the hypnotized and nonhypnotized trials can be in any order). These participants generally report that the imagery in the hypnotized condition was significantly more intense. Spanos and his associates found, however, that when two different groups of participants are used, one hypnotized and one not, their average intensity ratings of the visual imagery are approximately equal. The difference in the two methods is probably explained by the fact that when two different groups are tested, the participants do not have anything to use for comparison. However, when the same participants are used in both conditions, they can compare the two experiences and rate one against the other. Because participants nearly always rate the hypnotic

imagery as more intense, this supports the idea that hypnosis is really an altered state, right? If you could ask Spanos, he would say, "Wrong!" In his view, the participants who participate in both conditions expect the ritual of hypnosis to produce more intense imagery, and, therefore, they rate it accordingly.

The third and perhaps most interesting demonstration of hypnosis addressed by Spanos was the claim that hypnosis can cause people to become insensitive to pain (the *analgesia effect*). One way that pain can be tested in the laboratory without causing damage to the participant is by using the "cold pressor test." If you are a participant in such a study, you would be asked to immerse your arm in ice water (0 degrees centigrade) and leave it there as long as you could. After the first 10 seconds or so, this becomes increasingly painful, and most people will remove their arm within a minute or two. Hilgard (1978) reported that participants who received both waking and hypnotic training in analgesia (pain reduction) reported significantly less cold-pressor pain during the hypnotized trials. His explanation for this was that during hypnosis, a person is able to dissociate the pain from awareness. In this way, Hilgard contended, a part of the person's consciousness experiences the pain, but this part is hidden from awareness by what he called an "amnesic barrier."

Again, Spanos rejected a hypnotic explanation for these analgesic findings and offered evidence to demonstrate that reduction in perceived pain during hypnosis is a result of the participants' motivation and expectations. All the research on hypnosis uses participants who have scored high on measures of hypnotic susceptibility. According to Spanos, these individuals "have a strong investment in presenting themselves in the experimental setting as good hypnotic subjects" (p. 208). The participants know that a waking state is being compared to a hypnotic state and want to demonstrate the effectiveness of hypnosis. Spanos, working with his associate H. J. Stam, performed a similar study involving cold-pressor pain but with one major difference: some participants were told that they would first use waking analgesia techniques (such as self-distraction) and would then be tested using hypnotic pain-reduction methods, but other participants were not told of the later hypnotic test (see also Stam and Spanos, 1980).

Figure 8-1 summarizes what Stam and Spanos found. When participants expected the hypnosis condition to follow the waking trials, they rated the analgesic effect lower in order to, as the authors state, "leave room" for improvement under hypnosis. Stam and Spanos claimed that this demonstrated how even the hypnotic behavior of pain insensitivity could be attributed to the participants' need to respond to the demands of the situation rather than automatically assuming a dissociated state of consciousness.

The most important question concerning all these findings reported by Spanos is whether we should reevaluate the phenomenon called hypnosis. And what does it mean if we were to decide that hypnosis is not the powerful mind-altering force that popular culture, and many psychologists, have portrayed it to be?

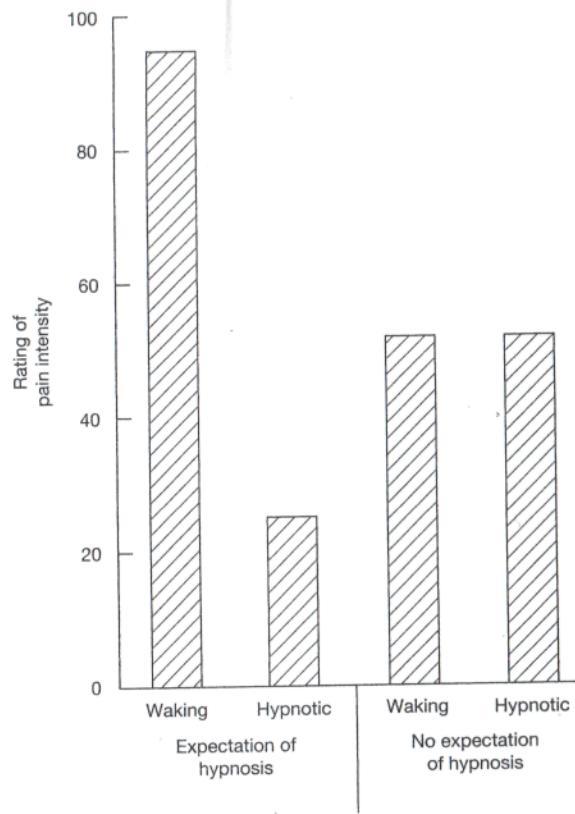


FIGURE 8-1 Waking versus hypnotic analgesia: expectation versus no expectation.

IMPLICATIONS OF THE FINDINGS

In evaluating Spanos's research, you should remember that his goal was not to prove that hypnosis does not exist but, rather, to demonstrate that what we call *hypnotic behaviors* are the result of highly motivated, goal-directed social behavior, not an altered and unique state of consciousness. It is well accepted among most behavioral scientists that people cannot be hypnotized against their will. Furthermore, under hypnosis, participants will not engage in acts they believe are antisocial, and they are not able to perform feats of superhuman strength or endurance. In this article, Spanos has demonstrated how many of the more subtle aspects of hypnosis may be explained in less mysterious and more straightforward ways than that of the hypnotic trance.

