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CORRELATES OF HYPNOTIZABILITY: THE FIRST EMPIRICAL STUDY

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Abstract

Because all of the effects of suggestion can be obtained without inducing hypnosis, hypnotizability is not the same thing as suggestibility. Hypnotizability is the change in suggestibility produced by inducing hypnosis. However, almost all studies purporting to measure hypnotizability have neglected to control for nonhypnotic (that is, so-called 'waking') suggestibility. Thus, they have assessed the relation of suggestibility to various variables, but not the relation of hypnotizability to those variables. The one published study of the correlates of hypnotizability shows that it is predicted by expectancy and motivation, but not by absorption or fantasy proneness.

Key words: suggestibility, hypnotizability, absorption, fantasy proneness, response expectancy, motivation

The problem of understanding individual differences in response to hypnosis has been one of the most vexing dilemmas for scholars in the field. The basic facts have been clearly established. Individual differences are pronounced and generally account for more variance than situational factors. In the absence of interventions aimed at altering suggestibility, the test–retest reliability of measures of hypnotic responding is very high and remains so over periods as long as 25 years (Piccione, Hilgard and Zimbardo, 1989). The responsiveness of many, but not all, initially unresponsive subjects can be increased by means of cognitive behavioural learning procedures (Gorassini and Spanos, 1999) and possibly by a sensory isolation procedure as well (Barabasz and Barabasz, 1989). Responsiveness can also be altered by expectancy modification procedures that lead people to think that they are very responsive (for example, Wilson, 1967; Wickless and Kirsch, 1989; Kirsch, Wickless and Moffitt, 1999).

Throughout the history of research on the topic, the construct of individual differences in response to hypnotic suggestion has been termed 'hypnotizability'. Kirsch (1997a, 1997b), however, has argued that the term is misleading. It suggests that what is being measured is response to hypnosis. In fact, what is measured by so-called hypnotic susceptibility scales is participants' responsiveness to a particular type of suggestion. Their responsiveness to hypnosis plays a much smaller role in determining their scores on these scales.

The data on which this conclusion is based are derived from studies in which the same suggestions were given with and without the prior induction of hypnosis (reviewed in Kirsch, 1997b). In these studies, hypnotic inductions increased the mean level of responsiveness to suggestion by a significant but relatively modest degree.

The mean increase is about one to two points on 12-point scales such as the Stanford scales and their derivatives (Weitzenhoffer and Hilgard, 1959, 1962) and half a point on the seven-point Carleton University Responsiveness to Suggestion Scale (CURSS) (Spanos, Radtke, Hodgins, Bertrand and Stam, 1981). More important, the correlation between responsiveness to suggestion with hypnosis and responsiveness to suggestion without hypnosis is very high, ranging from .66 to .99, and generally either rivalling or exceeding the test–retest reliabilities of the scales.

Distinguishing hypnotizability from suggestibility

There have been two ways of interpreting the very high correlation between hypnotic and nonhypnotic imaginative suggestibility. One is to suggest that when people are given imaginative suggestions without a hypnotic induction, they spontaneously slip into a hypnotic trance (Hilgard, 1965). In this case, there is no such thing as nonhypnotic suggestibility, because anyone who is responding to an imaginative suggestion is presumed to be in a trance. The problem with this interpretation is that no one has been able to find reliable markers of this hypothesized trance state, let alone produce evidence that it is present whenever a person responds to an imaginative suggestion, regardless of whether hypnosis has been induced or even mentioned. In the absence of data indicating the presence of a trance, the slipping into hypnosis hypothesis becomes a meaningless tautology. People are hypothesized to be responding to suggestion because they have slipped into a trance, but the only reason for claiming they are in this trance is that they are responding to suggestion.

