Hypnotic History: A Reply to Critics

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Abstract
This article responds to comments on Kirsch, Mazzoni, & Montgomery (2007). Contrary to the perceptions of some commentators, the target article was not aimed at supporting a particular view of hypnosis. Instead, it was a reminder of a long accepted axiom in hypnosis research: the effects of hypnotic suggestions cannot be attributed to hypnosis unless it is demonstrated that the same suggestion does not produce the effect outside of hypnosis.

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There are two types of people in this world: those who dichotomize everything into two types and those who do not. There are also two types of commentaries that can be written about an article: those that comment on what was written in the article and those that comment on what was not written in the article. Contrary to Deirdre Barrett (2007), we have not denied that hypnosis can create compelling subjective experiences that might have powerful effects on behavior. Contrary to David Speigel (2007), we have not and do not claim that social influence is all that is involved in hypnosis. Indeed, we have never even used the phrase “social influence” in our writing. Although cultural beliefs must play a role in hypnotic behavior, there are certainly other important factors, including response expectancies and individual differences in the ability to experience the suggested phenomena (Kirsch, 1991).

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We did not equate hypnosis with suggestion, as claimed by Barrett (2007). In fact, we did just the opposite. Procedurally, hypnosis generally involves two components: 1) an induction ritual in which the subject is invited to enter hypnosis (often referred to as a trance state), and 2) one or more suggestions for other changes in experience (e.g., automatic movements, perceptual illusions, amnesia, and analgesia). Our article was geared toward reminding readers that these are two separable components, in other words, that suggestion alone does not equal hypnosis.

The motivation for our article was the increasing use of research designs in which hypnosis and suggestion are confounded, as if they were the same thing. Because they are not, one cannot claim that the effects of a suggestion are due to hypnosis, unless it is demonstrated that the same suggestion does not produce the effect outside of hypnosis, a principle that hypnosis researchers used to treat as axiomatic.

**Avoiding Confounds**

We noted in our article that in order to establish that a difference between the hypnosis and no-hypnosis conditions was in fact due to the induction of hypnosis, the suggestion has to be the same in both conditions. If it is not, there is an experimental confound between induction and suggestion, and it is impossible to determine which is responsible for the difference in outcome (Kazdin, 1992). We cited Kosslyn and colleagues (Kosslyn, Thompson, Costantini-Ferrando, Alpert, & Spiegel, 2000) as an example of a study in which the wording of suggestions was changed when the suggestions were given without a hypnotic induction. Specifically, in the hypnosis condition, subjects were given a hypnotic induction and then were asked to add or drain color from a stimulus. In the no-hypnosis condition, there was no hypnotic induction and the wording of the suggestions regarding color was changed. Instead of being asked to add or drain color, when subjects were in the no-hypnosis condition, they were asked to remember and visualize the stimulus in its other form. Thus, the presence or absence of a hypnotic induction was confounded with the way in which the suggestions were worded.

David Spiegel (2007) questions why this confounding renders the results ambiguous. They are ambiguous because it is impossible to know whether the difference in results were due to the induction of hypnosis or the change in wording of the suggestions. Two experimental factors were manipulated simultaneously. Thus, the authors’ conclusion that the “findings support the claim that hypnosis is a psychological state with distinct neural correlates” cannot be logically drawn from the study’s results. Instead, what the results show is that specific suggestions given in hypnosis produce experiences with particular neural correlates and that these changes in brain activity are not found when different suggestions are given outside of hypnosis. It remains to be determined whether experiences evoked by suggestions given outside of hypnosis produce the same neural pattern of neural activity as the same suggestions administered following a hypnotic induction.

**Slipping into Hypnosis**

Researchers sometimes change the wording of suggestions out of concern that subjects might inadvertently slip into a hypnotic or trance state, simply as a function of being given the suggestion. The solution of changing suggestion wording is not experimentally sound. Besides introducing a confound that makes the results uninterpretable, it does not ensure that people will not slip into hypnosis anyway. How, then, can the “slipping into trance” hypothesis be evaluated scientifically?
In the 1960s, self-report was the only way to evaluate the degree to which a person was in a hypnotic state. Hence, Hilgard and Tart (1966) used state reports to make sure that subjects in non-hypnotic conditions had not slipped into trance. Their findings indicated that people were able to respond to suggestions without feeling that they were in a trance state.

