Remembrance of Hypnosis Past

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Abstract

The history of the most enduring experimental design in hypnosis research is reviewed. More than 75 years of research converge to indicate that: 1) all of the phenomena produced in hypnosis by suggestion also can be produced by suggestion without the induction of hypnosis, 2) the induction of hypnosis produces a relatively small increase in responsiveness to suggestion, and 3) hypnotic and waking suggestion are highly correlated, in many cases rivalling the reliability of the suggestibility measure. The importance of these data to both clinical and experimental hypnosis is emphasized.

Keywords: Hypnosis, history, experimental design, hypnotic suggestion, waking suggestion.

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A search of the Internet for George Santayana’s oft cited quotation about the importance of history yielded the following variations:

- Those who cannot remember the past are condemned to repeat it.
- Those who cannot remember the past are doomed to repeat it.
- Those who do not remember the past are doomed to repeat it.
- Those who forget the past are condemned to repeat it.
- Those who forget history are condemned to repeat it.
- Those who forget history are doomed to repeat it.
- Those who don’t learn from history are condemned to repeat it.
- Those who are ignorant of history are condemned to repeat it.

Apparently, they are prone to misquote it as well. Hypnotic suggestion produces some pretty remarkable effects, including involuntary movements, partial paralyses, memory distortions, hallucinations, and profound analgesia. Initially, this was thought to be the result of magnetism. Later, it was attributed to the induction of a trance state. Later still, first clinicians, and then researchers, reported that the same responses could be obtained without the induction of hypnosis. This discovery generated a basic axiom of the research in hypnosis: “No behavior following hypnotic induction can be attributed to hypnosis unless the investigator first knows that the response in question is not likely to occur outside of hypnosis in the normal waking state” (Sheehan & Perry, 1976, p. 55).

In recent years, this axiom seems to have been forgotten. In study after study, suggestions are given in hypnosis (as operationalized by the administration of a hypnotic induction), and the resulting behavior is attributed to hypnosis (e.g., Freeman, Barabasz, & Barabasz, 2000; Smith, Barabasz, & Barabasz, 1996). Similarly, clinicians may induce hypnosis, administer suggestions, and then attribute subsequent changes to hypnosis. The effects that are observed when suggestions are given in hypnosis may indeed be due to hypnosis, but they also could be due to suggestion alone. Unless the effect of the same suggestion administered outside of hypnosis is controlled, it is impossible to know.

When controlling for the effect of nonhypnotic suggestion, it is crucial that the exact same suggestion is given in both the hypnotic and nonhypnotic conditions. People can be remarkably sensitive to the wording of imaginative suggestions. If the wording is not the same in both conditions (Iani, Ricci, Gherri, & Rubichi, 2006; Kosslyn, Thompson, Costantini-Ferrando, Alpert, & Spiegel, 2000), it can confound the nature of the induction of hypnosis and the nature of the suggestion. With such ambiguity, it is impossible to know whether differences in response are due to hypnosis or to differences in the wording of the suggestion.

The effect of hypnosis, over and above those of nonhypnotic suggestion, has been the topic of a substantial body of experimental research, spanning more than 75 years and using one of the oldest, and certainly the most enduring, experimental designs in hypnosis research. In this design, which Orne (1979) described as “the generally accepted approach to hypnotic research” (p. 523), the same suggestions are given to subjects in and out of hypnosis. Differences in response are attributed to the induction of hypnosis (although not necessarily to the presence of a hypnotic state).

This research tradition seems to have been forgotten by some, to the point that the most recent instances of its use (Braffman & Kirsch, 1999, 2001) have been described as the unveiling of a new research design (Nash, 2005). The purpose of this brief comment is to give credit where it is due; to remind researchers and clinicians alike of the history of this design,
and of the basic findings it has produced; and to consider the various interpretations of those findings that have been proposed.

**Hypnotic and Waking Suggestibility: A Historical Review**

In the 1920's researchers in Clark Hull's laboratory unveiled a new research design aimed at establishing the effects of hypnosis. The design consists of administering imaginative suggestions (i.e., the kind of suggestion that is used as items in most standard hypnotic suggestibility scales) with and without prior induction of hypnosis. When not preceded by a trance induction, the suggestions are termed waking or nonhypnotic suggestions. When preceded by an induction, they are termed hypnotic suggestions. Although the design is theoretically neutral and has been used by researchers with diverse theoretical orientations (Barber & Glass, 1962; Hilgard & Tart, 1966), it is most closely associated with Hilgard's (1965) altered state theory of hypnosis, so much so that Sheehan and Perry (1976) have referred to it as “Hilgard’s design” (p. 58).