If we do not presume that anyone responding to suggestion has slipped into hypnosis, then there is only one remaining way to interpret the correlation between hypnotic and nonhypnotic suggestibility. The shared variance indicates that hypnotic suggestibility and nonhypnotic suggestibility are highly overlapping constructs. It also indicates that individual differences in hypnotic suggestibility are much more a function of nonhypnotic suggestibility than they are of hypnosis. Put another way, the scales used to measure 'hypnotizability' are much better measures of suggestibility than they are of response to hypnosis (also see Weitzenhoffer, 1980).

Conceptually, hypnotizability refers to individual differences in suggestibility as a function of the induction of hypnosis (Weitzenhoffer, 1980). If we want to measure it, we need to control for nonhypnotic suggestibility. This is rarely done. It is so rare that there are almost no published studies of hypnotizability and its correlates. What we have instead is a plethora of studies of hypnotic suggestibility, mislabelled 'hypnotizability'.

Referring to hypnotic suggestibility as 'hypnotizability' is not just inaccurate and misleading, it is downright silly. Just how silly it is can most clearly be appreciated by considering analogous situations (for example, Kirsch, 1997a, 1997b). Imagine, for example, that a group of researchers wishes to determine the correlates of successful weight loss. In study after study, they put people on diets and then correlate their post-diet weight with potential predictor variables, without controlling for differences in pre-diet weight. They find that post-diet weight is correlated with parents' weight, waist size, height and gender. They then conclude that short, thin women with thin parents have a natural ability to lose weight.

We suspect that the fallacy of this conclusion would be recognized immediately by virtually all members of the scientific community studying weight loss, and that the manuscripts of these researchers would never find their way into print. A similar fate

should await hypnosis researchers who commit the error of confusing hypnotic suggestibility with hypnotizability. Just as weight loss is the *change* in weight after the diet, hypnotizability is the change in suggestibility after inducing hypnosis. Measuring suggestibility after a hypnotic induction and calling it 'hypnotizability' is like assessing weight after a diet and calling it 'weight loss'. Neither of these makes any sense unless the pre-treatment data (that is, nonhypnotic suggestibility and pre-diet weight, respectively) are taken into account.

Types of suggestibility

If 'hypnotic suggestibility' is responsiveness to suggestions given after hypnosis has been induced, then one might consider using the term 'nonhypnotic suggestibility' to denote responsiveness to suggestions administered without the prior induction of hypnosis. Without further qualification, however, these terms are too broad. There are diverse types of suggestibility that differ from one another in the nature of the suggestions given, and these different types of suggestibility do not seem to be highly correlated with one another.

One type of suggestibility, for example, is placebo suggestibility, which refers to differences in responsiveness to physical substances or interventions that do not have the physical properties that recipients are led to believe they have. Unlike so-called 'hypnotic suggestibility', placebo suggestibility does not seem to be a stable trait. In fact, responsiveness to a placebo on one trial does not predict responsiveness to the same placebo on another trial. Closely related to placebo suggestibility is sensory suggestibility (Gheorghiu, Koch and Hübner, 1994). Tests of sensory suggestibility measure participants' subjective reactions to the suggestion that a physical change is taking place in the external environment (for example, that heat is being generated at very low levels).

Memory suggestibility (Mazzoni, in press) is yet another type of suggestibility. It is the tendency to respond to new information in such a way as to change one's memory about the past. Interrogative suggestibility (Gudjonsson, 1989) is a subcategory of memory suggestibility. It is the tendency to yield to leading questions during an interrogation about an event that one has witnessed or heard described.

One characteristic that is shared by most types of suggestion is that they are deceptive. They are aimed at convincing the person that the world is (or at least might be) different from the way it actually is. Placebos are inert, but are presented as substances that contain active medications. Leading questions provide false information about past events. Sensory suggestions are aimed at convincing the person that some aspect of the external environment is different from the way it actually is. In contrast, the suggestions that are administered in 'hypnotic susceptibility' scales are not deceptive. They are not aimed at convincing the person that the world outside of their experience has changed or is different from the way it actually is. Instead, hypnotized subjects are asked to engage in fantasies, leading to subjective experiences that are at variance with what they know to be objectively true. Often, they are explicitly instructed to imagine the suggested state of affairs (see, for example, the wording of suggestions in the CURSS and the Stanford scales). For this reason, Kirsch (1997b) has termed this type of suggestibility 'imaginative suggestibility'.

