THE RELATIONSHIP BETWEEN NIGHTMARE FREQUENCY AND
HYPNOTIC SUSCEPTIBILITY: VALID CORRELATION
OR CONTEXT-MEDIATED ARTIFACT?

THESIS

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The possibility that a positive correlation between nightmare frequency and hypnotic susceptibility reported by Belicki and Belicki (1986) was an artifact of administering a sleep questionnaire in the context of a hypnosis experiment was tested in the present study. Measures of vividness and absorption were also administered. Forty subjects, twenty of whom were told that the measures were related to hypnotic responding, completed the questionnaires immediately prior to hypnosis. Twenty other subjects, who completed the questionnaires in contexts unrelated to hypnosis, were later hypnotized. The hypothesis that context of administration of the questionnaires influenced the relationship between the measures and hypnotic susceptibility was not supported. Replication using a larger sample was recommended.
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CHAPTER I

INTRODUCTION

While the existence of persistent individual differences in hypnotic susceptibility is commonly accepted, most empirical attempts to identify correlates of hypnotic susceptibility have produced negative or inconsistent findings. One of the most promising areas of research has been the study of subjective experiences which correlate with hypnotic susceptibility. The study of absorption, which has been defined as "a capacity for absorbed and self-altering attention" (Tellegen & Atkinson, 1974, p. 276), has received particularly close attention. Numerous studies (e.g., Crawford, 1982; Farthing, Venturino, & Brown, 1983; Finke & Macdonald, 1978) have supported the relationship between absorption and hypnotic susceptibility, while other research (e.g., Hilgard, 1970) has shown that variables which correlate with absorption, such as vividness of visual imagery, also correlate with hypnotic susceptibility.

The finding that nightmare frequency correlates with absorption, vividness of visual imagery, and hypnotic susceptibility has led some investigators to hypothesize that a specific cognitive style underlies both hypnotic responding
and nightmares (Belicki & Belicki, 1986). Recently, however, a study by Council, Kirsch, and Hafner (1986) has challenged the relationship between absorption and hypnotic susceptibility, claiming that it is a context-mediated artifact. The Council et al. study has far-reaching implications for research aimed at discovering relationships between hypnotic susceptibility and other personality and experiential variables. The present study investigated the possibility that the relationship between hypnotic susceptibility and nightmare frequency may have been affected by contextual factors.

The Assessment of Hypnotic Susceptibility

Typically, hypnotic susceptibility is operationally defined in terms of one's score on a standardized hypnotic susceptibility scale. The most widely used hypnotic susceptibility scales for research purposes are the Stanford Hypnotic Susceptibility Scale, Forms A and B (Weitzenhoffer & Hilgard, 1959; SHSS:A & SHSS:B), the Stanford Hypnotic Susceptibility Scale, Form C (Weitzenhoffer & Hilgard, 1962; SHSS:C), and the Harvard Group Scale of Hypnotic Susceptibility (Shor & Orne, 1962; HGSHS). The 12-item, individually administered SHSS:A and B, which consist primarily of undemanding motor items, were the first hypnotic susceptibility scales to undergo rigorous psychometric evaluation. The SHSS:C, also a 12-item individually
administered scale, extends the two previous scales by including more difficult items which require perceptual-cognitive distortions. The HGS HS is a version of the SHSS:A adapted for group administration. Three other scales less commonly employed in research are the Stanford Profile Scales I and II (Weitzenhoffer & Hilgard, 1967; SPS:I & SPS:II), 9-item, individually administered scales designed to identify specific areas of hypnotic susceptibility; the Barber Suggestibility Scale (Barber, 1965; BSS), an 8-item, individually administered instrument which uses objective scorings of overt behavioral responses and subjective reports of inner experience to calculate an index of responsivity to suggestions; and the Carleton University Responsiveness to Suggestion Scale (Spanos et al., 1983; CURSS:S), a 7-item scale which also assesses experiential as well as overt responses. Unlike other hypnotic susceptibility scales, a prior hypnotic induction procedure is optional with the BSS.

