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Personality Correlates of Hypnotic Susceptibility:
Needs for Achievement and Autonomy, Self-Monitoring,
and Masculinity-Femininity

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Running Head: Correlates of Hypnotizability

Abstract

A total of 1300 subjects in six samples completed a short battery of personality questionnaires and the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A). Measured hypnotic susceptibility correlated significantly with scores on Tellegen's Absorption scale (mean $r = .27$), but not with the Achievement and Autonomy scales of the PRF (mean $r_s = .11$ and $.09$, respectively), or with Snyder's Self-Monitoring scale (mean $r = .01$). Subject gender did not moderate the correlations between personality and hypnosis; nor did achievement, autonomy, or self-monitoring scores moderate the correlation between absorption and hypnotizability. Overall, women scored slightly higher than men on HGSHS:A. A further analysis employing Bem's Sex-Role Inventory showed only that the hypnotizability scores of undifferentiated men and women were depressed relative to their androgynous counterparts.

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One of the cardinal features of hypnosis is the presence of substantial individual differences in hypnotic susceptibility. Scores on standardized work-samples of hypnotic experiences such as the Stanford Hypnotic Susceptibility Scales tend to follow a normal distribution, so that a representative sample of the population contains few hypnotic "virtuosos" and few who are entirely refractory to hypnosis (Hilgard, 1965). Developmental studies reveal lawful growth of hypnotizability during childhood (London & Cooper, 1969; Morgan & Hilgard, 1973), while reliability studies indicate substantial stability over both short and long intervals during young adulthood (Hilgard, 1965; Morgan, Johnson, & Hilgard, 1974). Finally, it has proved difficult to demonstrate a meaningful enhancement of hypnotic susceptibility, provided that the investigator establishes a proper baseline level of performance (Gur, 1974; Perry, 1977). This pattern of findings strongly indicates that hypnotic susceptibility is a stable characteristic of the individual.

Following a pattern established for personality research more than a half century ago, appreciable effort has been devoted to examining the relation between measured hypnotic susceptibility and other dispositional features of the person. However, hypnotizability does not appear to be correlated with the sorts of personality characteristics measured by such standard paper-and-pencil instruments as the California Psychological Inventory, Edwards Personal Preference Schedule, Guilford-Zimmerman Temperament Survey, Leary's Interpersonal Check List, Maudsley Personality

Inventory, Minnesota Multiphasic Personality Inventory, and Sixteen Personality Factor Questionnaire (see reviews by Barber, 1964; Hilgard, 1965; Shor, Orne, & O'Connell, 1966). The correlations typically obtained in these studies do not even approach the magnitude of the "personality coefficient" of .30 found by Mischel (1968) to be the representative correlation between scores on a personality questionnaire and actual behavior.

One way to account for these consistent negative findings is to hold that hypnotizability is isolated from the rest of the personality. However, a careful clinical-interview study of hypnotizable and insusceptible subjects by Hilgard (1979), as well as a number of questionnaire studies (e.g., Shor, Orne, & O'Connell, 1962; Tellegen & Atkinson, 1974), indicates that this is not the case. The strongest finding in all of this research is that hypnotizable individuals have a high capacity for involvement in imaginative and absorbing activities outside of hypnosis, and have a history of imaginative involvements reaching far back into childhood. Hilgard's (1979) study also revealed aspects of individual approaches to imaginative and absorbing experiences which were suggestive of more general patterns of motivation, interest, and attitude differentiating the hypnotizable from the insusceptible. For example, among students who participated in athletics or adventuresome activities such as mountain climbing, hypnotizability was associated with enjoyment of the activity for its own sake, rather than competitive interest; among science majors and readers of science fiction, hypnotizability was contraindicated by the adoption of strongly critical attitudes.

Another possible criticism of the past research is that the particular methods adopted have not been adequate to the task of prediction. For example, many of the instruments employed in assessing the predictor variables may be criticized from a purely psychometric viewpoint as lacking in such essential properties as internal consistency and construct validity (Jackson, 1971). Moreover, most of the studies have relied on simple bivariate correlations rather than more complex prediction models employing multiple regression and moderator or suppressor variables (Wiggins, 1974).

