

AN EXPERIMENTAL DEMONSTRATION OF HYPNOSIS AS ROLE ENACTMENT¹

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3 variables drawn from role theory were investigated as predictors of hypnotic responsiveness: congruence of self and role (assessed by questionnaire); role expectations (assessed by questionnaire); and role-taking aptitude (drama students vs. science students). 168 Ss (78 drama students, 91 science students) were administered the 2 questionnaires and the Harvard Group Scale of Hypnotic Susceptibility. 2 hypotheses were tested. (1) Ss high on any 1 of the variables would show more hypnotic responsiveness than Ss low on the same variable. (2) Ss high on all 3 variables would show more hypnotic responsiveness than those high on 2 variables; Ss high on 2 variables would show more hypnotic responsiveness than those high on 1 variable; and so on. Hypothesis 1 was confirmed for role-expectation and role-taking aptitude but not for congruence of self and role. Hypothesis 2 was confirmed. Qualifications of the variables and implications for further research were discussed.

This article examines the utility of a recent revision of role theory to account for hypnotic behavior (Sarbin, 1964). The utility of a set of metaphors drawn from dramaturgical sources to describe social psychological behavior has received considerable support (e.g., Goffman, 1961; Mead, 1934; Sarbin, 1950, 1952, 1964). Social interaction is regarded as the enactment of roles, given certain antecedent and concurrent conditions. Since hypnosis is a social psychological phenomenon, that is, is dependent upon communication and reciprocal action, it follows that it can be profitably studied with the aid of role-theory concepts. The performance of a person who serves as the subject (*S*) in the hypnotic situation is subsumed under the rubric *role enactment*. The question to which efforts are addressed is: What are the condi-

tions that influence the accuracy of hypnotic role enactment? (Accuracy may also be read as validity, convincingness, or effectiveness.)

The dependent variable, accuracy of hypnotic role enactment, was operationally defined as *S*'s score on the Harvard Group Scale of Hypnotic Susceptibility (Shor & Orne, 1962). This scale is a modification, for group administration, of the Stanford Hypnotic Susceptibility Sale, Form A (Weitzenhoffer & Hilgard, 1959). The experimenter (*E*) reads a standard hypnotic induction procedure. A waking suggestion is given first. It is followed by suggestions of relaxation and visual fixation aimed at eye closure. A number of hypnotic tasks are then suggested to the group, including and terminating with, the suggestions for posthypnotic amnesia and the performance of a posthypnotic act on cue. After the hypnotic period, Ss answered a group hypnotic scale that scores their responses on the basis of objective criteria, that is, motor responses that would be visible to an observer. A separate section of this is provided for subjective experiences. The group hypnotic scale has been found to have a score distribution similar to the individually administered scale, and a validity coefficient of .74 with in-

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dependent ratings of hypnotic depth (Shor & Orne, 1963). Self-scoring correlated .74 with the observer scoring in one sample and .81 in another sample (Bentler & Hilgard, 1963), almost as high as the reliability reported for the individually administered Form A. Bentler and Roberts (1963) also found the group scale to correlate .72 and .67 with the Stanford Form C hypnotic scale. These findings indicate that this scale as a measure of hypnotic responsiveness is comparable to the individually administered standard scales of hypnotic susceptibility.

Three independent variables derived from role theoretical concepts were operationally defined and measured.

I. Congruence of Self and Role: If the self-characteristics of a person are compatible with the requirements of the prospective role, the person has a potential for enacting that role. There are two aspects that would seem required of an S if he is to find the hypnotic role congruent with his self-system. One is that he accept the possibility of altered states of attention, new and different experiences, and, from the popular stereotype of hypnosis, mystical occurrences. The second requirement is that S see himself as one who can concentrate and maintain his attention on specific tasks, the hypnotic instructions in this case. The Congruence Questionnaire was developed to measure S's degree of congruency with the requirements of the hypnotic role. It was composed of two scales with items thought to tap each of the previously mentioned requirements. The Acceptance of Altered Processes Scale contained items such as:

I would find it interesting to see how my world would change with altered perceptions of it. (True)
Would you like to get beyond the world of logic and reason and experience something new and different? (True) (Yes)

The Role Absorption Scale contained items such as:

I usually have to stop and think before I act even in trifling matters. (False)
I sometimes find that when I'm studying hard I don't notice the passage of time. (True)

The total score on this 50-item questionnaire was S's congruence measure. Those Ss scoring above the sample mean were arbitrarily

considered high-congruence Ss, those scoring below the mean were low-congruence Ss.