Imaginative suggestions are requests to experience an imaginary state of affairs as if it were real. These suggestions can be given in or out of hypnosis. Imaginative suggestibility is the degree to which the person succeeds in having the suggested experience. It can be assessed in or out of hypnosis. Responsiveness to other types of

suggestions can also be assessed with and without hypnosis. But the suggestions contained in the so-called 'hypnosis scales' are imaginative suggestions, and it is the responsiveness to these suggestions that has been mislabelled 'hypnotizability'. This is the reason for our current focus on the effects of hypnosis on imaginative suggestibility, and when we use the terms 'hypnotic suggestibility' and 'nonhypnotic suggestibility', it should be understood that we are referring to imaginative suggestibility, assessed in and out of hypnosis, respectively.

The first empirical study

Kirsch (1997a, 1997b) has attempted to convince the hypnosis community to be more careful in its use of terms. Hypnotic suggestibility, as measured by standardized scales, should not be called 'hypnotizability' or 'hypnotic susceptibility'. To date, this suggestion has been widely ignored. Even authors who have expressed agreement with Kirsch's argument continue to misuse these terms. Perhaps this is merely an indication of how difficult it is to change a linguistic habit. But there may also be another reason. The correct use of these terms leads to the disturbing and embarrassing conclusion that, despite decades of research purportedly devoted to the topic, we have almost no empirical information about individual differences in hypnotizability. With this dearth of data in mind, we have begun a programme of research aimed at establishing the correlates of hypnotic suggestibility, nonhypnotic suggestibility and hypnotizability. In our research, we define hypnotizability operationally in a way that is consistent with the traditional definition of the concept, that is, as the change in suggestibility produced by hypnosis. Specifically, it is assessed as hypnotic suggestibility with nonhypnotic suggestibility controlled. Thus, hypnotizability, as we operationalize it, measures individual differences in the effect of hypnosis on response to suggestion. To the best of our knowledge, our studies are unique in providing data on the correlates of this individual difference variable.

In the first study reporting data on the correlates of hypnotizability, as properly defined (Braffman and Kirsch, 1999), we assessed absorption, fantasy proneness, expectancy and motivation as predictor variables. Absorption is the tendency to become involved in everyday imaginative experiences. Fantasy proneness is the characteristic of having a rich and intense involvement in fantasy, both in childhood and adult life. These two highly related constructs have been linked to hypnotic suggestibility in many studies. In fact, they are the only personality variables that have been reliably associated with this type of suggestibility.

Method

First, absorption and fantasy proneness were measured on the most commonly used standardized scales (Tellegen, 1982; Wilson and Barber, 1983). Then, suggestibility was assessed in a second session. Participants were recruited for participation in the second session without being informed that it was in any way linked to the absorption and fantasy proneness scales they had completed. Also, there was no mention of hypnosis until after nonhypnotic suggestibility was assessed. This was done to prevent the 'holdback' effect that can occur when people know that they will later be reassessed during hypnosis (Zamansky, Scharf and Brightbill, 1964).

For the assessment of both hypnotic and nonhypnotic suggestibility, participants were given the seven suggestions contained in the CURSS (Spanos et al., 1981).

Nonhypnotic suggestibility was assessed first. Participants were told:

> In this part of the study, we want to assess your ability to use your imagination to experience various things that will be described to you on audiotape. Your ability to experience them depends largely on your willingness to be receptive and responsive to ideas and to allow these ideas to act upon you without interference. So all you will need to do is close your eyes, relax, and try to imagine the experiences that I will describe to you (Braffman and Kirsch, 1999: 579).