The Stability of Hypnotic Susceptibility

Hypnotic susceptibility, as measured by standardized and reliable instruments such as the Stanford Scale of Hypnotic Susceptibility, is generally considered a relatively stable personality characteristic (e.g., Hilgard, 1965; Perry, 1977). The short-term stability of hypnotic susceptibility is supported by test-retest reliability coefficients for the various scales of about $r = .90$ over a period of several
weeks (Hilgard, 1965). In a study of long-term stability, Morgan, Johnson, and Hilgard (1977) retested subjects on the SHSS:A after an 8 to 12-year interval and reported a correlation between total scores on the two testings of \( r = .60 \). Piccione, Hilgard, and Zimbardo (1989) have recently reported a stability coefficient of .71 for hypnotizability at a 25-year retest.

Cross-scale correlations, which range from \( r = .58 \) between the SHSS:C and the BSS (Bowers, 1976) to \( r = .85 \) between the SHSS:C and the SHSS:A, corrected for attenuation (Weitzenhoffer & Hilgard, 1962), provide additional supporting evidence for the notion that an individual's hypnotic susceptibility is a relatively stable characteristic.

Although experimental modifications in hypnotic susceptibility have been associated with such diverse techniques as alpha-feedback training (e.g., London, Cooper, & Engstrom, 1974), sensory deprivation (Sanders & Reyher, 1969), practice in hypnosis (e.g., Kinney & Sachs, 1974), and manipulated expectancies (e.g., Gregory & Diamond, 1973), many of these studies have been flawed by methodological problems, including small number of subjects and lack of control groups. The frequent finding of a high correlation between pre- and postmodification susceptibility scores indicates that modifiability is quite limited (Perry, 1977).
Individual Differences in Hypnotic Susceptibility

The fact that persons differ in their susceptibility to hypnotic suggestions has been acknowledged at least since the investigations of the Franklin Commission in 1784. Over the past two centuries numerous explanations for differential susceptibility have been advanced. The Franklin Commission concluded, among other things, that susceptible individuals evinced a surfeit of imagination (Bowers, 1976). In the next century, French neurologist Jean-Martin Charcot proposed that hypnotic susceptibility resulted from an organic disease of the nervous system and was limited to hysterics, while Liébeault and Bernheim theorized that suggestion was the primary factor in hypnosis (Alexander & Selesnick, 1966). In our time, the use of standardized reliable instruments for the measurement of hypnotic susceptibility has confirmed the existence of marked individual differences in hypnotic susceptibility.

As an arguably stable, distinctive, and measurable personality trait, hypnotic susceptibility is possibly related to other aspects of psychological functioning. Thus, a traditional goal of research in hypnosis has been the discovery of the correlates of hypnotic susceptibility. Personality Correlates of Hypnotic Susceptibility

Initially, the search for personality correlates of hypnotic susceptibility produced negative findings. In 1964
Barber reviewed published research on the relationship between hypnotic susceptibility and a variety of personality characteristics such as impunitiveness, hysteria, extroversion, prior imaginative-fantasy experiences, responses to the Rorschach, self-report personality inventories, and ratings, interviews, and clinical assessments of personality. Although a few personality traits had been found to correlate with hypnotic susceptibility, Barber (1964) reported that attempted replications had failed to confirm these findings.

Subsequent research only added to the confusion. Hilgard, Lauer, and Cuca (1965) found a small but significant correlation between the Minnesota Multiphasic Personality Inventory (MMPI) Sum-True Score and the SHSS:C for both males and females, but found that the correlation with the SHSS:A was not significant. Derman and London (1965) reported that the Guilford Rhathymia (R) Scale correlated significantly with the HGSHS:A for females but not for males, while the Thinking Introversion (T) Scale correlated significantly with susceptibility for males but not for females. Bowers (1971) found a relationship between creative functioning and hypnotic susceptibility only for women, but Bowers (1978) reported this relationship for both sexes. Goldberger and Wachtel (1973) failed to replicate Roberts' (1964; cited in Goldberger & Wachtel, 1973) findings of a weak tendency for field dependent females to be less hypnotizable.
Decades of research have failed to uncover simple, reliable relationships between hypnotic susceptibility and standard personality measures. Furthermore, Bowers (1976) has cautioned that the factorial complexity of hypnosis (Hilgard, 1965) tends to undermine any simple pattern of personality correlates with hypnotic susceptibility. Nevertheless, this investigative approach has not been abandoned. In recent years, Kihlstrom et al. (1980) reported no significant correlation between the HGSHS:A and the Achievement and Autonomy Scales of the Personality Research Form, Form AA (PRF:AA). A factor analytical study (Hart, Norman, Brotman, & Payne, 1983), using the 16PF test, found that of five varimax rotated factors, only Sociability was correlated with hypnotic susceptibility. Fromm, Lombard, Skinner, and Kahn (1987-1988) have reported that "ego receptivity," i.e., openness to stimuli rising from within, is positively related to hypnotic susceptibility.

