HYPNOTIZABILITY AND MENTAL IMAGERY[1]

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Abstract: Two studies investigated the relationship between mental imagery and hypnotizability, with the imagery measures administered in a hypnotic context. The correlation of hypnotizability with vividness of imagery was significant in one study, but not in the other; both correlations were significantly lower than that obtained between hypnotizability and absorption, assessed in the same samples. The correlations with control of visual imagery, and with various measures of the vividness of motor imagery, were even lower and rarely significant. Except for an aggregate index of motor imagery, a search for significant nonlinear relationships with hypnotizability yielded nothing that was consistent across studies. Future studies of imagery and hypnotizability should make use of better measures of vividness of mental imagery and consider the relevance of aspects of imagery other than vividness.

Despite continuing theoretical controversy about the nature of hypnosis, there appears to be wide agreement that hypnosis and mental imagery ought to be closely related. Beginning with the induction procedure and continuing with every suggestion, the subject is asked to imagine some state of affairs and experience it as subjectively real. Hypnosis may or may not involve relaxation, and it may or may not involve a hypnotist, but without the imaginative involvement of the subject in the hypnotic proceedings, nothing much seems to happen.

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In light of this agreement, it comes as a matter of some surprise to discover that the relationship between hypnotizability and imagery is actually rather weak and inconsistent (e.g., J. R. Hilgard, 1970/1979; Perry, 1973; Sutcliffe, Perry, & Sheehan, 1970; for reviews, see deGroh, 1989; Sheehan, 1979; Spanos, 1991). Moreover, other kinds of evidence also suggest that imagery plays a limited role in hypnosis (for a review, see K. S. Bowers, 1992). For example, instructions to imagine the suggested state of affairs do not generally enhance hypnotic response in insusceptible subjects (e.g., Buckner & Coe, 1977; Lynn, Snodgrass, Rhue, & Hardaway, 1987; Spanos, 1971; Spanos & Barber, 1972), whereas instructing hypnotizable subjects to imagine a contradictory state of affairs does not generally decrease it (Bartis & Zamansky, 1990; Spanos, Weekes, & deGroh, 1974; Zamansky; 1977; Zamansky & Clark, 1986). Apparently, then, hypnosis involves more than imagery.

Although the linear relation between imagery and hypnotizability appears to be weak and unstable, there have been suggestions that the *nonlinear* relationship between these variables may be stronger and more reliable. Sutcliffe et al. (1970) noted "a significant departure from linearity" (p. 282) in their scatterplots: "vivid imagery was associated with both susceptibility and insusceptibility to hypnosis, while poor imagery tended to indicate insusceptibility to trance" (p. 282). J. R. Hilgard (1970/1979) noted a similar missing quadrant effect; so did deGroh (1989), summarizing an unpublished study employing the Vividness of Visual Imagery Questionnaire (VVIQ; Marks, 1973) and the Carleton University Responsiveness to Suggestion Scale (CURSS; Spanos et al., 1983). One interpretation of the missing quadrant effect makes use of the familiar distinction between aptitude and achievement, or between competence and performance (see E. R. Hilgard, 1965; Shor, Orne, & O'Connell, 1966; White, 1937). Although some vivid imagers may possess imagery abilities that are necessary for hypnosis, they may also lack the motivation to use these abilities or hold negative attitudes about hypnosis that prevent them from responding positively to the hypnotist's suggestions.

This sort of interpretation has some appeal, but it faces some problems. In the first place, deGroh (1989) reports that the missing quadrant remained visible even when subjects with poor attitudes concerning hypnosis were eliminated from her sample. Thus the relationship between imagery and hypnotizability does not appear to be mediated by hypnosis-relevant attitudes. Moreover, it is very easy to obtain high scores on the revision of Betts's (1909) Questionnaire Upon Mental Imagery (QMI; Sheehan, 1967) and other self-report scales of imagery vividness. Thus Kihlstrom, Glisky, Peterson, Harvey, and Rose (1991) found that the distributions of scale scores were strongly skewed, such that only about 10% of the sample reported vague or dim images. By contrast, the hypnotizability scales show a more normal distribution of scores (E. R. Hilgard, 1965). Although low variance in performance on the imagery scale will artifactually deflate the correlation with hypnotizability (or any other criterion), a scatterplot of one variable with a normal distribution against another with a highly skewed distribution is extremely likely to show a missing quadrant somewhere. In other words, it is possible that both the low correlation between imagery and hypnotizability, and the nonlinear nature of the imagery-hypnotizability relationship, are psychometric artifacts. Although a rather different scatterplot might emerge if the scales in question had similar psychometric properties, no such instruments are available in the domain of mental imagery to test this hypothesis.

It should be noted that most published studies have focused on visual imagery. Farthing, Venturino, and Brown (1983) argued that kinesthetic or motor imagery is also relevant to hypnosis. After all, hypnotized subjects are asked to imagine themselves *feeling* and *doing* things, as well as seeing and hearing them. In general terms, motor imagery did not prove to be better than visual imagery or absorption at predicting hypnotizability in their study; in principle, however, their point about the potential relevance of motor imagery is well taken.

The research reported here seeks to analyze the relationship between hypnotizability and various aspects of mental imagery, with special reference to nonlinear relationships of the sort discussed by Sutcliffe et al. (1970), J. R. Hilgard (1970/1979), and deGroh (1989), in samples large enough to permit examination of the sex differences in the hypnosis-imagery relationship. Both studies involved measures of visual and motor imagery, and motor imagery was assessed from several different perspectives.

STUDY 1

Method

Subjects. A total of 782 undergraduates at the University of Arizona volunteered to participate in an experiment on hypnosis and personality. In return for their participation, the subjects received credit toward the research participation component of their introductory psychology course.

Procedure. At the beginning of the experimental session, the subjects completed a battery of questionnaires consisting of the Tellegen Absorption Scale (TAS; Tellegen, 1981, 1992, 1993; Tellegen & Atkinson, 1974), the VVIQ (Marks, 1973), the Test of Visual Imagery Control (TVIC; Gordon, 1949), and the Vividness of Movement Imagery Questionnaire (VMIQ; Isaac, 1983, 1985; Isaac, Marks, & Russell, 1986). Then they received a tape-recorded administration of the Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A; Shor & Orne, 1962). This procedure consists of a standardized hypnotic induction accompanied by suggestions for 12 representative hypnotic experiences. Response to each suggestion is self-scored according to objective behavioral criteria (we employed the revised criterion for posthypnotic amnesia proposed by Kihlstrom and Register, 1984). The subjects were run in groups of approximately 100-125 persons, and the experimental sessions lasted approximately 90 minutes.

