HYPNOTIZABILITY, ABSORPTION, AND SUBSCALES OF THE DISSOCIATIVE EXPERIENCES SCALE IN A NONCLINICAL POPULATION

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ABSTRACT

This study examined how the characteristics of hypnotizability and absorption relate to three sub-dimensions of dissociation, as measured by three subscales of the Dissociative Experiences Scale (DES); Bernstein & Putnam, 1986). Fifty-three normal volunteers completed the DES and the Tellegen Absorption Scale (TAS) (Tellegen & Atkinson, 1974), and were assessed for hypnotizability on the Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C) (Weitzenhoffer & Hilgard, 1962). The three subscales of the DES include Amnestic Experiences, Absorption, and Depersonalization (Carlson et al., 1990). Of the three DES subscales, the DES Absorption subscale was found to correlate strongly with both the SHSS:C and TAS, the DES Depersonalization subscale less strongly, and the DES Amnestic Experiences subscale only weakly with the SHSS:C and not at all with the TAS. These findings are generally consistent with those of previous studies (Frischholz et al., 1991; 1992). Results are interpreted as supporting J.R. Hilgard's (1970) theory of two developmental pathways to hypnotizability, one through absorption and the other through experience of trauma.

INTRODUCTION

For over a century, the capacity for dissociation has been believed to be related to the ability to experience hypnosis. The relationship between them has been examined since the nineteenth century, when investigators such as Janet (1889) implicated self-hypnotic phenomena in multiple personality and hysteria. In recent years, the relationship between hypnotizability and dissociative psychopathology has been investigated (e.g., Bliss, 1984; Spiegel, Hunt, & Dondershine, 1988) through the use of standardized measures of hypnotic capacity.

The development of a reliable and valid self-report measure of dissociation, the Dissociative Experiences Scale (DES) (Bernstein & Putnam, 1986), has contributed to research interest in this area. A number of diverse studies correlating the DES with hypnotizability scales have produced correlations ranging from r=.08 to r=.61, varying with the population under study and with the context in which the DES is given (Carlson & Putnam, 1989). On average, the DES tends to correlate at significant levels with standardized hypnotizability measures.

Recent research with the DES suggests the existence of three distinct sub-dimensions of dissociation. A factor analysis was performed on DES data from 1,574 subjects (Carlson et al., 1990), approximately 25% of whom were normal controls, and the rest of whom suffered from schizophrenia, anxiety, or neurological, dissociative, or affective disorders. Principal components analysis produced three subscales, which together accounted for 49% of the variance and suggested three distinct and independent constructs that could be considered sub-dimensions of dissociation. These three subscales include amnestic experiences, absorption and imaginative involvement, and depersonalization and derealization. These subscales are similar, although not identical, to those found in other studies (e.g., Frischholz et al., 1991; Ross, Joshi, & Currie, 1991).

If indeed there exist separate "dimensions" of dissociation, examining the different relationship of each dimension to hypnotizability could yield new insight into the larger question of the relationship between hypnosis and dissociation. The present study correlated each of the three DES subscales with hypnotizability, as measured by the Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C; Weitzenhoffer & Hilgard, 1962). Since absorptive capacity is believed to be related to hypnotizability (e.g., J.R. Hilgard, 1970; Roche & McConkey, 1990; Wilson & Barber, 1983), we also investigated the relationship of the DES subscales to absorption, as measured by the Tellegen Absorption Scale (TAS); Tellegen & Atkinson, 1974).

It was predicted that findings would be consistent with those of: 1) Frischholz et al. (1991), which showed that the DES and its subscales correlated significantly with the TAS and 2) Frischholz et al. (1992), which showed that the DES and the Absorption subscale correlated significantly with the Harvard Group Scale of Hypnotic Susceptibility (Shor & Orne, 1962).

METHOD

Subjects

Subjects were 20 men and 33 women, recruited through the National Institutes of Health normal volunteer office. The subjects ranged in age from 17 to 60 years, with a mean age of 30.4 years. In a semi-structured interview, potential subjects were screened by a psychiatrist (D.B.) for past or

present psychiatric illness, history of trauma, family history of psychiatric illness, current substance abuse or physical illness, and false preconceived ideas about hypnosis. Subjects manifesting any of these were excluded from the study. No subjects had prior experience with hypnosis.

Instruments

The Stanford Hypnotic Susceptibility Scale, Form C (Weitzenhoffer & Hilgard, 1962), consists of twelve task items, arranged in order of increasing difficulty, administered individually following induction of hypnosis. Test items include tasks such as Hand Lowering, Fly Hallucination, and Post-hypnotic Amnesia.