It can be argued that subjective reports cannot either prove or disprove the presence of an altered state of consciousness. Although they assess how deeply people feel to be hypnotized, they also strongly depend on subjective and cultural beliefs, and therefore can be manipulated by manipulating such beliefs. The consequence is that the fact that a person feels hypnotized does not mean that the person is hypnotized. Unless hypnosis is defined independently of subjective reports, no conclusions can be drawn about the state of hypnosis, nor about its depth.

Unlike the 1960s, today neuroimaging can be used to assess whether subjects are in a hypnotic state. But here too, it is important to keep in mind that suggestion does not equal hypnosis. Finding neural correlates of particular suggestions does not constitute evidence that the subjects were in a hypnotic trance when they experienced those suggestions. To document the presence of a trance state, one needs to find the pattern of brain activation that is produced by hypnotic inductions (including both relaxation and alert inductions), without the administration of any other suggestions. Neural correlates of the suggestion to enter hypnosis (i.e., trance induction without any further suggestions being administered) have been reported (Rainville, Hofbauer, Bushnell, Duncan, & Price, 2002). It remains to be determined whether these alterations in brain activity: 1) are different than such everyday cognitive states as normal focused attention, and 2) are necessary precursors of compelling subjective responses to suggestions. Finding both of these conditions to be true would constitute compelling support of strong versions of the altered state hypothesis.

**Miscellaneous Issues**

Herbert Spiegel provides a useful service in reminding us that hypnosis has nothing to do with sleep. The term ‘waking suggestion’ is a hold over from when hypnosis was thought to be a sleep-like state, as is the term ‘hypnosis’ itself. It is for this reason that we have generally avoided the term ‘waking’ in previous writings (Braffman & Kirsch, 1999), but as this was a historical review, we retained the terminology that was most commonly used by others. We also agree that neuroimaging and other neurophysiological data can prove to be crucial in understanding hypnosis. However the use of new techniques does not guarantee that one will obtain interpretable results. If suggestion and the induction of hypnosis are confounded in the design, even the most sophisticated neuroimaging results cannot be interpreted as evidence of hypnosis. As Frischholz notes (2007, p. 191), “there are numerous studies which indicate psychophysiological and neurophysiological differences between those that score high and low on various measures of hypnotic responsivity…But if there is no agreement about a theoretical or operational definition of hypnosis, there can be no agreement about what is or is not a hypnotic induction ceremony, or what is or is not a neurophysiological indicator of its presence.”

David Spiegel (2007) maintains that social cognitive theorists deny the subjective reality of the effects of suggestion. As evidence, he makes the following claim: “Spanos argued then that so-called hypnotic hallucinations would be semi-transparent illusions rather than robust obstructions to vision” (p.182). A semi-transparent illusion is, of course, a real subjective experience, but in fact, this is not what Spanos (1986) claimed. It was not Spanos, but Martin Orne (1959), in his classic article on artifact and essence in hypnosis, who noted
that some hypnotized subjects report suggested visual hallucinations as being transparent. Orne interpreted this as an example of “trance logic” and claimed that it was part of the essence of the hypnotic trance state. In contrast, Spanos (1986) interpreted transparency as an indication of incomplete responding due to insufficient hypnotic suggestibility. More highly suggestible subjects, Spanos noted, respond with solid hallucinations.