**Experiential Correlates of Hypnotic Susceptibility**

A fresh line of inquiry was initiated by two independent researchers, Ronald E. Shor and Arvid Ås, who pursued a more phenomenological approach to the problem. In a theoretical paper, Shor (1959) extended the views of White (1937) by postulating two dimensions in hypnosis: a special task-orientation (role-playing) and a concomitant state characterized by the fading of the so-called generalized
reality-orientation (trance). Shor hypothesized that such ordinary occurrences as daydreaming, meditation, or absent-mindedness involve the same dual processes found in hypnosis. Shor (1960) subsequently suggested that the ability to suspend the generalized reality-orientation is a durable cognitive attribute underlying hypnotic susceptibility which cuts across traditional classifications of personality traits. Using a 44-item written questionnaire, he found a high incidence of naturally occurring hypnotic-like experiences in two normal college samples (Shor, 1960). Ås, O'Hara, and Munger (1962) incorporated 18 items from Shor's (1960) questionnaire in their 60-item Experience Inventory, an instrument designed to survey unusual non-hypnotic experiences presumably related to hypnotic susceptibility. Ås (1963) reported significant correlations between total scores from the Experience Inventory and hypnotic susceptibility in two samples of female college students.

Factor analysis of 24 items representative of the Experience Inventory, which had been selected irrespective of relationship to hypnotic susceptibility, found two main factors: role absorption, and the experience and tolerance of unusual experiences occurring in an altered state of consciousness, such as sleep activity (Ås et al., 1962). Ås (1963) reported that the experience of "having been so
absorbed in reading that one 'lived' the story almost like real," an item loading on the role-absorption factor, correlated .41 with hypnotic susceptibility, while the following two sleep-related items also obtained low but significant correlations: (a) Having carried on real conversation with another person while asleep (τ = .19), and (b) Having completed some task during the night with no memory of having done so (τ = .23).

Shor, Orne, and O'Connell (1962) reported that their Personal Experiences Questionnaire, a 149-item extension of Shor's earlier 44-item self-report inventory, was a reliable and valid predictor of hypnotic susceptibility, especially for the deeper regions of hypnotizability. Included among the topic areas covered in this questionnaire were the following categories: (a) the activities of sleeping, such as carrying on a conversation while asleep, (b) the characteristics of dreams or dreaming, and (c) temporary loss of awareness of generalized reality when absorbed or preoccupied. As and Lauer (1962) factor analyzed 23 items of personal experiences previously demonstrated to be related to hypnotic susceptibility and 19 items from two hypnosis scales. They found that the majority of the personal experiences items loaded on a factor representing the capability of the subject to change mental state or to have experiences which imply an altered state of cognition, such
as entering into a benumbed state by focusing hard on something. Among the items with the highest loadings on this factor was the aforementioned item "Having been so absorbed in reading that one 'lived' the story almost like real," and other items which presupposed "a certain level of dissociation" (p. 176). The Hypnotic Characteristics Inventory (HCI) of Lee-Teng (1965), which was based on the inventories of Shor and Ås, correlated with hypnotic susceptibility. The trancelike experiences subscale correlated .19, and the role-playing subscale correlated .38, with the SHSS:C. However, Lee-Teng found that questionnaire measures were confounded with an acquiescence tendency and that inventory items correlated with a subject's capability to experience trance (trance-susceptibility) but did not correlate with a subject's susceptibility to hypnotic induction (induction-susceptibility). In 1974 Tellegen and Atkinson, in attempting to extend and clarify these prior investigations, identified an "essential component" (p. 276) of hypnotic susceptibility which they termed Absorption.