The Tellegen Absorption Scale (Tellegen & Atkinson, 1974) is a 34-item true-or-false self-report questionnaire designed to measure experiences of "hypnotic-like" occurrences where one's attention is completely absorbed by external phenomena, such as movies, or by internal events, such as fantasies. Typical items are "When I listen to music I get so caught up in it that I don't notice anything else," and "If I wish, I can imagine some things so vividly that they hold my attention as a good movie or story does."

The Dissociative Experiences Scale (Bernstein & Putnam, 1986) is a 28-item self-report visual analog scale designed to measure experiences of dissociative phenomena and to screen for dissociative disorders such as multiple personality disorder. Subjects make a mark on a horizontal line below each item, to indicate what percentage of the time, between 0% and 100%, they have that particular experience. Three subscales have been identified. The first subscale of the DES (Carlson et al., 1990) describes amnestic experiences, and includes items 3, 4, 5, 6, 8, 10, 25, and 26. A typical item (#3) is, "Some people have the experience of finding themselves in a place and having no idea how they got there." The second subscale describes absorption and imaginative involvement, and includes items 2, 14, 15, 16, 17, 18, 20, 22, and 23. A typical item (#5), is, "Some people have the experience of not being sure whether things that they remember happening really did happen or whether they just dreamed them." The third subscale describes depersonalization and derealization experiences, and includes items 7, 11, 12, 13, 27, and 28. A typical item **(#13)** is, "Some people have the experience of feeling that their body does not seem to belong to them".

Procedure

During an initial interview, all subjects were screened as described above. Subjects who met the criteria for inclusion

TABLE 1
Ranges, means, and standard deviations
of TAS, SHSS:C, and overall and subscale DES scores

SCALE	N	RANGE	(MAX.)	MEAN	S.D.+/-
SHSS:C	50	3 - 11	(12)	7.1	2.1
TAS	53	1 - 34	(34)	19.6	6.8
DES (Overall)	52	1 - 57	(100)	13.8	12.5
Amenistic	52	0 - 35	(100)	6.3	8.6
Absorption	52	0 - 85	(100)	21.0	19.7
Depersonalization	52	0 - 55	(100)	5.3	10.5

TABLE 2
Stanford-C and Tellegen Absorption Scale
vs the Dissociative Experiences Scale and its Subscales

SCALE	SHSS:C	TAS
SHSS:C		.56**
DES (Overall)	.34**	.44**
Amnesia Subscale	.26*	.18
Absorption Subscale	.40**	.52**
Depersonalization Subscale	.34**	.44**

*P<.05
**P<.01

described above were invited back for a second interview, at which they completed the TAS and DES and subsequently were administered the SHSS:C. All inductions were performed in the morning, in identical clinic rooms, by the same psychiatrist (D.B.), to control for the effects of situational variables.

RESULTS

Table 1 presents ranges, means, and standard deviations of SHSS:C, TAS, overall DES, and the three DES subscale scores. SHSS:C data were gathered on 50 subjects; three subjects declined the hypnotic induction. TAS data were gathered on all 53 subjects. DES data were gathered on 52 subjects; one subject failed to fill out the questionnaire properly. Table 2 presents correlations between the overall DES and subscale DES scores, the SHSS:C scores, and the TAS scores.

DISCUSSION

Of the DES subscales, the Absorption subscale correlated most strongly with both the SHSS:C and the TAS. The Depersonalization subscale correlated moderately with the SHSS:C and more strongly with the TAS. The Amnestic subscale barely correlated at the $p < .05$ level with the SHSS:C and did not correlate at a statistically significant level with the TAS.

Correlations between the TAS and the DES and its subscales were consistent with those found by Frischholz et al (1991). Their results were of a magnitude comparable to those found in the present study, and the relative order of the correlations of the three subscales was identical, i.e., both studies found that the correlation with the Amnestic subscale was the weakest and the correlation with the Absorption subscale the strongest. The correlation between the Amnestic Subscale and the TAS in the present study was not significant, however.

The present findings concerning the hypnotizability scales and the DES are not entirely consistent with the study by Frischholz et al. (1992). Both studies found significant correlations between hypnotizability and the overall DES score and between hypnotizability and the Absorption subscale. The present study, however, found significant correlations between hypnotizability and the Depersonalization subscale, and between hypnotizability and the Amnestic subscale, which Frischholz et al., did not. Also, the correlations with hypnotizability obtained in the present study were considerably stronger across all subscales.