This paper reports some results of a continuing exploration of the personality correlates of hypnotic susceptibility. During routine screening for hypnotizability, subjects have completed a short battery of questionnaires tapping broad personality constructs specifically selected for their demonstrated or possible relevance to hypnosis. For example, individual differences in absorption and imaginative involvement consistently have been shown to relate to hypnotizability (Hilgard, 1979); all samples completed Tellegen's Absorption Scale (Tellegen & Atkinson, 1974), which typically yields significant correlations with hypnotizability. Other personality questionnaires were administered only to subsets of the entire sample. Hilgard's (1979) studies suggest that high achievement motivation might contradict the imaginative involvements associated with hypnotic responsiveness; therefore some subsamples completed the Achievement scale of the Personality Research Form, Form AA (PRF:AA; Jackson, 1967), a "state of the art" personality questionnaire possessing high levels of internal consistency and construct validity. From a social-psychological point of view, hypnosis is fundamentally an interpersonal experience in which one individual responds to the

suggestions of another; for this reason, these same subsamples also completed the Autonomy scale of PRF:AA. Also from a social-psychological point of view, hypnotizable individuals may be especially sensitive to contextual cues concerning the experimenter's expectations (Sarbin & Coe, 1972); therefore other subsamples completed Snyder's Self-Monitoring Scale (Snyder, 1980), assessing sensitivity to cues in the social context. Finally, since the 19th century there has been a continuing debate over sex differences in hypnotic susceptibility (e.g., Weitzenhoffer & Weitzenhoffer, 1957; De'on, Pawlak, Mah, & Spanos, 1979; Fellows, 1979); accordingly, some subsamples completed Bem's Sex-Role Inventory (Bem, 1974), a measure of personality attributes associated with stereotyped concepts of masculinity and femininity.

Method

Subjects

Six separate samples comprising a total of 1300 male and female students at Harvard University (Samples A and C) and the University of New Hampshire (Samples B, D, E, and F) volunteered to participate in experiments involving the assessment of susceptibility to hypnosis. The Harvard students were run in small groups and paid \$3.00 for their participation in a single experimental session lasting 1-1/2 hours; the New Hampshire students were run in larger groups and received credit towards the research participation requirement of their introductory psychology course.

Procedure

Following completion of the questionnaires the subjects received a version of the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A; Shor & Orne, 1962), administered by tape recording. The HGSHS:A is a standardized procedure consisting of an induction of hypnosis accompanied by suggestions for 12 discrete representative hypnotic experiences. At the end of the procedure subjects rate their responses to the items of the scale according to objective behavioral criteria. These retrospective ratings have been shown to correlate highly with those made by external observers (Bentler & Hilgard, 1963; O'Connell, 1964; Shor & Orne, 1963). The HGSHS:A was primarily intended by its authors for use as a preliminary screening device. However, its correlation with the Stanford Hypnotic Susceptibility Scale, Form C is about $r = .60$ (Bentler & Roberts, 1963; Coe, 1964; Evans & Schweidler, 1966; Kihlstrom, unpublished data), so that, with large numbers of subjects, HGSHS:A scores can serve as a satisfactory criterion for formal experiments.

The data for this study was collected over a period of five years, so that different samples received somewhat different batteries of questionnaires. In some samples the standard form of HGSHS:A was modified slightly for the purposes of other experiments; however, no modifications were inserted until after the usual test for posthypnotic amnesia, the final item which enters into scoring the scale, was carried out. No modifications were made to the self-scoring procedure.

Results

Table 1 presents the mean HGSHS:A scores for each of the seven samples. All the samples are comparable to published norms (Coe, 1964; Sheehan & McConkey, 1979; Shor & Orne, 1963).

Place Table 1 About Here

Absorption, Achievement, Autonomy, and Self-Monitoring

Table 2 presents the correlations between scores on the Absorption, PRF Achievement, PRF Autonomy, and Self-Monitoring scales, considered as single predictors, and the criterion HGSHS:A scores. For the absorption scale, the six correlations are all significant (all $p < .05$); the average correlation of .27 is within the range found in other studies. The Achievement, Autonomy, and Self-Monitoring scales all failed to correlate significantly with hypnosis ($r_{A} = .11, .09, \text{ and } .01$, respectively).

Place Table 2 About Here

Moderator variables. The intercorrelations among the predictors were of such low magnitude that multiple-regression analysis, including the analysis of suppressor variables, was not pursued. However, in view of the successful use of moderator variables in some past research on the personality correlates of hypnotizability, this prediction model was explored in the present data. Table 3 presents the correlations between HGSHS:A score and Absorption, Achievement, Autonomy, and Self-Monitoring

within each of the six samples, for males and females taken separately. Some of the correlations in particular samples appeared to differ for males and females -- for example, in Sample A the correlations between both hypnotizability and Achievement and Autonomy were higher for women than for men. However, the difference was not significant and was not replicated in Sample B. In general, there were no consistent trends observed across the samples for any predictor.