**Absorption and Hypnotic Susceptibility**

Tellegen and Atkinson (1974) began by constructing a 71-item self-report questionnaire (Q3) consisting of 30 items which had been found either to be related to hypnotic susceptibility (Ås, 1963) or to belong to scales showing that relationship (Lee-Teng, 1965). Eighteen additional items
were selected from a Trust Rating Scale (Roberts & Tellegen, 1973), and 23 new items were also included. An initial factor analysis designed to replace the 71-item scale by a smaller number of homogeneous scales resulted in 11 primary factor scales. Twenty items were chosen from Block's (1965; cited in Tellegen & Atkinson, 1974) Ego Resiliency and Ego Control questionnaire to form a Stability-Neuroticism scale. Analysis of the combined questionnaire data yielded three major dimensions, the largest of which was labeled "Openness to Absorbing and Self-Altering Experiences," or Absorption. The scales with the highest loadings on the absorption factor were Reality Absorption, Fantasy Absorption, Dissociation, and Openness to Experience. Of the three major dimensions, only absorption correlated consistently and significantly with hypnotic susceptibility: in two samples of over 100 subjects, the Tellegen Absorption Scale (TAS) correlated .27 and .43 with measures of hypnotic susceptibility. Referring to the central concept in Hilgard's (1965) theory of hypnosis, Tellegen and Atkinson (1974) noted that a capacity for dissociation, which they described as experiencing an altered sense of self, appeared to be intrinsic to absorption. They also cited the work of Hilgard (1970) who reported a relationship between imaginative involvement, which corresponds to the absorption factor, and hypnotic susceptibility.
Numerous subsequent studies confirmed the relationship between the Tellegen Absorption Scale (TAS) and hypnotic susceptibility. Spanos and McPeake (1975b) reported significant correlations of $r = .43$, $r = .37$, and $r = .43$ between the TAS and the HGSHS for their total sample, male subjects, and female subjects, respectively. The same authors (Spanos & McPeake, 1975a) subsequently reported a significant correlation of $r = .41$ between the TAS and the HGSHS. In a study involving six separate samples which comprised a total of 1300 subjects, Kihlstrom et al. (1980) found a significant correlation of .27 between the TAS and the HGSHS:A. Farthing, Venturino, and Brown (1983) reported a correlation of $r = .35$ between the TAS and total scores on the HGSHS:A and also found that the correlation tended to be higher for the HGSHS:A cognitive factor than for either the ideomotor or challenge factors. Spanos et al. (1983) found that the TAS correlated significantly with the HGSHS:A and with the three suggestibility dimensions of the CURSS (range: $r = .33$ to $r = .42$). Crawford (1982) reported a correlation between the TAS and the mean score of the SHSS:A and SHSS:C of $r = .30$ for her total sample, $r = .57$ for the females and $r = .36$ for the males. Nadon, Laurence, and Perry (1987), using stepwise discriminant analysis techniques, found absorption to be a robust predictor of hypnotic susceptibility. Council, Kirsch, Vickery, and Carlson
(1983), using 10 items from the SHSS:C, found a low but significant correlation ($r = .21$) between the TAS and the standard SHSS:C behavioral scores.

Other studies, using various measures of hypnotic susceptibility and absorption, have supported the relationship. When Council et al. (1983) borrowed Wilson and Barber's (1978) self-scoring form for the Creative Imagination Scale, they found an expected correlation ($r = .30$) between the TAS and subject ratings of the "realness" or experienced intensity of each suggestion on the SHSS:C. Frischholz, Spiegel, and Trentalange (1987), assessing three clinical groups (smokers, phobics, and chronic pain patients) found correlations between the Hypnotic Induction Profile and the TAS ranging from .33 to .53. Finke and Macdonald (1978) found that the absorption subscale of the Differential Personality Questionnaire (Tellegen, 1976; DPQ), a refined version of the original TAS, correlated .39 with a group version of the SHSS:C. Saavedra and Miller (1983) reported that the absorption subscale of the DPQ correlated significantly with HGSHS:A scores for a combined group representing three levels of induced expectancies. Finke and Macdonald (1978) also reported that a scale of receptivity to trance-like experiences (Swanson, 1978), which has a correlation of .66 with the TAS, correlated significantly with hypnotic susceptibility. The
Rotenberg and Bowers' Absorption Questionnaire (Bowers, 1978) also correlates with both the TAS and hypnotic susceptibility.

Based on these studies, researchers tend to agree that absorption, the capacity to become deeply involved in an activity, is related to hypnotic susceptibility and may even underlie it (Bowers, 1976).