II. Role Expectation: The probability of enacting a role validity is increased if a person knows what behaviors are expected in a role. An Expectation Questionnaire was constructed to measure S's accuracy of expectations for the hypnotic role. Two scales made up this 30-item questionnaire. The first, the General Expectation Scale, measured S's general expectations of hypnotic role enactment. Examples of these items are:

Women who are hypnotized before childbirth often suffer a good deal of pain anyway. (False)
I believe I can be cured of nearly any kind of psychosomatic illness through the use of hypnosis. (True)

The Specific Expectations Scale measured the accuracy of an S's expectations for the specific role he was to enact, the Harvard Group Scale of Hypnotic Susceptibility. If he answered in the keyed direction, he would be scored as a good hypnotic S in the experimental session. Examples of these items were:

The first signs of hypnosis are often slight changes in vision. (True)
Vivid thoughts brought about under hypnosis seem real to the hypnotized person. (True)

As with the Congruence Questionnaire, Ss scoring above the sample mean were considered high-expectation Ss, those scoring below the mean as low-expectation Ss.

III. Role-Playing Aptitude: Dramatic arts students were selected as high role-playing-aptitude Ss. Presumably, they are flexible in taking on new roles and have been rewarded for following a director's suggestions. Also, and what seems more important, they have practiced motor and imagination behaviors specifically required in the hypnotic role. Students majoring in science were considered to be low role-playing-aptitude Ss because their present goals presumably require little practice in changing roles. Their training attempts to reach an objective approach in their commerce with events and objects so that subjectivity and introspective practice are minimized.

Three additional variables contributing to effective role enactment (Sarbin, 1964) were controlled. (a) Role perception, the perceived

TABLE 1
COMPARISON DATA BETWEEN THE DRAMATIC ARTS
SUBJECTS AND THE SCIENCE SUBJECTS

	Drama arts majors ^a	Science majors ^b
Hypnotized before	10%	7%
Age range	17-49	17-30
<i>M</i> age	21.40	22.03

^a *n* = 34 males and 43 females.

^b *n* = 49 males and 42 females.

status of the other, was unambiguous. That is, *E* announced he was the hypnotist. (*b*) Reinforcement of the ecology was similar for all *Ss* because the hypnotic procedure was a verbatim administration with no differential reinforcing properties. (*c*) Role demands cannot be as easily assumed controlled because of their implicit nature; however, it was felt that differences in *Ss*' perceptions of their task would occur randomly throughout the groups.

Two hypotheses followed from role theoretical predictions.

1. The *Ss* high on one of the measured variables would be better hypnotic *Ss* than those low on the same variable.

2. The *Ss* high on more measured variables would be better hypnotic *Ss* than those high on fewer variables. That is, those *Ss* high on all three variables would score higher on the hypnotic scale than those high on two variables, and so on.

METHOD

Subjects. The total sample was made up of 168 students who had completed 2 years or more of college work. There were 78 *Ss* majoring in dramatic arts and 91 *Ss* majoring in the biological and physical sciences. Table 1 presents comparison data for the drama majors and science majors. The *Ss* were solicited in their classrooms. The *E* announced that he was seeking volunteers for a psychology experiment and that anyone participating would be paid \$2.00 for 1½ hours. After the announcement, sign-up sheets for several scheduled experimental sessions were distributed. There was no mention of the nature of the experiment. The *E* collected the sign-up sheets before the class period ended. Approximately 45% of the *Ss* addressed volunteered for the experiment.