Place Table 3 About Here

Scores on the Achievement, Autonomy, and Self-Monitoring scales were uncorrelated with hypnotizability, but even so one or more of these variables might moderate the relation between Absorption and hypnotic susceptibility. The subjects in each sample were classified high or low on each of these three variables, with cutpoints established at the medians of their respective distributions. Table 4 presents the resulting correlations between Absorption and HGSMS:A scores. Again, some of the correlations appeared to differ between high- and low-scorers. In Sample A, for example, subjects with high scores on either the Achievement or Autonomy scales showed higher correlations than their low-scoring counterparts, but this finding was not replicated in Sample B. Again, no consistent trends were observed across the samples for any ostensible moderator.

Place Table 4 About Here

Sex Differences

Table 5 presents the average HGSNS:A scores for males and females in each of the six samples. There was an overall trend for women to score higher than men on HGSNS:A ($M_s = 7.16$ vs. 6.43 , respectively). The difference reached acceptable levels of statistical significance in Samples B, D, and E (all $p < .05$), and when the results for the six samples are combined by the method of adding Z_s (Rosenthal, 1978): $Z = 4.32$, $p < .001$).

Place Table 5 About Here

Gender and gender-stereotype expression. The Sex-Role Inventory scores available for Samples C and F permitted further exploration of this finding with subjects classified in terms of both biological sex and their expression of personality characteristics associated with culturally prescribed concepts of masculinity and femininity. Scores on the masculinity and femininity scales were split at the median, so that the subjects were classified as undifferentiated, cross-sex-typed, same-sex-typed, and androgynous according to the criteria proposed by \longrightarrow \longrightarrow Spence and Helmreich (1978). Table 6 presents the HGSNS:A scores for the eight subject groups produced by this classificatory scheme for the two samples combined. Analysis of variance with two between-subjects factors (gender and gender-stereotype expression) revealed significant main effects of gender ($F(1,528) = 9.29$, $p < .05$) and gender stereotype ($F(3,528) = 3.02$, $p < .05$), but no interaction between these factors ($F(3,528) = .17$). Scheffe's test showed that the only significant group difference within the gender-stereotype factor was between the

undifferentiated and androgynous subjects ($p < .05$).

Place Table 6 About Here

Discussion

This research employed mostly new personality constructs, but the findings have a familiar ring. A disposition to naturally occurring hypnotic-like experiences correlated significantly with hypnotizability, as has been found many times (e.g., Hilgard, 1970; Shor et al., 1962; Tellegen & Atkinson, 1974). However, the correlations with achievement motivation, need for autonomy, and self-monitoring were vanishingly small, paralleling the findings with other constructs lying outside the immediate domain of hypnosis and imaginative involvement (Barber, 1964; Hilgard, 1965; Shor, Orne, & O'Connell, 1966). The negative findings with respect to achievement, autonomy, and self-monitoring cannot be attributed to the psychometric properties of the measuring instruments involved. All three predictor measures, like the Absorption scale, were rigorously constructed according to the principles of construct validity, and all three have been successfully employed as predictors in other domains. The HGSMS:A does not provide the optimal assessment of hypnotizability, but the fact that significant correlations were obtained between it and the Absorption scale suggests that parallel relationships with the other constructs, if they existed in the real world, should have emerged from the present data.

The finding of no correlation between hypnotizability and self-monitoring seems inconsistent with the role-theoretical analysis of hypnosis proposed by Sarbin & Coe (1972). They argue that the first step in role-enactment is "role location", or attending to cues in the social context which provide information concerning the behavior expected of participants in a social encounter. Self-monitoring reflects just this kind of sensitivity to the expectations of others and wider social demands, and use of these contextual cues in the regulation of social behavior. However, individual differences in self-monitoring do not correlate with hypnotic responsiveness. Other variables are also important in role theory, however, and the theory makes no specific predictions concerning self-monitoring and role-location, so this finding by itself is not critical. At any rate, the lack of correlation between hypnosis and self-monitoring should reassure those who -- like Orne (1979) himself -- worry that the real-simulator paradigm may be compromised by differences in sensitivity to situational demands between the hypnotizable subjects who are assigned to the hypnotic condition and their insusceptible counterparts who serve as simulators.