Then the seven CURSS suggestions were described, and participants rated their motivation and their expectancy for experiencing each of them. Motivation was assessed by asking participants to rate the degree to which they would like to experience the suggested effect. Expectancy was assessed by asking them to indicate the likelihood that they would in fact experience the suggested effect and display the suggested behaviour.

Next, the participants were told:

> In this second part of the study, we want to assess your ability to experience the same suggestions, only this time we will ask you to experience them with hypnosis. So in this version of the audiotape, the suggestions will be preceded by a hypnotic induction (Braffman and Kirsch, 1999: 579).

Motivation and expectancy were again assessed, followed by a hypnotic induction and administration of the same seven suggestions that had been given without hypnosis.

The effects of inducing hypnosis

As in previous studies, the effects of inducing hypnosis were relatively small. The mean number of suggestions passed in the imagination condition was 1.99. After a hypnotic induction, the mean score was 2.52, a gain of about half a suggestion. But the means don't tell the whole story.

Twenty-nine per cent of the subjects showed no change whatsoever as a function of hypnosis. They were just as responsive without hypnosis as they were with it. Some of these subjects were highly responsive in both conditions. Using the traditional terminology, they would be misidentified as 'high hypnotizables', despite the fact that the induction of hypnosis had little or no effect on their behaviour.

As in past research, following the induction, most people (46%) showed an increase in responsiveness to suggestion. For the most part, these changes were small. Very few participants showed large gains. These few, however, are the truly high hypnotizable subjects. In previous studies, they have been grouped together with highly suggestible subjects who do not respond at all to the induction of hypnosis, but who are, instead, highly suggestible in both hypnotic and nonhypnotic contexts.

A substantial minority (25%) showed a decrease in suggestibility following the induction. It is possible that this is merely random fluctuation. Alternatively, these might be termed 'negatively hypnotizable' people. They are the people on whom hypnosis has a negative effect.

Correlates of suggestibility and hypnotizability

Nonhypnotic imaginative suggestibility was significantly correlated with absorption, fantasy proneness, motivation and expectancy. A regression analysis indicated that

expectancy was the only unique predictor of nonhypnotic suggestibility. With the other variables controlled, the regression coefficient for expectancy as a predictor of suggestibility was .50.

Hypnotic suggestibility was predicted by the same variables as nonhypnotic suggestibility. This is to be expected, given the high correlation between hypnotic and nonhypnotic imaginative suggestibility. However, hypnotic suggestibility is not hypnotizability. To assess the relationship between hypnotizability and other variables, nonhypnotic suggestibility must be controlled. With nonhypnotic suggestibility controlled, absorption and fantasy proneness were no longer significant predictors of hypnotic suggestibility. Thus, absorption and fantasy proneness are correlates of imaginative suggestibility, but not of hypnotizability.

Although hypnotizability was not associated with either absorption or fantasy proneness, it was associated with both expectancy and motivation. A simultaneous regression analysis indicated that nonhypnotic suggestibility, motivation and expectancy made independent significant contributions to hypnotic suggestibility. Of these predictor variables, nonhypnotic suggestibility made the largest contribution. Taken together, these three variables accounted for 52% of the variance in hypnotic suggestibility.

Conclusions

In the Braffman and Kirsch (1999) study, the multiple R for the prediction of hypnotic suggestibility by nonhypnotic suggestibility, motivation and expectancy was .72. This rivals the reliability coefficient for the suggestibility scale that was used, suggesting that there is little left to explain. Instead, attention might more profitably be turned to discovering variables other than expectancy that make an independent contribution to nonhypnotic imaginative suggestibility. Although expectancy accounts for a substantial proportion of that variance, there is even more variance left unexplained. Also, the determinants of hypnotic response expectancies are an important topic of investigation.

In the meantime, we should choose our words more carefully than we have in the past. Calling imaginative suggestibility 'hypnotizability' can only create confusion for people new to the field and, in the long run, it carries the risk of making hypnosis scholarship an object of derision. Hypnosis is too important a phenomenon for us to allow that to happen.

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