The first study in which this design was used was reported in 1930 by Hull and Huse in an article entitled: “Comparative Suggestibility in the Trance and Waking States.” The study was later described by Hull (1933) as follows:

In essence, the procedure employed was very simple. It resolved itself into an experimental determination of whether subjects on the average are any more responsive to postural suggestions in the trance than in the normal waking state. It was merely necessary to measure repeatedly the length of time in seconds required to evoke the maximal postural reaction in each state, average the results, and then observe which condition yields the short times (p.288).

The Hull and Huse (1930) study was replicated in three subsequent experiments (Caster & Baker, 1932; Jenness, 1933; Williams, 1930), all of which produced consistent findings. As summarized by Hull (1933), the results indicated that “no phenomenon whatever can be produced in hypnosis that cannot be produced to lesser degrees by suggestions given in the normal waking condition” (p. 391).

Some 30 years later, the Hull studies were replicated and extended in three independent laboratories (Barber & Glass, 1962; Glass & Barber, 1961; Hilgard & Tart, 1966; Weitzenhoffer & Sjoberg, 1961), and in each of these studies, the methodology was further refined. Instead of measuring response time, these studies assessed the number of suggestions to which subjects responded in the waking and hypnotic conditions. Hilgard and Tart (1966) added a number of additional refinements, including assessment of trance depth reports, examination of order effects, and telling participants in the imagination condition that responding to waking suggestions would produce a hypnotic state. With respect to this last innovation, it should be noted that Hilgard and Tart (1966) considered even this condition (imagination plus expectation of hypnosis) to be nonhypnotic.

Despite these differences in methods, the results obtained in the 1960’s were the same as those summarized by Hull (1933): 1) all of the phenomena produced in hypnosis by suggestion were also produced by suggestion without the induction of hypnosis; 2) the induction of hypnosis produced a relatively small increase in responsiveness to suggestion; and 3) hypnotic and waking suggestion were highly correlated, in many cases rivalling the reliability of the suggestibility measure (Barber & Glass, 1962; Glass & Barber, 1961; Hilgard & Tart, 1966; Weitzenhoffer & Sjoberg, 1961). Indeed, the effect of inducing hypnosis was
so small that a within-subjects design was deemed necessary to detect it (Hilgard & Tart, 1966). The most recent experiments using this within-subject design were those conducted by Braffman and Kirsch (1999, 2001). The basic methodology of the Braffman and Kirsch studies was taken from those used in prior studies, and successfully replicated the results of those studies. The only substantive addition was to assess correlates of hypnotizability, with waking imaginative suggestibility statistically controlled. The reason for this addition relates to a concern that Andre Weitzenhoffer (1980) raised about the measurement of hypnotizability. Hypnotizability refers to individual differences in susceptibility to the effects of hypnosis. Recall, however, that an effect cannot be attributed to hypnosis unless the effects of nonhypnotic suggestion are controlled (Sheehan & Perry, 1976). Similarly, hypnotizability, as conventionally defined, cannot be measured without controlling for individual differences in nonhypnotic suggestibility (i.e., responsiveness to suggestions administered without prior induction of hypnosis). For that reason, Weitzenhoffer (1980) argued instruments like the Stanford Scales of Hypnotic Susceptibility (SHSS; Weitzenhoffer & Hilgard, 1959, 1962), which he had co-authored, are not really measures of hypnotizability, but rather of suggestibility. More specifically, they are measures of imaginative suggestibility, which is responsiveness to the kind of suggestions that are typically given in hypnosis. This means that the various correlates that had been found using these scales (e.g., absorption, fantasy proneness, and response expectancy) were correlates of suggestibility, but not necessarily of hypnotizability. Braffman and Kirsch (Braffman & Kirsch, 1999, 2001) found that these variables (and also simple reaction time) not only predicted suggestibility, but also hypnotizability (i.e., the change in suggestibility produced by a hypnotic induction). As this was the first time this had been demonstrated, Kirsch and Braffman (1999) subsequently described their study as “the first empirical study” of the correlates of hypnotizability, thereby inadvertently obscuring the historical roots of the basic design they had employed.

Interpretations of the Data

How are we to interpret the data obtained over the last 75 years showing such small differences in responses to hypnotic and nonhypnotic suggestion? The conventional interpretation is that the effect of hypnosis is to produce a relatively small increase in responsiveness to imaginative suggestion (e.g., Hilgard, 1965; Hull, 1933). As Hull phrased it:

> The only thing which seems to characterize hypnosis as such and which gives any justification for the practice of calling it a ‘state’ is its generalized hypersuggestibility. That is, an increase in suggestibility takes place upon entering the hypnotic trance. The difference between the hypnotic and the normal state is therefore quantitative rather than qualitative. (Hull, 1933, p. 391)

If this is correct, then it is suggestion, rather than hypnosis, that produces the involuntary movements, partial paralyses, and perceptual distortions that make hypnosis so fascinating. The hypothesized hypnotic state merely enhances those responses to a relatively small degree, “far less than the classical hypnotists would have supposed had the question ever occurred to them” (Hull, 1933, p. 298).