Materials. The TAS, part of Tellegen's (1993) Multidimensional Personality Questionnaire, is a 34-item scale measuring the degree to which the subject's "perceptual, motoric, imaginative, and ideational resources" can be committed to forming a "unified representation of the attentional object" (Tellegen & Atkinson, 1974, p. 274). It is a well-studied correlate of hypnotizability (Glisky, Tataryn, Tobias, & Kihlstrom, 1991; Roche & McConkey, 1990) and was included in this study to provide a benchmark for evaluating the correlations obtained between hypnotizability and mental imagery. The version of TAS used in this experiment employed a 5-point (0-4) Likert-type scale; thus total scores ranged from 0 to 136.

Marks's (1973) VVIQ is intended to assess visual imagery and consists of 16 items, with 4 items relating to each of four different images (that of a relative or friend, a rising sun, a familiar shop, or a country scene). Subjects are asked to rate the vividness of each image on a 5-point scale (1 to 5) ranging from *perfectly clear and as vivid as normal vision* to *no image at all (only "knowing" that you are thinking of the object).* Total scores ranged from 16 to 80.

Gordon's (1949) TVIC is concerned with subjects' ability to voluntarily manipulate or control mental images. It contains 12 items, all involving an automobile that goes through various actions and transformations (e.g., lying upside down, climbing a hill). Subjects are asked to rate the degree to which they can control or manipulate the visual images, irrespective of their vividness, on a 5-point scale (1-5) ranging from *very easily* to *very hard.* Total scores ranged from 12 to 60.

The VMIQ (Isaac et al., 1986) consists of 24 items assessing movement imagery and is intended to be a kinesthetic version of Marks's VVIQ. The items range from simple movements (such as standing or running) to more complex movements (such as kicking a ball or jumping into water) and are scored on the same 5-point scale as the VVIQ. In the original version of the VMIQ, subjects are asked to imagine each item with respect to "doing it yourself" and "watching somebody else" separately; these scores are represented by VMIQ-I (internal) and VMIQ-E (external), respectively; the sum of these scores is the total VMIQ score (VMIQ-T). Scores for each subscale ranged from 24 to 120; total scores ranged from 48 to 240.

Results

In the analyses reported in this article, the scoring of the imagery scales was reversed, so that high numbers indicate vivid imagery. Table 1 reports the average scores on each of the scales, and the correlations between them. Because not every subject provided usable data on every variable, the sample sizes associated with the means varied from 700 to 755. The mean HGSHS:A score (employing the revised amnesia criterion; Kihlstrom & Register, 1986) of 6.79 (SD = 2.41) was similar to that typically obtained from large samples of college student volunteers. The mean score of 83.87 (SD = 19.60) on our 5-point version of the TAS also was representative of other college student samples (Glisky et al., 1991). The VVIQ, TVIC, and VMIQ means were also comparable (Campos & Perez, 1988; Kihlstrom et al., 1991).

Absorption and hypnotizability. The correlation of r = .22 between HGSHS:A and TAS was similar to that obtained in other studies of this type. Following the procedure employed by Glisky et al. (1991), a general test of nonlinearity was created by a derivation of the general linear model in which the HGSHS:A score served as both independent variable and covariate, and TAS served as the dependent variable. When the covariate is partialled out, any remaining significant effect represents the nonlinear relationship between the independent and dependent variables. For purposes of this analysis, those subjects with HGSHS:A scores of 0 or 1 were combined into a single group. The general linear model revealed a significant linear relation between TAS and HGSHS:A, F(1, 723) = 35.69, p < .0001; but the nonlinear trend was not significant, F(10, 723) = .55. Figure 1 (Panel A) shows the mean TAS score for each of the 12 levels of hypnotizability.

The specific hypothesis of a quadratic trend can be tested in a similar manner, using a hierarchical multiple regression in which the linear trend is represented by the raw HGSHS:A score and the quadratic trend is represented by its square (Cohen & Cohen, 1983). Partialling out the linear trend, the quadratic trend was not significant, F(1, 723) = .05.

Visual imagery and hypnotizability. Compared to TAS, the visual imagery variables showed substantially lower correlations with HGSHS:A: VVIQ, r = .08; TVIC, r = .03. For VVIQ, the general linear model revealed a significant linear relation, F(1, 722) = 4.05, p < .05, but the nonlinear trend was not significant, F(10, 722) = 1.08. Partialling out the linear trend, the quadratic trend was not significant, F(1, 722) = .51. For TVIC, the linear relation was not significant, F(1, 716) = .55; nor was the nonlinear trend, F(10, 722) = 1.08. Partialling out the linear trend, the quadratic trend did not quite reach conventional levels of significance, F(1, 716) = 3.61, p < .10. Figure 2 shows the mean VVIQ (Panel A) and TVIC (Panel B) scores for each hypnotizability level.

Motor imagery and hypnotizability. Similarly, the correlations between motor imagery (VMIQ-I, VMIQ-E, and VMIQ-T) and hypnotizability were rather low; all three rs = .04. None of the linear relations were

Table 1
Sample 1: Descriptive Statistics and Correlations

			Correlations					
	Mean	*SD*	HGSHS	TAS	VVIQ	TVIC	VMIQ-T	VMIQ-E
HGSHS:A	6.79	2.41	—					
TAS	83.87	19.60	.22	—				
VVIQ	60.73	13.38	.08	.21	—			
TVIC	46.30	9.34	.03	.20	.45	—		
VMIQ-T	179.66	40.26	.04	.16	.48	.47	—	
VMIQ-E	91.50	21.31	.04	.16	.47	.46	.89	—
VMIQ-I	87.94	23.53	.04	.13	.41	.38	.91	.61

Note. HGSHS:A = Harvard Group Scale of Hypnotic Susceptibility, Form A; TAS = Tellegen Absorption Scale; VVIQ = Vividness of Visual Imagery Questionnaire; TVIC = Test of Visual Imagery Control; VMIQ = Vividness of Motor Imagery Questionnaire (T = total, E = external, I = internal).