The research did reveal a small but significant sex difference in hypnotic susceptibility. The belief that women are more hypnotizable than men is quite commonly held, even though reviews by Hull (1933) and Weitzenhoffer (1953) offer very little evidence favoring the claim, and both Hilgard (1965) and Cooper (1969), examining large normative samples, found no suggestion of a sex difference. In the only previous study of this issue employing measures of masculinity and femininity, Weitzenhoffer and Weitzenhoffer (1957, 1958) found a small sex difference which was reduced when the sex of the hypnotist was taken into account (see also

De'on et al., 1979; Fellows, 1979; Weitzenhoffer, 1961); there was no correlation between hypnotizability and any of five questionnaire measures of femininity, however. It should be noted that in all six samples reported here the proportion of women participating in the study was greater than the proportion of women in the undergraduate populations from which the subject samples were drawn, suggesting that the apparent sex difference may be an artifact of volunteer bias (Boucher & Hilgard, 1962).

Nevertheless, the present results strongly suggest that sex differences in hypnotic susceptibility -- if indeed they exist at all -- do not reflect the importance of "feminine" over "masculine" personality attributes (Spence & Helmreich, 1978), because the only significant difference obtained was between those subjects, male or female, who attributed neither masculine or feminine attributes to themselves on the one hand, and those who attributed both types of attributes to themselves on the other. It remains to be seen if the relative unresponsiveness is specific to hypnosis or (more likely) a general characteristic of undifferentiated individuals.

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Footnotes

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Table 1

Characteristics of the Subject Samples

Sample	Total N	HGSHS: A Score	
		<u>M</u>	<u>SD</u>
A	112	6.91	2.67
B	196	6.92	2.52
C	110	6.91	2.39
D	250	7.22	2.40
E	206	6.79	2.85
F	426	6.76	2.64

Table 2

Correlations between Hypnotic Susceptibility and Personality Variables

Variable	Sample					
	A	B	C	D	E	F
Absorption	.19	.35	.37	.21	.34	.24
Achievement	.11	.11	---	---	---	---
Autonomy	.15	.06	---	---	---	---
Self-Monitoring	---	---	.08	-.12	.12	---

Table 3

Sex as a Moderator Variable
in the Relation between Hypnotizability and Personality Variables

Variable	Sample					
	A	B	C	D	E	F
Absorption						
Males	.14	.31	.52	.09	.39	.15
Females	.23	.34	.29	.22	.30	.25
Achievement						
Males	.03	.09	---	---	---	---
Females	.22	.08	---	---	---	---
Autonomy						
Males	.04	.27	---	---	---	---
Females	.30	-.04	---	---	---	---
Self-Monitoring						
Males	---	---	.09	.19	-.08	---
Females	---	---	.13	.01	-.17	---

Table 4

Personality Variables as Moderators
in the Relation between Absorption and Hypnotizability

Moderator Variable	Sample					
	A	B	C	D	E	F
Achievement						
High	.34	.29	---	---	---	---
Low	.03	.40	---	---	---	---
Autonomy						
High	.50	.30	---	---	---	---
Low	-.16	.40	---	---	---	---
Self-Monitoring						
High	---	---	.46	.17	.35	---
Low	---	---	.31	.27	.32	---

Table 5

Sex Differences in Hypnotizability

Sample	Males			Females		
	<u>N</u>	<u>M</u>	<u>SD</u>	<u>N</u>	<u>M</u>	<u>SD</u>
A	62	6.81	2.68	50	7.04	2.69
B	80	6.36	2.58	116	7.30	2.41
C	44	6.45	2.42	66	7.21	2.34
D	82	6.56	2.69	168	7.54	2.18
E	77	6.26	2.77	129	7.10	2.87
F	138	6.32	2.57	208	6.93	2.62

Table 6

Hypnotizability of Subjects
 Classified by Gender and Gender-Stereotype Expression

Gender	Not Differentiated	Cross-Sex Typed	Same-Sex Typed	Androgynous
Male				
<u>N</u>	48	14	84	37
<u>M</u>	6.02	5.93	6.35	7.05
<u>SD</u>	2.56	2.67	2.52	2.45
Female				
<u>N</u>	69	60	116	108
<u>M</u>	6.51	6.93	6.84	7.44
<u>SD</u>	2.52	2.56	2.49	2.64