**Vividness of Imagery and Hypnotic Susceptibility**

The importance of imagery in hypnotic susceptibility has long been suspected. A relationship between vividness of mental imagery and unconscious motor responses, which was originally reported by Jenness and Jorgensen (1941), pointed to a possible relationship between mental imagery and hypnotic responding. Arnold (1946), on largely theoretical grounds, argued that hypnosis consisted in "concentrating and therefore intensifying the subject's imaginative processes" (p. 116). Although empirical support was subsequently provided by Sutcliffe (1958; cited in Sutcliffe, Perry, & Sheehan, 1970) and Shor et al. (1966), later research by Jenness (1965; cited in Sutcliffe et al., 1970) found no relationship. These inconsistent findings were attributed to methodological limitations in these early research efforts, such as the use of diverse instruments to assess vividness of imagery. Palmer and Field (1968), for example, reported a positive relationship between a measure of imagery derived
from the subject's fantasies to unpatterned light (Ganzfeld situation) and hypnotic susceptibility, while J. R. Hilgard (1970) found a small but significant correlation between hypnotic susceptibility and the Betts' Questionnaire Upon Mental Imagery (1909; Betts' QMI). In 1970, Sutcliffe et al., seeking to define imagery more reliably by using a vividness of imagery questionnaire adapted from Betts (Sheehan, 1967), found that poor imagers tended to be low in hypnotic susceptibility while vivid imagers tended to be both high and low in hypnotic susceptibility. Perry (1973) subsequently confirmed that subjects with extremely poor imagery tended to be insusceptible to hypnosis. Thus, an individual's ability or inability to image vividly predicted hypnotic insusceptibility better than hypnotic susceptibility.

Inconsistent sex differences in the correlation between hypnotic susceptibility and mental imagery have frequently been reported. For example, Coe, St. Jean, and Burger (1980), using items from Marks' Vividness of Visual Imagery Scale (1973; VVIQ) reported a significant correlation between vividness of visual imagery and hypnotic responsivity for males and for their total sample, but not for females, while Crawford (1982), who also employed the VVIQ, found the strongest correlation between vividness of visual imagery and hypnotic susceptibility for females. Farthing et al. (1983), however, reported that vividness of visual imagery and
vividness of a combination of visual and kinesthetic imagery both correlated significantly with hypnotic susceptibility, with no significant differences between the sexes.

Other inconsistent findings have been more provocative. Spanos, Valois, Ham, and Ham (1973), for example, found that vividness of imagery assessed by the modified Betts' scale was positively correlated with subjective scores on the BSS, while Lehman (1973; cited in Sheehan, 1979), who investigated imagery assessed by the Betts' QMI and hypnotic susceptibility in separate sessions, found no link. Although experts generally accept at least a modest relationship between mental imagery and hypnotic susceptibility (Bowers, 1976), the precise nature of the relationship remains unexplained and may be more complicated than previously thought. For example, Katsanis, Barnard, and Spanos (1988-1989) reported that the relationship between adopting an active interpretational set (i.e., believing one should actively bring about the suggested hypnotic effects) and hypnotic susceptibility was moderated by vividness of imagery.

Sleep, Dissociation, and Hypnotic Susceptibility

In 1843 Manchester surgeon James Braid coined the word "hypnosis" from hypnos, the Greek word for sleep. Braid's term updated the Marquis de Puységur's description of the trance state as "artificial somnambulism." The theory that
hypnosis represents a "partial sleep" is still accepted in the Soviet Union (Kratochvíl, 1970), and hypnosis has also been described as a "sleeplike state" by American researchers (Kunzendorf, Brown, & McGee, 1983). Evans (1982) posited that the ability to achieve deep hypnosis and to fall asleep easily share a common mechanism, possibly related to control over the level of consciousness. Recently, Wagner and Khanna (1986) suggested that hypnotic trance can be considered a deviation from normal waking consciousness along a continuum, rather than an isolated state.

Despite the fact that many researchers make a conventional distinction between the "waking state" and the "hypnotic state," sleep and hypnosis are fundamentally different. Standard trance inductions involve suggestions for drowsiness or sleep, but hypnotherapist Milton Erikson used various techniques to induce hypnosis in his subjects without any mention of sleep (Bowers, 1976). Barber, in fact, found that subjects could respond to his BSS without any induction whatsoever. Kratochvil (1970) hypothesizes that symptoms of drowsiness and sleep are only accidental characteristics of hypnosis, and research has shown that the EEG pattern displayed by the hypnotized subject more closely resembles that of a relaxed waking state rather than that of any known sleep stage (Diamant et al., 1960; Evans, 1972). Interestingly, the EEG pattern of REM or dreaming sleep
resembles that of light sleep (stage 1) or alert waking
(Bergen, 1969).