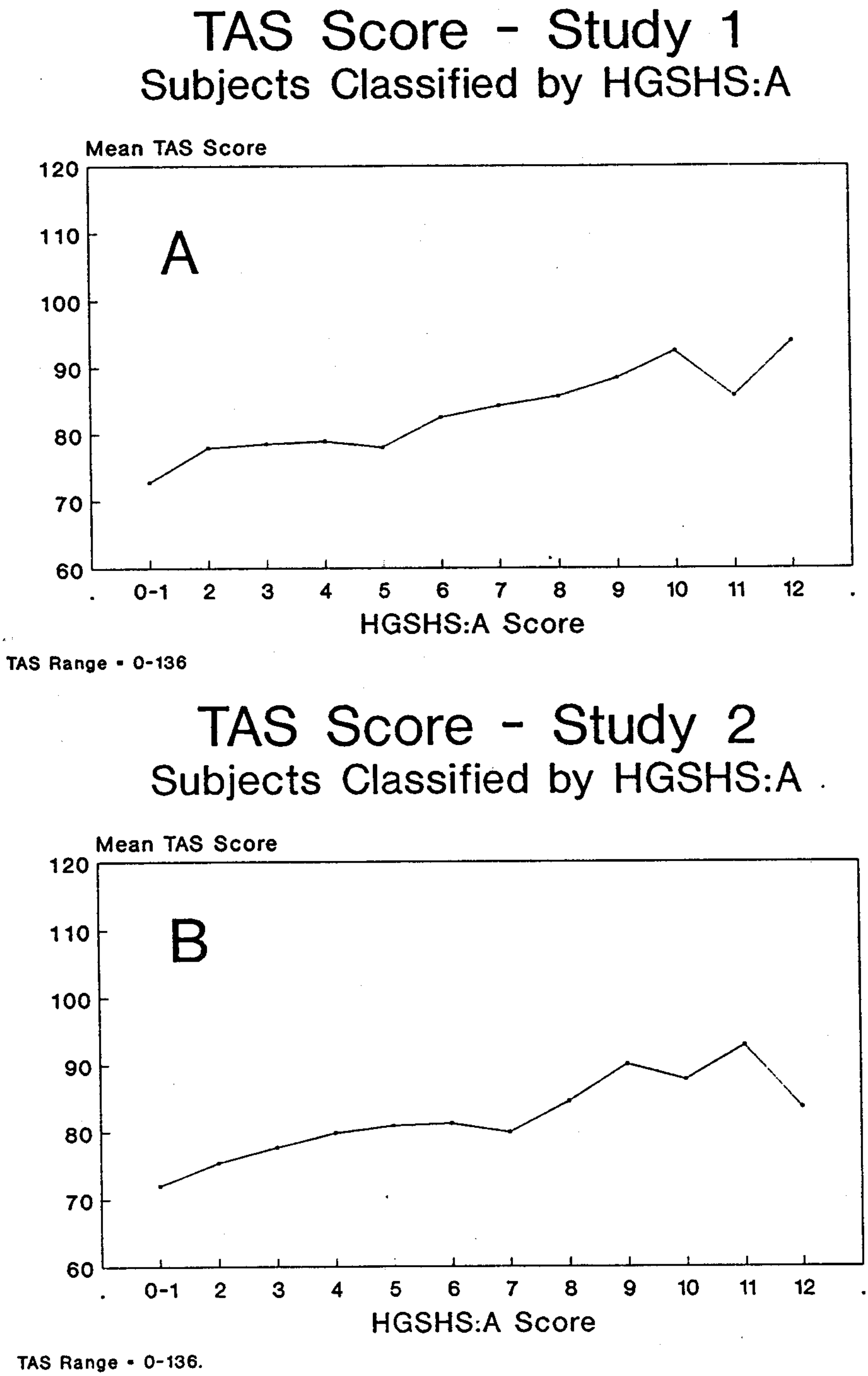


Figure 1. **Mean TAS scores for subjects classified according to HGSHS:A score: Study 1 (Panel A) and Study 2 (Panel B).**

significant: VMIQ-T, $F(1, 699) = 1.33$; VMIQ-I, $F(1, 705) = 1.02$; VMIQ-E, $F(1, 724) = 1.30$. The nonlinear trend was significant for VMIQ-T, $F(10, 699) = 1.88, p < .05$ and VMIQ-E, $(10, 724) = 1.95, p < .05$, but not VMIQ-I, $F(10, 705) = 1.66, p < .10$. Two movement imagery variables showed significant quadratic trends: VMIQ-T, $F(1, 699) = 4.95, p < .05$; VMIQ-E, $F(1, 724) = 5.33, p < .05$, the corresponding trend for VMIQ-I did not reach significance, $F(1, 705) = 3.79, p < .10$. Figure 3 shows the mean VMIQ-T (Panel A), VMIQ-I (Panel B), and VMIQ-E (Panel C) scores for each hypnotizability level.

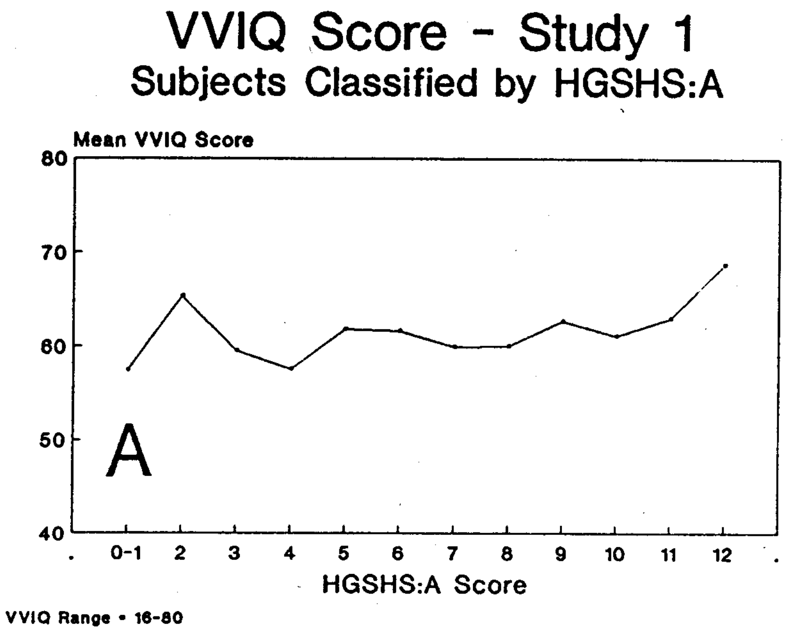
Regression analysis. Scores on absorption and each imagery variable, plus three new scores representing two-way interactions among selected variables (Absorption × Total Visual Imagery, Absorption × Total Motor Imagery, and Total Visual × Total Motor Imagery; the remaining interactions were ignored because the raw correlations involved were so small) were entered into a multiple regression predicting HGSHS:A scores. The resulting multiple regression coefficient, $R = .23$, was not significantly greater than the correlation obtained with absorption alone. The correlations between the interaction terms and hypnotizability were Absorption × Total Visual Imagery, $r = .18$; Absorption × Total Motor Imagery, $r = .17$; and Total Visual × Total Motor Imagery, $r = .05$.

