THE EFFECTS OF SENSORY RESTRICTION ON 
SUSCEPTIBILITY TO HYPNOSIS: 
A HYPOTHESIS, SOME PRELIMINARY DATA, 
AND THEORETICAL SPECULATION

IAN WICKRAMASEKERA

Peoria Mental Health Clinic 
Peoria, Illinois

Abstract: The 16 Ss in the control and experimental groups were 
female college-freshman volunteers 18 to 22 years old. It was hypothe-
sized that a brief period of sensory restriction would enhance 
hypnotizability in the experimental group. The differences between 
the groups were statistically significant in the hypothesized direc-
tion. Theoretical implications for behavior modification and their 
possible applicability to psychotherapy are discussed.

The purpose of this pilot study was to determine the effects of a 
brief period of sensory restriction on susceptibility to hypnosis as 
measured by Forms A and B of the Stanford Hypnotic Susceptibility 
Scale (SHSS: A and B) of Weitzenhoffer and Hilgard (1959). Until 
recently (Pascal & Salzberg, 1950; Sachs & Anderson, 1967) hypnot-
izability had been regarded as generally unmodifiable (see Hilgard, 
1965).

The psychoanalytic model of Gill and Brennan (1959) would pre-
dict an enhancement of hypnotic susceptibility by sensory restriction 
procedures. From their model it may be deduced that sensory restric-
tion would intensify the kind of "regression" occurring under hypnosis.
Curiously enough a social-learning motivational model would seem to 
lead to an identical prediction, but for different reasons. A number of 
experiments with children and adults (Bexton, Heron, & Scott, 1954; 
Cooper, Adams, & Gibby, 1962; Gewirtz & Baer, 1958a, 1958b; Gibby, 
Adams, & Carrera, 1960; Heron, 1961; Paivio, 1963; Staples & Walters, 
1961; Stevenson & Odom, 1962; Suedfeld, 1964; Walters & Karal, 
1960; Walters, Marshall, & Shooter, 1960; Walters & Ray, 1960) 
have shown that social isolation and sensory restriction procedures 
enhance the acquisition of simple psychomotor tasks, verbal condi-
tioning, suggestibility in the autokinetic situation, susceptibility to

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courage, support, and help with the design of this study and also to E. R. Hilgard for some suggestions regarding design.
social influence, and susceptibility to propaganda and psychotherapy. These studies suggest that a similar procedure may also enhance hypnotic susceptibility.

For the present study it was hypothesized that half an hour of sensory restriction would significantly increase susceptibility to hypnosis and that there would be no significant increase in susceptibility to hypnosis in a control group.

Method

Subjects

The Ss in this study were 16 single female college freshmen between the ages of 18 and 22 who volunteered to take a test of susceptibility to hypnosis for a payment of $2.50 in response to a classroom announcement. The announcement read by E said, “We are doing research on hypnosis. Any female student who volunteers about 2½ hours of her time for this project will be paid $2.50.”

Procedure

The Ss were randomly assigned to control and experimental groups, with eight Ss in each group. All Ss were pretested with the SHSS:A and asked to return the next day. The SHSS:A involves a standardized procedure of hypnosis induction followed by 12 carefully timed tests of gross motor behavior. The score represents the number of tests passed. The scale is administered individually and consumes about 55 minutes.

Posttesting for the experimental Ss was immediately preceded by delivery of a masking tone through headphones and restriction of visual stimuli through the use of a pair of goggles with lenses painted over with three heavy coats of black paint. The Ss also wore heavy cotton gloves. The experimental Ss were read the following statement by E’s female assistant: “I will now put this apparatus, headphones, goggles and gloves, on you. Please remain as motionless as possible while wearing them.” Questions from Ss were responded to by merely repeating the above statement. All experimental Ss were placed in the above sensory-restriction condition for half an hour. No explanations or suggestions regarding the expected effects of the procedure were given either to Ss or to E’s assistant, who timed and scored the items on the SHSS. The SHSS itself was administered by E.