As early as 1924, Wells proposed the use of the term "waking hypnosis" to describe a state in which the typical hypnotic phenomena are developed, but in which sleep symptoms are absent. He suggested that during induction, hypnosis should be explained to the subject in terms of dissociation, with no reference to sleep. Dissociation, in its widest sense, refers to the separation of an idea or activity from the main stream of consciousness. The neodissociation theory of hypnosis proposed by Hilgard (1965) suggests that the dissociation necessary for experiencing hypnotic phenomena may be attributed to a general capacity for dissociation. Bowers (1976), describing dissociation specifically as "the ability to register (and sometimes respond to) information that is not consciously perceived" (p. 137), argues that a talent for dissociation facilitates the absorptive involvement of highly susceptible hypnotic subjects. Bowers (1976) speculates that this dissociative capacity permits such individuals to experience their absorbed attention or concentration as effortless. If a capacity for dissociation does underlie hypnosis, the fact that dissociated behaviors are relatively common in the sleep state (e.g., sleepwalking, sleeptalking) suggests a possible link between sleep and hypnotic trance. Several studies (e.g., Cobb et al., 1965;
Evans, Gustafson, O'Connell, Orne, & Shor, 1966, 1969, 1970) demonstrated that subjects highly susceptible to hypnosis have a better ability to dissociate (as shown by responsiveness to sleep-administered suggestions) than low-susceptible subjects. Research on hypnotic-like experiences (Ås, 1963; Shor et al., 1962) found a relationship between dissociated activities in sleep (such as carrying on a real conversation while asleep) and hypnotic susceptibility. In 1972 Evans conjectured that a particular dissociative ability, namely, the effective processing of information while asleep, is correlated with hypnotic susceptibility.

Persons who are high in hypnotic susceptibility share several characteristics with persons reporting certain sleep phenomena, especially dream experiences. For example, art majors not only score higher in hypnotic susceptibility than science or engineering majors (Hilgard, 1979), they also report more frequent dream recall (Schechter, Schmeidler, & Staal, 1965) and more nightmares (Belicki & Belicki, 1982). Vividness of imagery, which has been correlated with hypnotic susceptibility in several studies (e.g., Crawford, 1982; Sutcliffe et al., 1970), also has been reported to correlate with dream recall frequency (Hiscock & Cohen, 1973) and nightmare frequency (Belicki & Belicki, 1986). Creativity, which is associated with hypnotic susceptibility (e.g.,
Bowers & Bowers, 1979; Bowers, 1979), has been related to both dream recall frequency (Bone & Corlett, 1968; Orlinsky, 1966) and nightmare frequency (Hartmann, 1984).

As in the case of hypnotic susceptibility, the relationship between certain sleep phenomena and absorption appears to be relatively well-established. For example, Crawford (1982) reported that night-dreaming frequency correlated significantly with the TAS in her total sample, and Spanos, Stam, Radtke, and Nightingale (1980) found that absorption, as measured by the TAS, was the most important predictor of dream recall frequency in their female subjects. Hartmann (1984) noted that a capacity for absorption characterized his extreme nightmare sufferers.

Response Expectancies and Hypnotic Susceptibility

The relationship between the TAS and hypnotic susceptibility has recently been called into question by Council and his associates who have investigated the role of response expectancies in hypnosis. Kirsch (1985) defines a response expectancy as an expectancy of the occurrence of a nonvolitional response, i.e. a response which is experienced as occurring automatically. Examples of nonvolitional responses include sexual arousal, conversion symptoms, emotional reactions, and hypnotic behaviors. Preconceptions about one's hypnotic susceptibility have been shown to affect response expectancy in hypnosis (e.g., Barber & Calvery,
1969; Derman & London, 1965; Melei & Hilgard, 1964). Gregory and Diamond (1973) reported increased hypnotic susceptibility in subjects who had received "feedback" from bogus personality tests designed to induce expectancies of positive responses to hypnotic suggestions. Saavedra and Miller (1983) found that they were able to reduce initial hypnotic susceptibility scores in their subjects by providing a low hypnotizability expectation.