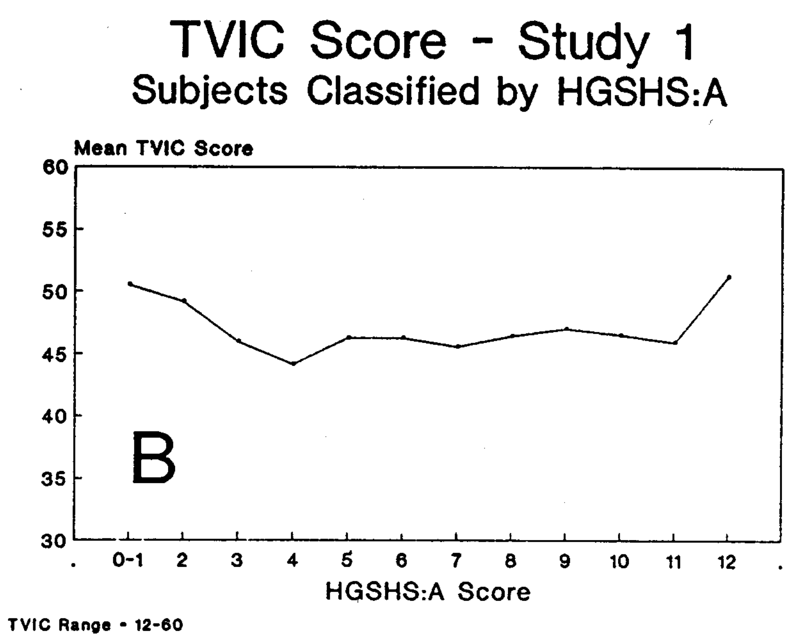
Study 2

Study 1 confirmed that the linear relationship between hypnotizability and visual imagery is rather weak, even compared to the relationship between hypnotizability and absorption, and extended this result to motor imagery. However, specific tests for nonlinearity occasionally produced different results. For visual imagery, there was no evidence of either an overall nonlinear trend or a specific quadratic trend. But for movement imagery, there were significant quadratic trends for both total score and internal imagery and a trend in that direction for external imagery. Although these findings are interesting, experience with absorption indicates that nonlinear trends should be replicated before they are taken too seriously (Glisky et al., 1991). The purpose of Study 2 was to replicate the findings of Study 1 and to explore a slightly different means of distinguishing between internal and external motor imagery.

Method

The materials and procedures for this study were the same as in Study 1, with one exception. In addition to the standard measures of internal and external motor imagery, the VMIQ was expanded to include a third type of rating: *watching yourself (as if on video)* (VMIQ-V); accordingly, the VMIQ-T score was the sum of three subscales, and therefore, total scores ranged from 72 to 360. A total of 750 subjects took part in the study, with the number of subjects contributing data for each scale varying from 602 to 690.


VVIQ Score - Study 1
Subjects Classified by HGSHS:A
Mean VVIQ Score
80
70
60
50
40
A
0-1 2 3 4 5 6 7 8 9 10 11 12
HGSHS:A Score
VVIQ Range • 16-80


TVIC Score - Study 1
Subjects Classified by HGSHS:A
Mean TVIC Score
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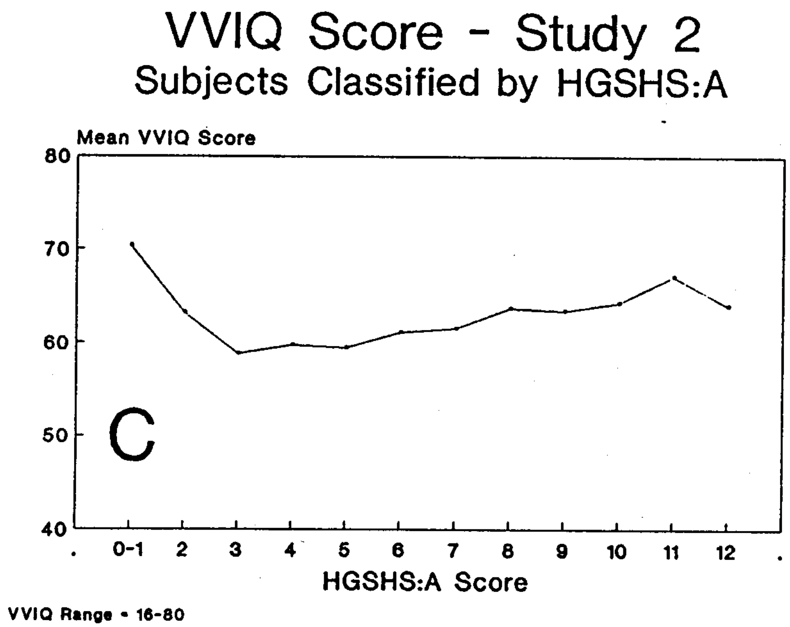
55
50
45
40
35
30
B
0-1 2 3 4 5 6 7 8 9 10 11 12
HGSHS:A Score
TVIC Range • 12-60