When the control Ss arrived, they were simply asked to come back in half an hour.

Posttesting of all Ss was done with the SHSS:B, a 12-point scale
statistically equivalent to the SHSS:A. To control the bias due to change in test administration skill resulting from increasing practice on the part of E, experimental and control Ss were tested alternately.

Results

Table 1 presents the pre- and posttest scores and means on the SHSS:A and SHSS:B of the two groups.

The difference scores between the SHSS:A and SHSS:B were analyzed with the Wilcoxon matched-pairs signed rank test. A difference significant at the .01 level for a one-tailed test was obtained in the case of the experimental group. A similar analysis yielded a nonsignificant difference for the control group.

A Mann-Whitney U test of the significance of the difference between the posttest scores yielded a significant difference ($p = .007$). A similar analysis yielded a nonsignificant difference between pretest scores.

Discussion

The very small size of this sample necessitates caution in drawing conclusions and generalizing from these data. A study with a larger number of Ss is planned. The possibility of E bias in the administration of even a standardized scale like the SHSS:A and B must be considered. Also, E’s knowledge of the assignment of Ss to experimental and control conditions may have influenced these results.

Sensory deprivation is an unpleasant procedure, and the fact that the experimental Ss voluntarily continued under these conditions may

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TABLE 1

Pre- and Posttest Scores and Means on the Stanford Hypnotic Susceptibility Scale
have increased the general interpersonal influence of E. A control for this may include subjecting the control group to an equally unpleasant procedure which does not include sensory deprivation per se. The independent variable (sensory restriction) in this study is a rather gross one and the need for more precise parametric studies of it is recognized.

A structured interview of all Ss immediately after the posttesting revealed that only one S was familiar with the results of sensory deprivation studies and had associated our half-hour experimental procedure with them. Overtly this S manifested the greatest amount of restlessness during the restriction procedure, and she claimed that she was "expecting" to experience hallucinations, but she did not report any. It was this S who manifested the most dramatic increase (8 points) on posttesting. It is, of course, possible that this large increase was a chance phenomenon. The scoring manual reports that "more than nine tenths [of all subjects] score within three points of the first day" (Weitzenhoffer & Hilgard, 1959, p. 53). In any case, experimental control of this expectancy variable is planned for a subsequent study.

Theoretical Speculation on Possible Implications for Behavior Modification

If it could be shown that hypnotic susceptibility is enhanced by a procedure that also enhances verbal conditioning and simple learning, then a start would have been made in the direction of discovering if hypnosis shares additional parameters with learning and motivation. This, of course, was the direction of Hull's (1933) pioneering research in experimental hypnosis.

Reports (Frank, 1961; Goldstein, 1962; Jackson, 1960; Orne, 1962, 1964; Platonov, 1959) have indicated the power of "demand characteristics" (Orne, 1959), or expectancies stemming from explicit or implicit suggestions, to affect the results of both psychological experiments and psychotherapy. Imber, Frank, Gliedman, Nash, and Stone (1956) have reported a positive relationship between suggestibility and stay in psychotherapy. Heller (1963) implied that "good" psychotherapy patients and "good" Ss in laboratory social psychological research on persuasion are notably similar. Frank (1961) reported that psychotherapeutic gains effected by an inert placebo have been maintained up to 5 years. Frank, Nash, Stone, and Imber (1963) reported a significant overall improvement in 109 psychiatric outpatients receiving a placebo. Paul (1966) reported that a placebo treatment was as powerful a therapeutic tool as experienced psychologists
using an "insight"-oriented treatment procedure. Rosenthal and Fode (1963) reported that expectancies affect even laboratory research with animals.

The placebo effect is a uniquely and purely psychological effect, and, hence, it makes sense to use it rather than eliminate it in psychological treatment procedures (Patterson, 1966). Krasner and Ullman (1965, p. 230) noted that "it would seem reasonable to maximize placebo effects in the treatment situation to increase the likelihood of client change." Freud's (1904) recognition of the importance of what today is called the placebo effect is clearly indicated by the following statements.