What would be the implications of accepting Spanos's contention that hypnosis does not exist? The answer to this question is "Perhaps none." Whether the effects of hypnosis are produced by an altered state of awareness or by increased motivation does not change the fact that hypnosis is often a useful method of helping people improve something in their lives. One reason that there continues to be such widespread and unquestioning acceptance of the power of the hypnotic trance may be that humans need to feel

that there is a way out, a last resort to solve their problems if all else fails—something so omnipotent that they can even change against their own resistance to such change.

Whether or not hypnosis is an altered state of consciousness remains a highly controversial issue. But whatever hypnosis is, it is not the panacea most people would like to find. Several studies have shown that hypnosis is no more effective than other methods of treatment to help people stop abusing alcohol and tobacco, improve their memory, or lose weight (see Lazar & Dempster, 1981, for a review of this research).

RECENT APPLICATIONS

A citation of Spanos's 1982 article appeared in a 1997 article offering a new theory to explain the idea that participants perform behaviors involuntarily under hypnosis (Lynn, 1997). This researcher contended that highly hypnotizable individuals perceive their behaviors while "under" as involuntary for several reasons. First, such people enter hypnosis with the *intention* to do what the hypnotist suggests. Second, they strongly *expect* that hypnosis has the power to mold their behavior whether they voluntarily cooperate or not. And third, "the intention to cooperate with the hypnotist, as well as the expectation to be able to do so, create a heightened readiness to experience these actions as involuntary" (p. 239). It is not surprising that this researcher relied on Spanos's work in that the theory mirrors and endorses the ideas set forth in the article that is the subject of this reading.

Another study cited Spanos's perspectives on hypnosis to question certain therapeutic practices often employed by some psychotherapists to induce clients to recover ostensibly "repressed" memories of past sexual abuse (Lynn et al., 2003). The authors contend that hypnosis, along with other therapeutic techniques, may distort memories or even create memories of abuse that never actually took place, especially in early childhood (see the reading on the work of Elizabeth Loftus in Chapter IV for more about recovered memories). The researchers point out, based on Spanos's research, that "Adults' memory reports from 24 months of age or earlier are likely to represent confabulations, condensations, and constructions of early events, as well as current concerns and stories heard about early events" (p. 42). In other words, the belief that hypnosis somehow allows clients to retrieve accurate memories of early traumatic experiences is misguided and may be subject to all the memory errors that exist in a nonhypnotized state. This, the authors contend, may in some cases, lead to false memories and accusation of abuse that never happened. Spanos elaborated his perspective on this potential misuse of hypnotic techniques in his 1994 book, *Multiple Identities & False Memories: A Sociocognitive Perspective*.

CONCLUSION

Clearly, the debate goes on. Spanos continued his research until his untimely death in a plane crash in June 1994 (see McConkey & Sheehan, 1995). A summary of his early work on hypnosis can be found in his 1988 book, *Hypnosis:*

The Cognitive-Behavioral Perspective. Nicholas Spanos was a prolific and well-respected behavioral scientist who has been missed greatly by his colleagues and by all those who learned and benefited from his work (see Baker, 1994, for a eulogy to Nick Spanos). And, clearly, his research legacy will be carried on by others. His work on hypnosis changed psychology in that he offered an experimentally based, alternative explanation for an aspect of human consciousness and behavior that was virtually unchallenged for nearly 200 years.

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Chapter

III

LEARNING AND CONDITIONING

Reading 9 IT'S NOT JUST ABOUT SALIVATING DOGS!

Reading 10 LITTLE EMOTIONAL ALBERT

Reading 11 KNOCK WOOD!

Reading 12 SEE AGGRESSION . . . DO AGGRESSION!

The area of psychology concerned with learning has produced a rather well-defined body of literature explaining the process underlying how animals and humans learn. Some of the most famous names in the history of psychology have made their most influential discoveries in this field—names that are easily recognized by those both inside and outside the behavioral sciences, such as Pavlov, Watson, Skinner, and Bandura. Picking a few of the most significant studies from this branch of psychology and from these researchers is no easy task, but the articles selected here can be found in nearly every introductory psychology textbook and are representative of the enormous contributions of these scientists.

For Ivan Pavlov, we take a journey back to the early 1900s to review his work with dogs, metronomes, bells, salivation, and the discovery of the *conditioned reflex*. Second, John Watson, known for many contributions, is probably most famous (notorious?) for his 1920 ethically challenged experiment with Little Albert, which demonstrated for the first time how emotions could be shown to be a product of the environment rather than purely internal processes. For the third study in this section, we discuss B. F. Skinner's famous demonstration of superstitious behavior in a pigeon and his explanation for how humans become superstitious in exactly the same way. Fourth, we examine the well-known "Bobo Doll Study," in which Albert Bandura established that aggressive behaviors could be learned by children through their modeling of adult violence.

Reading 9: IT'S NOT JUST ABOUT SALIVATING DOGS!

Pavlov, I. P. (1927). *Conditioned reflexes*. London: Oxford University Press.

Have you ever walked into a dentist's office where the odor of the disinfectant made your teeth hurt? If you have, it was probably because the odor triggered an association that had been conditioned in your brain between that smell and