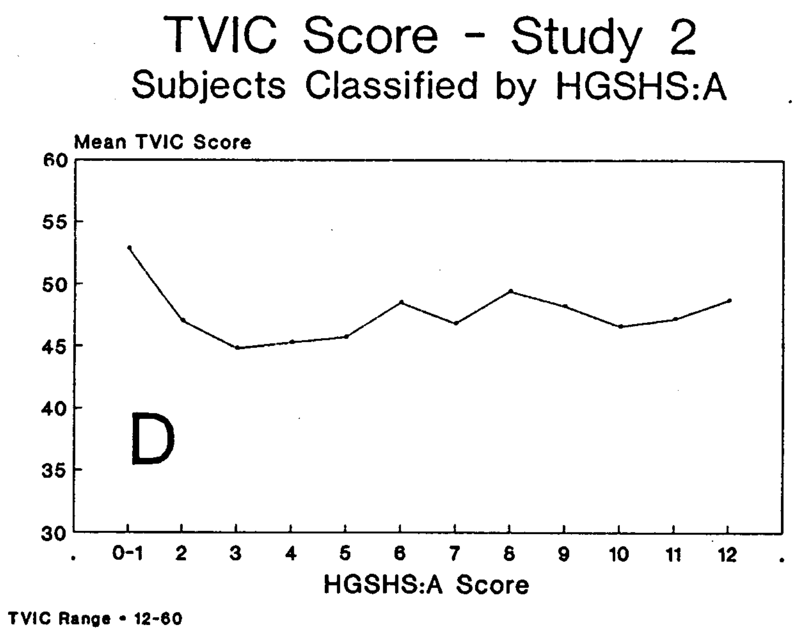


Figure 2. **Mean VVIQ (Study 1, Panel A, Study 2, Panel C) and TVIC (Study 1, Panel B; Study 2, Panel D) scores for subjects classified according to HGSHS:A score.**

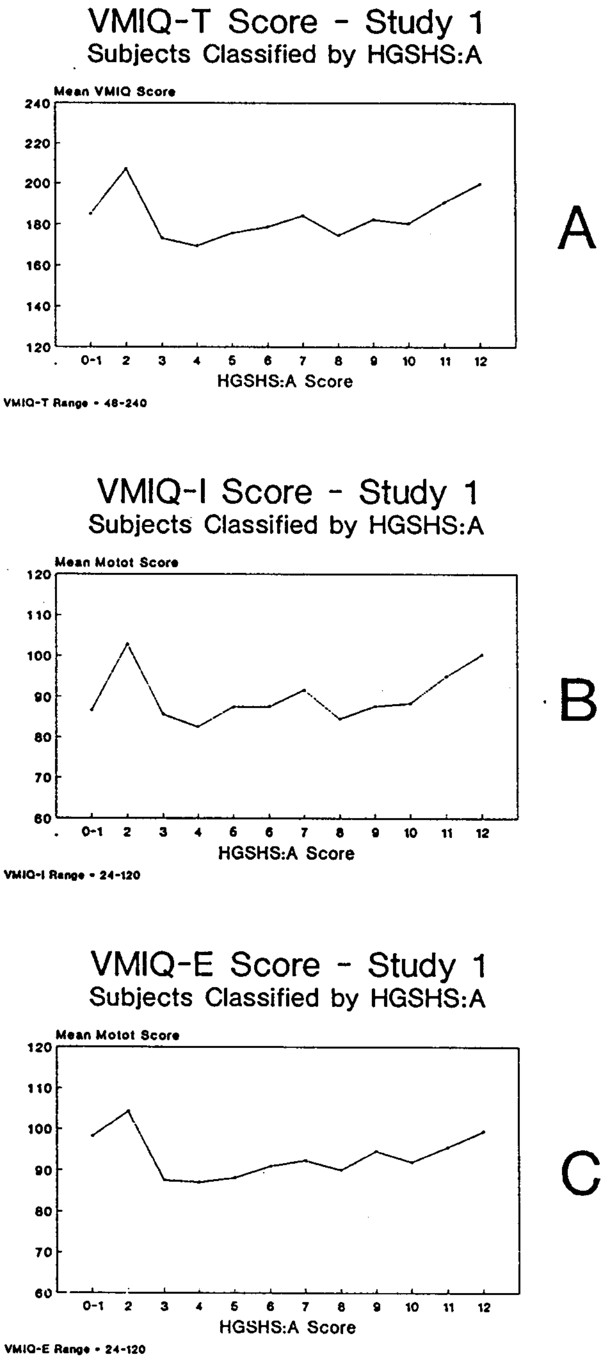


Figure 3. **Mean VMIQ Total (Panel A), Internal (Panel B), and External (Panel C) scores for subjects classified according to HGSHS:A score (Study 1).**

Results

The average scores on each of the scales and the correlations between them are reported in Table 2. The mean HGSHS:A score was 6.62 (SD = 2.59), which was again similar to that typically obtained from large samples of college student volunteers, as was the mean score of 82.76 (SD = 19.61) on our 5-point version of the TAS. The VVIQ, TVIC, and VMIQ means were also comparable (Campos & Perez, 1988; Kihlstrom et al., 1991).

Absorption and hypnotizability. The correlation between HGSHS:A and TAS was r = .18, similar to that obtained in other studies of this type. Subjects with HGSHS:A scores of 0 or 1 were again combined into a single group for the nonlinearity analysis. The general linear model showed the same pattern as in Sample 1. There was a significant linear relation, $F(1, 666) = 23.21$, $p < .001$, but no significant nonlinear trend, $F(10, 666) = .33$, nor a quadratic trend, $F(1, 666) = .17$ (see Figure 1, Panel B).

Visual imagery and hypnotizability. The visual imagery variables again showed substantially lower correlations with HGSHS:A: VVIQ, r = .07; TVIC, r = .04. For VVIQ, the general linear model did not quite reach significance for either the linear relation, $F(1, 689) = 3.67$, $p < .10$, or the nonlinear trend $F(10, 689) = 1.70$, $p < .10$; however, the quadratic trend was significant, $F(1, 722) = 4.89$, $p < .05$ (Figure 2, Panel C). For TVIC, there were no significant relations: linear, $F(1, 624) = 1.43$; nonlinear, $F(10, 624) = 1.64$; quadratic, $F(1, 624) = .52$ (Figure 2, Panel D).