These discrepant findings may be partly explained by the fact that the present study used a different index of hypnotizability than did Frischholz et al (1992), who used the Harvard Scale (HGSHS:A) (Shor & Orne, 1962). The SHSS:C has several "difficult" items such as Anosmia to Ammonia and Negative Hallucination, which are only completed by highly hypnotizable subjects and which are not included on the HGSHS:A. It may be that those more difficult items, which involve greater distortions and alterations of perceived reality, are more strongly associated with depersonalization and amnesic experiences, the more pathological sub-dimensions of dissociation. If so, those items would correlate more strongly with the Amnesia and Depersonalization subscales, explaining why the present study found significant correlations between these two subscales and hypnotizability, where Frischholz et al., (1992) did not.

We may also note that Frischholz et al, (1992) used slightly different DES subscales. Although the items comprising the Depersonalization subscales were identical in both studies, the Amnestic subscale used by Frischholz et al. did not include items 6 and 10, and the Absorption subscale used by those authors did not include items 16, 22, and 23. However, nothing about these particular items suggests why their omission would have led to these discrepant findings, especially since the most discrepant findings concerned the Depersonalization subscale, which was identical between studies, and the least discrepant finding involved the Absorption subscale, which differed in three items.

It is not clear why the correlations with the SHSS:C in the present study were so much larger across all subscales than those of Frischholz et al, (1992). Our unusually large correlation between the TAS and SHSS:C ($r = .56$) may be accounted for in part by "context" effects such as those described by Council, Kirsch, and Hafner (1986), and by deGroot, Gwynn, and Spanos (1988), which were not controlled for in this study. Authors of those studies suggested that the administration of absorption questionnaires in the context of a hypnotic induction might lead to unconscious expectancies on the part of subjects concerning their own hypnotizability, which would in turn influence their hypnotic behavior and lead to inflated correlations. However, others have suggested that the influence of such context effects is small to nonexistent (Nadon, Hoyt, Register, & Kihlstrom, 1991). In any case, such postulated effects do not account for the fact that correlations in the present study between hypnotizability and DES scores were larger than those of Frischholz et al. (1992) across all subscales, because those authors apparently did not control for such effects either.

The moderate correlations obtained between the SHSS:C and TAS and the Depersonalization subscale are intriguing. Perhaps absorptive capacity, and to a lesser extent, hypnotizability, may be related to one's tendency to use depersonalization as a psychological defense mechanism. A recent study by Smyser, Jacobs, and MacKinnon (1993), which examined this relationship using a different index of depersonalization, found absorption, but not hypnotizability, to be a significant predicator of depersonalization.

The weakest correlation was that obtained between the SHSS:C and the DES Amnestic Experiences subscale ($r = .26$). One possible explanation for the smaller size of this correlation is that our result is an artifact of the measures used. Over half of the 12 items on the SHSS:C arguably reflect absorptive capacity, whereas only one item (#12) reflects amnestic capacity. Since all scale items are equally weighted, it seems that the SHSS:C is strongly loaded in favor of absorption over amnestic capacity. Also, the amnesia item on the SHSS:C measures voluntary amnesia, which can be experienced by highly hypnotizable normal subjects; the amnestic experiences which the DES is designed to measure are involuntary, and hence pathologically dissociative. For

a discussion of the distinction between voluntary and involuntary dissociation, the reader is referred to Carlson and Putnam (1989) and Gruenewald (1986).

Another likely explanation for this low correlation is that it is a function of the population under study. We selected subjects without histories of trauma in our initial screen. Amnesic experiences such as those observed in severe dissociative disorders such as multiple personality disorder. Posttraumatic stress disorder, and psychogenic amnesia tend to be associated with traumatic experiences. In a subject pool such as ours, selected for non-traumatized individuals, one might expect that there would be fewer individuals who experience amnesia, and therefore a lower correlation between amnesia and hypnotizability, than in a population not so selected.

This account is compatible with J.R. Hilgard's (1970) theory of two developmental pathways to hypnotizability. Hilgard proposed that hypnotizability can be caused by either of two factors: 1) the maintenance of childhood imaginative involvements (absorption) into adulthood; or 2) experiences of extreme trauma, for example sexual abuse during childhood. This theory is supported by E.R. Hilgard's (1968) finding of a bimodal distribution of hypnotizability scores. It seems likely, then, that our study selected out individuals who had attained hypnotizability through the second pathway (trauma), and that almost all of the hypnotizable individuals in our population had attained hypnotizability through the first pathway (absorption). Further study in a population of individuals with history of trauma would be valuable to assess these speculations.

Another finding which supports the notion of two pathways is the lack of correlation between the DES Amnestic subscale and the TAS. This suggests that both absorption and amnestic experiences seem to be related, even if weakly, to hypnotizability, but not to one another. This can also be taken as evidence in favor of the notion of two separate, and to a certain extent unrelated, pathways to hypnotizability. ■

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