In the first place, let me remind you that psychotherapy is in no way a modern method of healing.... In Löwenfeld's instructive work (Lehrbuch der gesamten Psychotherapie) many of the methods of primitive and ancient medical science are described. The majority of them must be classed under the head of psychotherapy; in order to effect a cure a condition of 'expectant faith' was induced in sick persons.... We have learned to use the word 'suggestion' for this phenomenon, and Möbius has taught us that the unreliability which we deplore in so many of our therapeutic measures may be traced back actually to the disturbing influence of this very powerful factor.... It is disadvantageous, however, to leave entirely in the hands of the patient what the mental factor in your treatment of him shall be. In this way it is uncontrollable; it can neither be measured nor intensified. Is it not then a justifiable endeavor on the part of a physician to seek to control this factor, to use it with a purpose, and to direct and strengthen it? This and nothing else is what scientific psychotherapy proposes [pp. 250-251].

Hypnosis may provide a convenient means of manipulating the faith, hope, and trust which are the essence of the placebo effect. It seems that hypnosis is one of the oldest purely psychological techniques for manipulating human expectancies. But the fact that under normal circumstances only a limited number of people are hypnotizable contributed to its neglect. The development of routine rapid techniques (sensory restriction) of increasing the proportion of hypnotizable patients might render hypnosis more widely useable as a pre-treatment procedure. Essentially, we are suggesting that patient expectancies be appropriately "primed" through hypnosis prior to actual treatment to increase the patient's readiness for the kinds of learning that await him in psychotherapy.

Susceptibility to social influence and to propaganda have been shown to be enhanced by isolation procedures, and the anxiety arousal (Walters, Marshall, & Shooter, 1960) interpretation of this effect seems to have the widest support. If prior isolation procedures could also be shown to facilitate the effects of psychotherapy and counseling,
then a start would have been made in the direction of demonstrating that such apparently discontinuous procedures as psychotherapy, hypnosis, thought reform (Frank, 1961), or "brainwashing," counseling, and verbal conditioning share at least one gross motivational parameter. Clinical lore (Wolberg, 1954) and theory (Freud, 1904; Rogers, 1951) already suggest that a minimum level of patient anxiety is necessary for a positive psychotherapeutic outcome.

Mowrer (1960) has previously suggested that all learning is "sign learning" and that effective manipulation of the contingencies of "fear" and "hope" facilitate learning. Priming procedures or "setting events" (Kantor, 1958) like isolation and hypnosis are aimed at such contingencies, and their use may do something to increase the effectiveness of current psychological treatment procedures. Specifically, hypnosis may be useful to heighten the patient’s faith and hope in the therapist, and sensory restriction may prove effective when necessary in inducing that level of anxiety arousal or social deprivation which will most accelerate the rate of therapeutic learning.

References


Gewirtz, J. L., & Baer, D. M. Deprivation and satiation of social reinforcers as drive conditions. J. abnorm. soc. Psychol., 1958, 57, 165-172. (b)


Orne, M. T., & Schum, K. E. The contribution of nondeprivation factors in the production of sensory deprivation effects: The psychology of the “panic button.” *J. abnorm. soc. Psychol.*, 1964, 68, 3–12.


Efectos de la Restricción Sensorial sobre la Hipnotizabilidad:

Hipótesis, Datos Preliminares y Especulación Teórica
Ian Wickramasekera

Resumen: Se postuló que la restricción sensorial podría aumentar la hipnotizabilidad. Para demostrarlo se tomó un grupo control y otro experimental, incluyendo ambos 16 muchachas universitarias voluntarias de edades que fluctuaban entre 18 y 22 años. Los resultados demostraron lo postulado con significación estadística. Se discuten los resultados tanto por sus implicancias teóricas para modificar la conducta y su posible aplicación en psicoterapia.

Die Effekte von sensorischen Hemmungen auf Hypnoseempfänglichkeit:
Eine Hypothese, einige vorläufige Werte und theoretische Spekulation
Ian Wickramasekera