Motor imagery and hypnotizability. Similarly, the correlations between motor imagery and hypnotizability hovered around zero: VMIQ-I, r = .02; VMIQ-E, r = .01; VMIQ-V, r = .08; VMIQ-T, r = .04. The only significant linear relation was for VMIQ-V, $F(1, 666) = 4.73$, $p < .05$. There was a significant nonlinear trend found for the total scale, VMIQ-T, $F(10, 601) = 2.31$, $p < .05$ (Figure 4, Panel A). None of the other movement imagery subscales showed any significant linear, nonlinear, or quadratic trends (Figure 4, Panels B, C, and D).

Regression analysis. Scores on absorption, each imagery variable, and the three interaction terms employed in Study 1 were entered into a multiple regression predicting HGSHS:A scores. The resulting multiple regression coefficient, R = .18, was no greater than the correlation obtained with absorption alone. The correlations between the interaction terms and hypnotizability were Absorption × Total Visual Imagery, r = .18; Absorption × Total Motor Imagery, r = .16; and Total Visual × Total Motor Imagery, r = .08.

Discussion

This study found, as expected, that absorption was a significant (if modest) correlate of hypnotizability. More disappointing results were

Table 2
Sample 2: Descriptive Statistics and Correlations

			Correlations						
	Mean	*SD*	HGSHS	TAS	VVIQ	TVIC	VMIQ-T	VMIQ-E	VMIQ-I
HGSHS:A	6.62	2.44	—						
TAS	82.76	22.03	.18	—					
VVIQ	61.91	12.74	.07	.15	—				
TVIC	47.20	8.80	.04	.23	.44	—			
VMIQ-T	273.59	57.84	.04	.16	.53	.53	—		
VMIQ-E	95.33	21.14	−.01	.12	.54	.50	.86	—	
VMIQ-I	92.52	22.70	.02	.12	.47	.47	.89	.71	—
VMIQ-V	84.66	23.96	.08	.13	.36	.41	.84	.54	.62

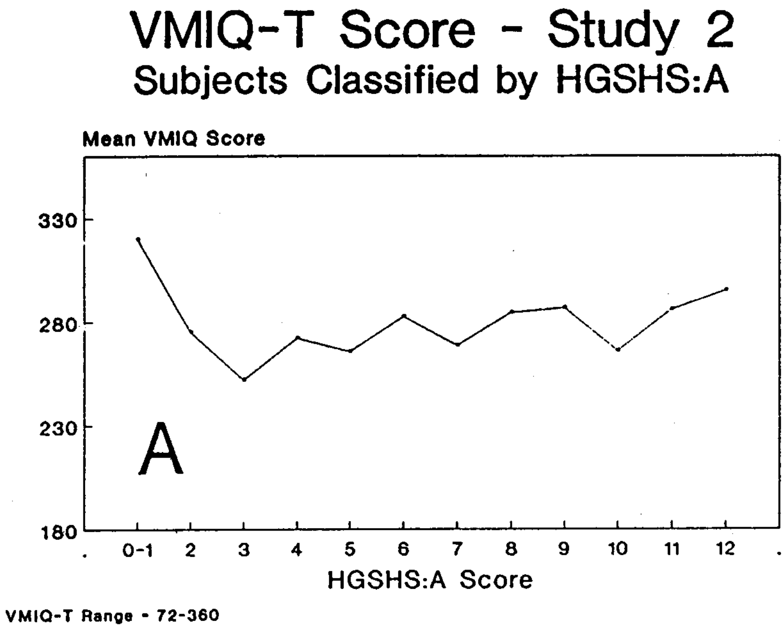
Note. HGSHS:A = Harvard Group Scale of Hypnotic Susceptibility, Form A; TAS = Tellegen Absorption Scale; VVIQ = Vividness of Visual Imagery Questionnaire; TVIC = Test of Visual Imagery Control; VMIQ = Vividness of Motor Imagery Questionnaire (T = total, E = external, I = internal, V = video).

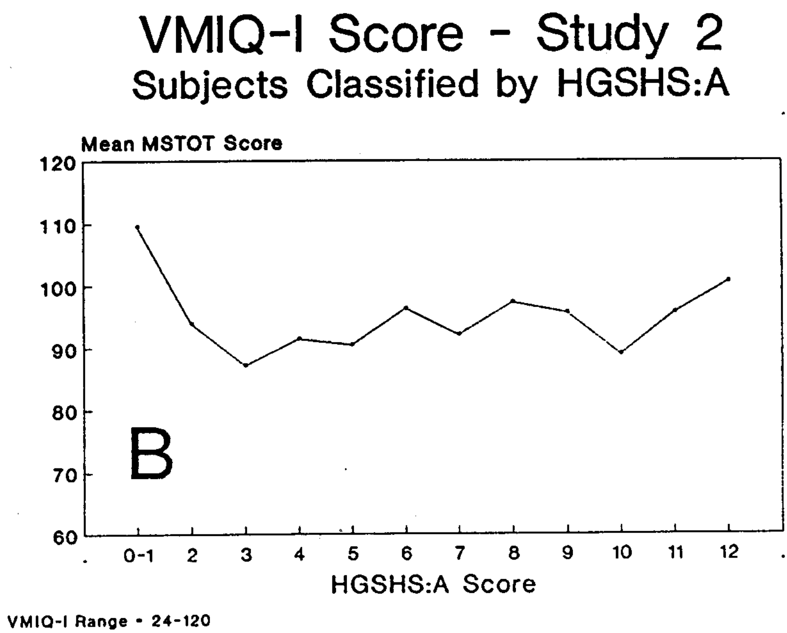
obtained with the measures of mental imagery. Vividness of visual imagery correlated significantly with hypnotizability in one study but not the other; the average correlation, $r = .08$, was only half that obtained for absorption, $r = .20$. The difference between the correlations involving TAS and VVIQ was significant for Study 1, $t(697) = 3.02$, $p < .01$, and for Study 2, $t(599) = 2.10$, $p < .05$. Control of visual imagery yielded even lower correlations, averaging $r = .03$; these also differed significantly from those involving absorption. Low correlations between hypnotizability and visual imagery ability have been observed before (deGroh, 1989), and the direct comparison with absorption only brings the problem into bold relief.