Even answering a questionnaire in the context of a hypnosis experiment may provide unintended "feedback" to subjects. For example, Council et al. (1983) found that the TAS was significantly correlated with responses expectancies, but was not significantly correlated with hypnotic susceptibility when variance due to expectancy was removed. These authors argued that, in the context of a hypnosis experiment, completing the absorption scale itself might represent an expectancy manipulation, since a subject who responds "true" to many of the face obvious items on the TAS might expect to be a good hypnotic subject. Council et al. (1986) subsequently showed that the TAS was significantly correlated with hypnotic susceptibility only when the scale was administered in the context of a hypnosis experiment, and concluded that when absorption is measured within a context that is clearly associated with hypnosis, subjects interpret their responses to the scale as an indication of their
hypnotizability and accordingly alter their expectations of how they will respond to hypnotic suggestions. This study suggests the possibility that the reported relationships between hypnotic susceptibility and other specific personality and experiential variables, such as vividness of imagery, may be nothing more than context-mediated artifacts.

**Nightmare Frequency and Hypnotic Susceptibility**

As in the case of hypnotic susceptibility, much research on the etiology of nightmares has focused on personality characteristics, and uncovering the correlates of frequent nightmares has been a traditional approach (e.g., Belicki & Belicki, 1986; Hartmann, 1984; Hartmann, Russ, van der Kolk, Falke, & Oldfield, 1981; Hersen, 1971; Kales et al., 1980). Hartmann (1984) studied adults who experienced nightmares at least once per week and had a lifelong history of nightmares. He found that these individuals described unusually vivid memories of early life experiences, reported vivid sensory experiences (e.g., sensitivity to light or sound), enjoyed a vivid, almost hallucinatory fantasy life, became readily absorbed in reading or music, and reported extrasensory experiences. Wilson and Barber (1982) found that these same traits were characteristic of excellent hypnotic subjects. Hartmann (1984) concluded that his extreme nightmare sufferers were vulnerable to schizophrenia; however, greater hypnotizability is generally associated with relative mental
health (Spiegel, Detrick, & Frischholz, 1982; Zlotogorski, Hahnemann, & Wiggs, 1987). On the basis of correlational studies, Belicki and Belicki (1986), who studied a less extreme group of nightmare subjects, have recently hypothesized that a specific cognitive style, namely, the tendency to engage in fantasy and imagery in waking life, not only underlies hypnotic responding but also predisposes an individual to nightmares.

Belicki and Belicki (1986) investigated the relationship between nightmare frequency and hypnotic susceptibility in a university population. A total of 841 undergraduate students attended a brief lecture on hypnosis followed by a question-and-answer session. Afterwards, the HGSHS:A was administered. Subjects then completed a questionnaire in which they estimated their typical weekly dream recall and the frequency of their nightmares in the previous twelve months. In addition, 406 of the subjects completed the VVIQ and the Rotenberg and Bowers' Absorption Scale. After the initial test of hypnotic susceptibility, 444 subjects underwent a second test using a version of the SHSS:C which had been modified to permit administration in small groups.

Belicki and Belicki (1986) reported that nightmare frequency was positively related to hypnotic susceptibility (as measured by the SHSS:C and the HGSHS:A), vividness of visual imagery, and absorption. With frequency of dream
recall covaried out, nightmare frequency remained significantly related to vividness of visual imagery, absorption, and hypnotic susceptibility as measured by the SHSS:C, but was not significantly related to hypnotic susceptibility as measured by the initial test, the HGSHS:A. Belicki and Belicki hypothesized that, since initial tests of hypnotic susceptibility are sometimes influenced by extraneous factors such as misinformation and anxiety (Bowers, 1976), the SHSS:C may have been a more representative measure of their subjects' hypnotic susceptibility.