Procedure. The *Ss* reported to the experimental room (a typical classroom with a capacity for 35 *Ss*) at the time prescribed on the sign-up sheets. The *E* announced that the first part of the experi-

ment would be two short questionnaires. The *Ss* were instructed to answer quickly and if in doubt about an item to respond with their first thought. The Congruence Questionnaire was administered first and the Expectation Questionnaire second. No more than 30 minutes was allowed for the two questionnaires. The group was then informed that a standard hypnotic scale would be administered and that all of them would probably be hypnotized to some degree. The *Ss* were told they were free to leave at that time if they wished. Only two *Ss* chose to leave (two female drama students in the final scheduled session). The Harvard Group Scale of Hypnotic Susceptibility, Form A (Shor & Orne, 1962) was administered. The *Ss* completed the self-scoring booklets, handed in their materials, and were paid. None of the *Ss* required more than 90 minutes for the entire session. Before anyone left the session, *Ss* were asked not to reveal what had happened until after the last experimental session. None of the *Ss* had to conceal this information for more than 4 days. Most of the *Ss* did not have a meeting of the class in which they had been contacted between the experimental session they attended and the last experimental session scheduled for that class. Although *E* questioned *Ss* in the later sessions, none indicated he had expected to be hypnotized. The general group response to the announcement of hypnosis was a murmur of surprise and an increase in group seriousness.

Nine groups of *Ss* comprised the experimental sample. The group sizes ranged from 7 to 30. The dramatic arts *Ss* and science *Ss* were not seen in the same experimental sessions.

Experimental design. A three-factor (two levels per factor) analysis-of-variance model was used to test the three variables. The two levels (highs and lows) of the congruence-of-self-and-role variable and the role-expectation variable were arbitrarily defined by selecting those *Ss* above the sample mean of each questionnaire as high-congruent and/or high-expectation *Ss*. Those *Ss* below the mean were selected as low-congruent and/or low-expectation *Ss*. The dramatic arts students were considered high role-taking-aptitude *Ss*; the science students low role-taking-aptitude *Ss*. As a result of this procedure each *S* received a classification on the three variables depending on his two questionnaire scores and his college major.

RESULTS²

Because of unequal cell frequencies and nonindependent variables, the least-squares analysis-of-variance solution suggested by

² Although this study was not designed to investigate sex differences in hypnotic responsiveness, mention should be made of two possible interactions between sex and role-theory variables. The first, an interaction between sex and role-taking aptitude (graphically shown in Coe, 1964), suggests that while females, either drama or science majors, are

Winer (1962) was employed.³ The analysis-of-variance source table is reported in Table 2. Two role-theory variables were significant: Expectation ($p < .05$) and Aptitude ($p < .001$). The Congruence variable and the interaction terms were not significant.⁴

more responsive to hypnosis than are the males in the same major, the drama females outdo their male counterparts more than the science females, that is, being a female in the drama group correlated .30 ($p < .01$) with total hypnotic score while the same coefficient in the science group was only .17 ($p < .05$). Another possible interaction appears between sex and the congruence variable. Women tend to get higher congruence scores ($r = .16$, $p < .05$); however, this relationship appears primarily due to the difference between science females and science males. In the science group females tend to score higher on the variable ($r = .23$, $p < .05$) while this is not true in the drama group ($r = .02$, $p > .4$). Although these relationships are not particularly high, they do suggest that sex is a variable which may affect results and should either be controlled or investigated in hypnotic research.

Thus, in the present study, since the analysis-of-variance groups contained different numbers of males and females, the mean difference between the male and female hypnotic score in the total sample (1.54) was added to each male score before the analysis-of-variance computation. This procedure is essentially the same as an analysis of covariance (Professor William Meredith, personal communication). Technical difficulties at the time prevented the use of the covariance option in the computer program.

³ Complete statistical rationale for the least-squares solution may be obtained in BMD 1090 Computer Programs, University of California at Los Angeles Medical Center, Los Angeles, California. The program was BMD 14.

⁴ The questionnaires were not "constructed" to control acquiescence response set. The Congruence

TABLE 3

3 *t*-TEST RESULTS BETWEEN THE 2 LEVELS OF EACH ROLE-THEORY VARIABLE

Role-theory variable	<i>N</i>	<i>M</i>	σ	<i>t</i>
Congruence				
High Ss	80	7.23	2.82	2.24*
Low Ss	88	6.21	3.04	
Expectation				
High Ss	68	7.37	2.76	2.47*
Low Ss	100	6.23	3.04	
Aptitude				
High Ss	77	7.98	2.51	5.60**
Low Ss	91	5.61	2.91	

* $p < .05$.