Motor imagery proved to be not much better in this respect, depending on the vantage point from which motor imagery was assessed. The correlation with internal motor imagery averaged $r = .03$, whereas that with external motor imagery averaged $r = .02$. When the definition of motor imagery included watching oneself as if on video (Study 2), the correlation increased to $r = .08$. The difference between the correlations involving external and video imagery (data from Study 2) was significant, $t(599) = 2.31$, $p < .05$; the difference between internal and video imagery was not significant, $t(599) = 1.69$, *ns*. The correlation with total motor imagery, defined as the sum of individual motor imagery components, averaged $r = .04$. These correlations also differed significantly from those involving absorption: Study 1, $t(697) = 3.76$, $p < .001$; Study 2, $t(599) = 2.69$, $p < .01$. The correlations involving visual and total motor imagery did not differ significantly.

Although our imagery correlations were somewhat lower than those obtained by Farthing et al. (1983), who used different instruments to measure imagery vividness, the general pattern of results was the same. In predicting overall hypnotizability, absorption is best, and visual imagery is better than motor imagery. Considering the interactions among imagery variables, and between absorption and imagery, failed to improve the prediction of hypnotizability over the level achieved by absorption alone.

Following the example of Farthing et al. (1983), we also examined the correlations between visual and motor imagery and hypnotizability subscale scores representing performance on ideomotor, challenge, and cognitive items. In Sample 1, total visual and motor imagery scores both failed to predict either ideomotor response (*rs* = –.01 and .00, respectively) or challenge response (*rs* = .05 and .04, respectively), although visual imagery was somewhat better than motor imagery as a predictor of cognitive response (*rs* = .08 and .02, respectively). By comparison, the correlations between absorption and ideomotor, challenge, and cognitive subscales were $r = .14$, .21, and .12, respectively. A similar pattern of results was obtained in Sample 2. Motor imagery, at least as assessed by the VMIQ, does not appear to be a particularly good predictor of


VMIQ-T Score - Study 2
Subjects Classified by HGSHS:A
Mean VMIQ Score
330
280
230
180
A
0-1
2
3
4
5
6
7
8
9
10
11
12
HGSHS:A Score
VMIQ-T Range - 72-360


VMIQ-I Score - Study 2
Subjects Classified by HGSHS:A
Mean MSTOT Score
120
110
100
90
80
70
60
B
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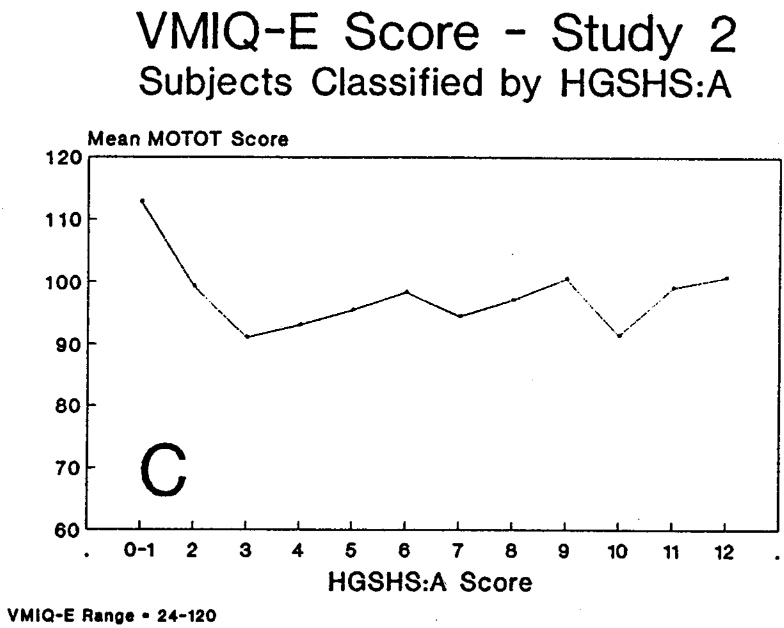
HGSHS:A Score
VMIQ-I Range - 24-120



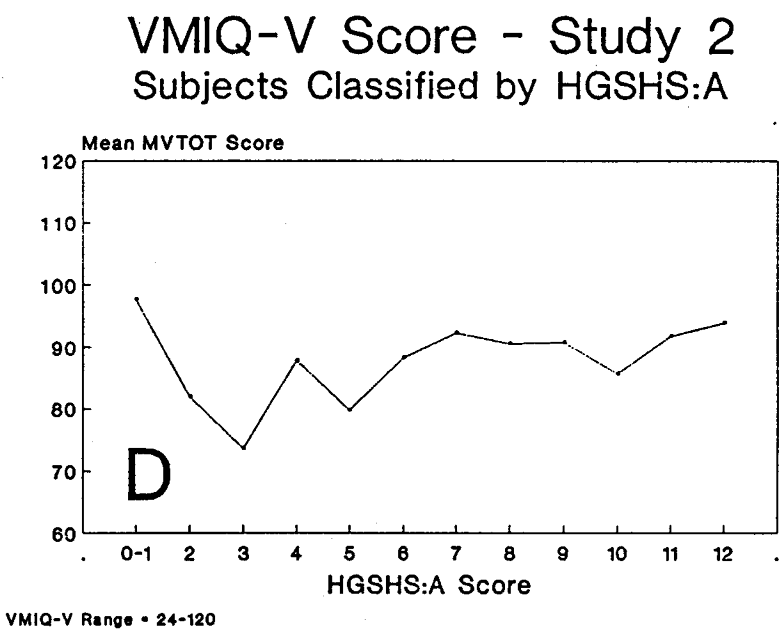


Figure 4. **Mean VMIQ Total (Panel A), Internal (Panel B), and External (Panel C), and Video (Panel D) scores for subjects classified according to HGSHS:A score (Study 2).**

response to the motor items of HGSHS:A. The only exception was video motor imagery, assessed in Study 2, which correlated $r = .11$ with ideomotor response, but $r = .05$ and .05 with challenge and cognitive response, respectively.[4]

Overall, a search for significant nonlinear trends relating hypnotizability to absorption and imagery yielded very little. Significant nonlinear or quadratic trends occasionally appeared in one study, but not in the other. The only exception was total motor imagery, which yielded a significant nonlinear relationship in both studies. The quadratic component was significant in Study 1, but not in Study 2. This, too, is consistent with our previous findings with respect to absorption (Glisky et al., 1991). For the record, a search for gender differences in these relationships largely failed to yield any consistent pattern of results. No gender difference appearing in one sample also appeared in the other, with one exception: for visual imagery control, the quadratic trend was consistently significant for men but not for women.