A more radical interpretation is that even these small effects are due to such factors as motivation, expectancy, and role involvement, rather than to an altered state of consciousness (e.g., Barber, 1969; Sarbin & Coe, 1972; Spanos, 1986). This interpretation is generally known as the sociocognitive or nonstate view of hypnosis. Note that these
theorists did not doubt that subjective changes were produced by hypnotic suggestion, as has sometimes mistakenly been claimed (e.g., Spiegel, 1998). They merely disputed whether or not those effects were due to or enhanced by an altered state of consciousness (i.e., the so-called hypnotic trance).

A third possibility is that the administration of an imaginative suggestion might lead subjects to slip into trance, even without a formal induction procedure (Hilgard & Tart, 1966; Hull, 1933). Some writers have taken this to extreme and interpreted responsiveness to suggestion as evidence that a person has slipped into trance (Barabasz & Barabasz, 1992), thus rendering the hypothesis circular. Nash (2005) has taken an even more extreme position, claiming that any suggestion administered after telling the subject that imaginative experiences will be suggested constitutes a hypnotic induction. He has further argued that this be formally incorporated into the definition of hypnosis, thus reframing the rigorous scientific examination of hypnotic phenomena initiated by Hull as patently invalid, and closing off this rich line of research to future investigators. From this point of view, data obtained using “Hilgard’s design” are not important theoretically, as they merely compare the effects of one hypnotic induction to another. Simply put, Nash’s (2005) approach to defining hypnosis would render controlled research on the underlying mechanisms of hypnosis impossible. This approach makes alternative explanations of hypnosis—especially the conception of hypnosis as a state that enhances waking suggestibility (Hilgard, 1965; Hull, 1933)—logically impossible, a practice that in Nash’s (2005) terms is called “vicious intellectualism” (p. 266).

Here too, the lessons of history are important. Although, Hull (1933) considered the possibility that initial suggestions might constitute hypnotic inductions, he then rejected it on the basis of disconfirmatory data (Hull, Patten, & Switzer, 1933; Patten, Switzer, & Hull, 1932). Additional disconfirmation was reported by Hilgard and Tart (Hilgard & Tart, 1966), who controlled for this possibility by frequently obtaining “state” reports while assessing responsiveness to imaginative suggestions. In one study (Hilgard & Tart, 1966, Experiment I), participants in the waking condition who reported feeling relaxed or drifting into hypnosis were brought back to their “usual, normal, wide-awake state” (p.198) before continuing. In a second study (Hilgard & Tart, 1966, Experiment II), state reports were obtained without any effort to keep participants from spontaneously slipping into hypnosis. In this second experiment, less than 1% of participants given imagination instructions reported feeling hypnotized, compared to 32% of participants given a hypnotic induction. So if people spontaneously “slip into hypnosis” when given imaginative suggestions, by and large, they are not aware of it.

There is just no wiggling out of it. It may be true that a hypnotic induction is itself a suggestion, but it is not just any suggestion. It is a suggestion that one is entering a special condition called hypnosis (Wagstaff, 1998). Perhaps someday, neurophysiological markers of a hypnotic state will be found, and perhaps they will be found to be a necessary precursor for the experience of at least some suggestive phenomena (Kallio & Revonsuo, 2003). Until that time, the most parsimonious interpretations of the data are those proposed by Hull, Barber, Weitzenhoffer, Sjoberg, Hilgard, Tart, Kirsch, and Braffman: The hypnotic state (if there is one) enhances the effects of suggestion to a moderately small degree.

Conclusions

Despite data attesting to its clinical effectiveness (Kirsch, Montgomery, & Sapirstein, 1995; Montgomery, David, Winkel, Silverstein, & Bovbjerg, 2002), hypnosis has been and remains marginalized. In part, this may be due to extravagant claims that have characterized
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the history of hypnosis. Most, if not all, of the effects of hypnosis may be due to suggestion. Discriminating the subjective, behavioral, and neurophysiological effects of hypnosis from those of suggestion requires an experimental design in which the exact same suggestion is given with and without the induction of the hypothesized hypnotic state. This used to be conventional, data-based wisdom within the field (Hilgard, 1965; Hull, 1933; Sheehan & Perry, 1976), but the lessons learned from those data increasingly have been neglected in recent times.

In pursuing this research, we may find that all of the effects observed in hypnosis are due to suggestion, but this would not diminish their importance. The effects of suggestion can be remarkable (Raz, Kirsch, Pollard, & Nitkin-Kaner, 2006; Raz, Shapiro, Fan, & Posner, 2002), and the induction of hypnosis may enhance those effects. This enhancement may itself be due to suggestion, but this does not render them any less real.

Finally, what did George Santayana say? The correct quotation is: “Those who cannot remember the past are condemned to repeat it” (Santayana, 1905, p. 284).

References

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