** $p < .01$.

Table 3 shows the *t*-test results between the two levels of each variable. The Ss classified as high on each of the variables are significantly higher hypnotic scorers than Ss classified as low: Congruence ($p < .05$), Expectation ($p < .05$), Aptitude ($p < .01$). The Congruence variable significantly differentiates if it is tested by itself; however, it loses its significance in the analysis-of-variance least-squares solution. This analysis in summary shows that Ss high on Expectation and/or Aptitude are more responsive hypnotic Ss. The Ss classified as high-congruent Ss have significantly higher hypnotic scores than low-congruent Ss only when the other two variables are not taken into account.

The Ss were grouped according to the number of role-theory variables on which they were classified as high: 28 Ss were high

TABLE 2

SOURCE TABLE FOR LEAST-SQUARES SOLUTION OF 3 FACTORS ($2 \times 2 \times 2$) ANALYSIS OF VARIANCE: 3 ROLE-THEORY VARIABLES

Source	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>
Congruence	.11	1	.11	.02
Expectation	33.56	1	33.56	4.52*
Aptitude	124.51	1	124.51	16.78**
Congruence \times Expectation	.30	1	.30	.04
Congruence \times Aptitude	11.89	1	11.89	1.60
Expectation \times Aptitude	2.28	1	2.28	.31
Three-way interaction	0.00	1	0.00	.00
Within (Error term)	1187.20	160	7.42	

* $p < .05$.

** $p < .01$.

Questionnaire key favored "true" responses (70%) as did the key for the Expectation Questionnaire (66.7%). In order to examine the possibility that "yea saying" could account for higher questionnaire scores in the higher hypnotic subjects, a frequency count of the items in the keyed direction was made for two groups: those scoring seven or higher on the group scale, and those scoring less than seven. These two groups did not differ significantly on the percentage of "true" responses of the total responses in the keyed direction. On the Congruence Questionnaire the high hypnotic group's total keyed score was based on 75% true responses while the low hypnotic group was 73.1%. The high group showed 68.6% as opposed to the low group's 68.4% true from the total keyed responses on the Expectation Questionnaire. These findings suggest that there may have been a tendency to answer the true items more readily, but this tendency does not account for the difference between high and low hypnotic scores.

TABLE 4

t-TEST RESULTS BETWEEN GROUPS OF SUBJECTS BASED ON THE NUMBER OF VARIABLES ON WHICH THEY WERE CLASSIFIED AS HIGH

Comparison groups	<i>M</i>	<i>σ</i>	<i>df</i>	<i>t</i>
High on three variables versus High on two variables	8.48	2.33	68	2.97*
High on two variables versus High on one variable	7.32	2.51	95	2.91*
High on one variable versus Low on all variables	6.36	2.72	94	3.03*
	5.30	2.95		

* $p < .01$.

on all three, 44 Ss were high on two, 53 Ss were high on one, 43 Ss were low on all. A highly significant F ($p < .001$) resulted from a least-squares simple analysis-of-variance solution computed among the four groups.

Table 4 presents the t -test results among the four groups. Any group of Ss that is higher on more role-theory variables than another group scores significantly higher on the group hypnotic scale ($p < .01$).

DISCUSSION

The results support the notion that hypnotic responsiveness may be studied profitably if it is considered as role enactment. Some specifications of the variables contributing to the accuracy of hypnotic role enactment may also be drawn from the results.

The role-playing-aptitude variable is the most discriminating of the three variables studied. The correlation between aptitude and hypnotic score was $r = .41$ ($p < .01$). We emphasize the assumption behind our specification of aptitude. Dramatic students were considered high hypnotic role-taking-aptitude Ss because they are generally flexible in taking new roles, are motivated to take directions from others, and have practiced attending to their gestural and other motoric behaviors and to internal stimuli. Being able to perform tasks similar to those required in hypnosis increases the convincingness of their acting performances (see, e.g., Stanislavski, 1961). In role-theory terms, these attributes are conceptualized as general and role-

specific aptitudes. The general aspect is role flexibility or changeability; the specific aspects are the motoric and cognitive behaviors required in the hypnotic role.