The low correlations between imagery and hypnotizability seem difficult to explain in terms of context effects on predictor-criterion relationships. In a provocative study, Council, Kirsch, and Hafner (1986) found that the relationship between absorption and hypnotizability was strengthened when the two measures were administered in the same situational context, as opposed to when they were administered independently. Their explanation was based on the notion that hypnotic response is determined by subjects' expectancies. Subjects who are aware of endorsing many items on the absorption scale generate correspondingly high expectations for their subsequent response to hypnosis, which translate into high hypnotizability in a sort of self-fulfilling prophecy.

This argument has been controversial (Nadon, Hoyt, Register, & Kihlstrom, 1991), but has received additional empirical support (for a review, see Council, 1993). Obviously, the context effect argument should apply to any predictor variable that is intuitively relevant to hypnosis. Imagery is certainly such a variable; thus, the failure of imagery to correlate substantially with hypnotizability, even when the two variables are assessed in the same situation, poses problems for the assertion that context effects are powerful and generalizable.

The failure of imagery measures to correlate highly with hypnotizability remains puzzling. Hypnosis begins and ends in imagery, as through-

[4]The enhanced correlation between hypnotizability (especially response to ideomotor suggestions) and video motor imagery is intriguing. The outcome might be due to the addition of an explicit visual component to the motor imagery task, but this cannot be the entire reason because external motor imagery also had a visual element, defined as watching somebody else. What seems to be important is the combination of visual and motor imagery involving oneself; this, of course, is precisely the combination of skills required by so many hypnotic suggestions. However, the correlations in question are still low, even by comparison to absorption. And we have long since learned (Glisky et al., 1991) to replicate our correlational results before we erect much theoretical superstructure.

out the hypnotic procedure subjects are asked to imagine certain states of affairs and experience them as subjectively real. Thus imagery is a cognitive skill that would seem to be directly relevant to hypnosis. Perhaps better imagery instruments will allow stronger relationships with hypnotizability, including stronger nonlinear relationships, to emerge. In part, by "better," we mean more difficult items that will tap the whole range of imagery abilities (Kihlstrom et al., 1991). But in addition, other dimensions of imagery also may be relevant: control of imagery (again, with more difficult items), effortlessness in imagining P. Bowers, 1982), and absorption in imagining (Tellegen & Atkinson, 1974) may very well prove at least as important as vividness per se.

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Hypnotisierbarkeit und geistige Bildvorstellung

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Abstrakt: Zwei Studien untersuchten die Beziehung zwischen geistiger Bildvorstellung und Hypnotisierbarkeit, in denen die Bilfvorstellungsmaße in einem hypnotischen Kontext administriert worden waren. Die Korrelation der Hypnotisierbarkeit mit Lebendigkeit der Bildvorstellung war in einem Studium bedeutend aber nicht in dem andern; beide Korrelationen waren bedeutlich niedriger als die, die zwischen Hypnotisierbarkeit und Absorption erhaltene und im gleichen Muster bewertete. Die Korrelationen mit Kontrolle der visuallen Bildvorstellung und mit verschiedenen Maßen der Lebendigkeit der motorischen Bildvorstellung waren sogar noch niedriger und kaum von Bedeutung. Außer einem Aggregatindex der motorischen Bildvorstellung ergag eine Suche nach bedeutenden, nicht-linearen Beziehungen mit Hypnotisierbarkeit nichts, das konsequent quer durch die Studien war. Zukünftige Studien über Bildvorstellung und Hypnotisierbarkeit sollten bessere Lebendigkeitsmaße der geistigen Bildvorstellung benutzen und die Relevanz von andern Bildvorstellungsaspekten als Lebendigkeit in Betracht ziehen.

Susceptibilité à l'hypnose et imagerie mentale

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Résumé: Deux recherches ont investigué la relation entre l'imagerie mentale et la susceptibilité à l'hypnose à l'aide de mesures d'imagerie administrées dans un contexte d'hypnose. La correlation entre la susceptibilité à l'hypnose et la clarté de l'imagerie s'est avéré significative dans une étude mais pas dans l'autre. Ces deux corrélations étaient significativement moins élevées que celles obtenues entre la susceptibilité à l'hypnose et l'absorption mesurées dans les mêmes échantillons. Les corrélations avec le contrôle de l'imagerie visuelle et avec des mesures variées de la clarté de l'imagerie motrice étaient encore moins élevées et rarement significatives. À l'exception d'un index composite de l'imagerie motrice, la recherche d'une relation non-linéaire significative avec la susceptibilité à l'hypnose n'a révélé rien de constant à travers les études. Les futures recherches sur l'imagerie et la susceptibilité à l'hypnose devraient faire appel à de meilleures mesures de clarté de l'imagerie mentale et considérer l'importance d'autres aspects de l'imagerie que la clarté.

Sugestibilidad hipnótica e imaginería mental

Martha L. Glisky, Douglas J. Tataryn, y John F. Kihlstrom

Resumen: Dos estudios investigaron la relación entre imaginería mental y sugestibilidad hipnótica, las mediciones de la imaginería fueron administradas en un contexto hipnótico. La correlación de la sugestibilidad con la nitidez de la imaginería fué significativa en un estudio, pero no para el otro; ambas correlaciones fueron significativamente más bajas que las obtenidas entre sugestibilidad y absorción, evaluadas en la misma muestra. Las correlaciones con el control de la imaginería visual y con varias medidas de la nitidez de la imaginería motora fueron aún menores y escasamente significativas. Con la excepción de un índice agregado de imaginería motora, la búsqueda de relaciones significativas no lineales con la sugestibilidad no produjo nada consistente en ambos estudios. Estudios futuros sobre imaginería y sugestibilidad hipnótica deberán hacer uso de mejores medidas sobre la imaginería mental y considerar además la relevancia de otros aspectos de la imaginería aparte del de nitidez.