Phillips is entirely correct in noting that the increase in feeling hypnotized (from 1% to 32% of subjects) produced by a hypnotic induction in the Hilgard and Tart (1966) study is a robust effect. The suggestion to enter a hypnotic state (i.e., a trance induction) produces a subjectively real effect in 31% of the population, just as suggestions for automatic movements produce subjectively real effects in about 75% of the population, and the suggestion to hallucinate music seems to produce subjectively real effects in about 15% of the population (Kirsch, Comey, Reed, & Silva, 1995; Perugini et al., 1998). There has never been any dispute about this. The question that has been disputed is whether this subjectively reported trance state affects responses to other suggestions, and if so, how it does so. Barrett (2007) criticizes our article for characterizing the increase in response produced the induction as “relatively small.” Here is how Hilgard and Tart (1966, p. 196) characterized it:

The increase in responsiveness to suggestions over the waking state…is small “probably far less than the classical hypnotists would have supposed had the question ever occurred to them [Hull, 1933, p.298].” Hull’s conclusions of a significant but small gain following hypnotic induction have been verified by Weitzenhoffer and Sjoberg (1961) and by Barber and Glass (1962).

As Frischholz (2007) notes, Weitzenhoffer and Sjoberg (1961) reported a larger mean difference than have others, but Hilgard and Tart (1966) still characterized it as small. One should also note the reasons for the somewhat larger difference in the Weitzenhoffer and Sjoberg study. First, a substantially larger number of suggestions were used in that study than in the others. Second, subjects who responded to a suggestion without hypnosis did not receive that suggestion again after being hypnotized. Instead, it was assumed that they would also pass the suggestion in hypnosis. Subsequent data (Braffman & Kirsch, 1999) reveal that this assumption is not warranted; 25% of the subjects scored lower in hypnosis than in the non-hypnotic condition.

David Wark (2007) offers a hypothetical case history of a smoker who has repeatedly self-administered the suggestion “that was my last cigarette”, but continues to smoke. He enters therapy. The therapist suggests to him that “smoking brings poison to his body, he needs his body to live, that he owes his body respect,” and teaches him self-hypnosis, following which he successfully stops smoking. Does this demonstrate that the induction of hypnosis has had an effect? It does not. The success could have been due to many factors, including the additional suggestions about respecting his body, the use of a therapeutic ritual, or the possibility that this gentleman was finally ready to quit. The experimental literature (Green & Lynn, 2000) indicates that hypnosis does not add to the effectiveness of smoking cessation programs, although it does add to the effectiveness of therapy for some other problems in living (Kirsch, Montgomery, & Sapirstein, 1995).

Frischholz (2007) asks, “Is simply administering the pretest with no other instructions the same thing as administering it under imagination instructions?” He is undoubtedly correct in supposing that it is not. Nevertheless, suggestible individuals respond to suggestion regardless of whether imagination instructions are used (Hilgard & Tart, 1966).
We agree with both Frischholz (2007) and Herbert Speigel (2007) that individual differences are important in understanding hypnotic phenomena, but the existence of this trait does not imply the presence of a special background state of consciousness. Contrary to Amir Raz (2007), we think the altered state issue is still worth pursuing. As scientists, we are concerned to know how subjective, behavioral, and neuropsychological effects of hypnosis are brought about. Whether the causal chain includes the presence of a trance state remains an important aspect of this question. This dispute has generated considerable acrimony in the past, but it need not, as the discussion around Kallio and Revonsuo’s (2003) framing of this issue demonstrates.

Conclusion

In reading these commentaries, we were struck by the degree to which some authors have responded to previous articles (some of which were even written by other authors!), rather than to the content of the article that was the presumed focus of the commentaries (Kirsch et al., 2007). Our article was not part of a turf battle, nor was it an attempt to support a non-state view of hypnosis. Rather, we wrote the article to address a problem that confronts traditional state theories as well social cognitive theories. With the development and refinement of neuroimaging technology, the central issues raised by these theories can be investigated more easily. This technology holds potential for establishing whether there is an altered background state of consciousness that is needed for the production of subjective responses to at least some suggestions, or that enhances responsiveness to suggestion. Elsewhere, we take the view that neither of these is the case, but we are open to being proved wrong. We look forward to more work in this area, and we would like it to be done in a scientifically sound manner. To that end, the methodological conventions established by previous hypnosis scholars (e.g., Hull and Hilgard) are worth considering. Most particularly, the importance of designing and interpreting research that separates the effects of induction from the effects of suggestion is fundamental. As Barrett (2007) points out, hypnosis does not equal suggestions. So it is important to understand when an effect is due to one and when it is due to the other.

References