The role-expectation variable was somewhat less discriminating than aptitude. The correlation between expectation and hypnosis was $r = .17$ ($p < .05$). Knowing what behaviors are expected in the hypnotic role aids performance; however, this knowledge seems to help primarily in the central range of hypnotic responsiveness (scores of 4.0–8.0). This qualification of the expectation variable was discovered by ranking Ss on their hypnotic scores, then testing between the high and low 50% groups and the high and low 25% groups. The upper 50% group scored significantly higher on the Expectation Questionnaire than the lower 50% group ($t = 3.06$, $p < .01$); however, there was not a significant difference in expectation scores between the upper and lower 25% groups ($t = 1.94$, $p < .1$). It seems that the central hypnotic range contains Ss who differ significantly on accuracy of expectations. Apparently, if one is high or low in role-taking aptitude, the knowledge of the role expectations has little effect on the convincingness of role enactment. Those Ss in the medium role-taking-aptitude range are able to enact the role with greater accuracy if they hold the proper role expectations. From this qualifying hypothesis one would expect the Expectation Questionnaire to differentiate a sample of social science students (assumed medium role-taking-aptitude Ss) on hypnotic responsiveness to a greater degree than the present sample. This conclusion is amendable to empirical test.

Congruence of self and role was not a discriminating variable in the present design. This appears paradoxical because other researchers using questionnaires of similar content have reported significant correlations with hypnotic susceptibility (Aas, 1962; Anderson, 1963; Shor, Orne, & O'Connell, 1962). The Congruence Questionnaire correlated $r = .25$ ($p < .01$) with the Group Hypnotic score and $r = .44$ ($p < .01$) with the role-taking-aptitude variable. What apparently occurred in the present study was that Congruence functioned as a selection variable

for high role-taking-aptitude Ss; thus, by itself it did not contribute in the selection of high hypnotic scorers. That is, the aptitude variable accounted for the hypnotic variance so that in a multiple-regression model the congruence variable did not receive significant weighting. In retrospect, one finds an indication that this might have been predicted. Aas and Lauer (1962) factor-analyzed 23 cross-validated items from their Experience Inventory (items similar to those on the Congruence Questionnaire) with items from the Stanford Hypnotic Susceptibility Scales, Form A and C. Their first factor was primarily a hypnotic performance factor; the second a questionnaire factor. Only one item from their Experience Inventory loaded above .30 on the hypnotic factor and less than .20 on the inventory factor. This one item was "Having experienced becoming the character when acting in a play." It is apparent that this item selected Ss who had been interested in dramatics or were in dramatics, that is, high role-taking-aptitude Ss. The conclusion is that congruence of self and role will predict hypnotic susceptibility; however, its predictive power lies in its ability to select Ss with high role-taking aptitudes.

The important place of role-taking aptitude in hypnotic behavior suggested in this study deserves further research. Sarbin and Lim (1963) found that Ss (not drama students) who were rated by drama teachers as good, improvising, role takers were better hypnotic Ss than Ss rated low on this task. The importance of role-taking aptitude points to the need for more intensive investigation of individuals who are high and low in these abilities. Isolating important differences between these Ss may provide fruitful insights into hypnotic behavior.

It is recognized that homogeneous grouping of drama Ss and science Ss could present different demand characteristics for the experimental groups. For example, the drama students might infer that their ability to concentrate was being tested and thus respond more readily to the instructions. While this does not invalidate the experimental results, it may weaken the theoretical conclusions. That is, the difference between drama Ss and

science Ss may be due to additional antecedent or concurrent variables. Replications of this study should mix the two groups in the experimental sessions in order to eliminate this doubt.

That the findings are consistent with other theoretical formulations cannot be gainsaid. For example, Arnold (1946) would probably have predicted the correlation between hypnotic role enactment and role-taking aptitude through the mediation of skill in "imagining." Hilgard (1964), too, might have made the same prediction from his developmental interactive theory of hypnosis—drama students and science students presumably are products of different kinds of socialization. These theories are not contrary nor contradictory to role theory. The point has been made elsewhere (Sarbin, 1943, 1950) that skill in role taking is related to the ability to use as-if formulations (imaginings) and that such skill is a function of a particular kind of reactional biography. One might also add that the variables employed in this study are more likely to emerge from a dramaturgical model than from a purely cognitive or dynamic model.

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