In the light of the findings of Council et al. (1983), however, the results reported by Belicki and Belicki (1986) must be viewed with suspicion. All three of their questionnaires (dream recall/nightmares, vividness of visual imagery, and absorption) were administered in the context of a hypnosis experiment and prior to assessment of hypnotic susceptibility by the SHSS:C. It may be that, as Belicki and Belicki suggest, the questionable validity of initial susceptibility scores can explain the fact that, when the effect of frequency of dream recall was covaried out, hypnotic susceptibility as measured by the HGSHE:A was no longer significantly correlated with nightmare frequency. An alternative explanation, which is in line with the reasoning of Council et al. (1983), is that nightmare frequency was
positively related to scores on the SHSS:C because answering the nightmare questionnaire created in the subjects an expectancy of subsequent hypnotic responding. In the context of a hypnosis experiment, persons who reported many nightmares in the previous twelve months may have construed their unusual sleep experiences as somehow indicative of high hypnotic susceptibility, and may have responded to the hypnotic suggestions according to their positive expectations. The fact that nightmare frequency was not correlated with hypnotic susceptibility when the hypnotic procedure was administered prior to the nightmare questionnaire recalls Perry's (1973) unexpected finding that the SHSS:C did not significantly correlate with the QMI; in Perry's study hypnotic susceptibility was assessed prior to completion of the imagery questionnaire. Since nightmare frequency in the Belicki and Belicki (1986) study correlated with vividness of imagery and absorption, it is also possible that the VVIQ or the Rotenberg and Bowers' questionnaire, rather than the nightmare questionnaire, predisposed subjects to respond better to subsequent hypnotic suggestions.

Purpose

Council et al. (1986) have cautioned that completing questionnaires in a context clearly identified as a hypnosis experiment may inadvertently create an expectancy manipulation for subsequent hypnotic responding. They
(Council et al., 1986) demonstrated that absorption, which had previously been considered a valid correlate of hypnotic susceptibility, did not correlate with hypnotic susceptibility when the TAS was administered in a nonhypnotic context and hypnotic susceptibility was assessed separately.

The present correlational study examined methodological problems associated with context in order to enhance our understanding of the relationship between nightmares, hypnotic susceptibility, and personality or cognitive style.

The present study was intended to test the hypothesis that the reported positive relationship between nightmare frequency and hypnotic susceptibility is an artifact of administering a sleep inventory in the context of a hypnosis experiment. This study also examined the possible reactive effects of context of administration on the relationship between scores obtained on the VVIQ and hypnotic susceptibility. This study also extended the work of Council et al. (1986) by investigating the effect of context of administration on the relationship between hypnotic susceptibility and a measure of imaginative involvement, the Rotenberg and Bowers' Absorption Questionnaire. The possibility that the correlations among nightmare frequency, the VVIQ, and the Rotenberg and Bowers' Absorption Questionnaire are context-mediated artifacts was also examined.
Since there is reason to believe that the intensity of the distress experienced by persons with nightmares, rather than nightmare frequency per se, is more closely related to the personality/cognitive variables in this study (Mack, 1970; K. Belicki, personal communication, April, 1985), analyses on rated intensity of reaction to nightmares were conducted. Since previous research has sometimes discovered sex differences in the relationship between hypnotic susceptibility and other personality and experiential variables (Bowers & Bowers, 1979) as well as sex differences in persons with nightmares (Belicki and Belicki, 1986; Hartmann, 1984; Kales, 1980), the present study also examined potential sex differences.

The design of this study used one between groups factor (context) with three levels: a) context of a hypnosis experiment with the purported relationship between hypnotic susceptibility and the questionnaire measures made explicit (HC-1); b) context of a hypnosis experiment with the purported relationship between hypnotic susceptibility and the questionnaire measures not made explicit (HC-2); and c) context unrelated to hypnosis (NHC).

For the hypnosis contexts, subjects were specifically recruited for a study of "hypnotic susceptibility." Immediately prior to the induction of hypnosis, each subject completed questionnaires on sleep disorders, vividness of
visual imagery, and absorption. In condition HC-1, the research assistant who administered the questionnaires emphasized that the behaviors assessed by the questionnaires are believed to be related to hypnotic susceptibility, giving the following explanation, adapted from Hilgard (1970):

I want to explain why we are starting with these questionnaires. This research project is concerned with how people respond to hypnosis. We have become aware through earlier studies that there are areas of hypnosis that are related to the kinds of experiences a person has in ordinary life, outside of hypnosis. These questionnaires will deal with some of those experiences.

In condition HC-2, the rationale presented above was omitted. For the context unrelated to hypnosis, groups of subjects completed the three questionnaires at three different times and without knowledge that the questionnaires were part of a single study. Subsequently, these subjects were asked to volunteer for a research project on hypnotic susceptibility; only individuals who had previously completed the three questionnaires were included in the final subject pool. Subjects were not informed that administration of the questionnaires was part of the hypnotic susceptibility study until the debriefing session.

Correlation matrices for females, males, and the total sample were generated for context (HC-1, HC-2, and NHC),
hypnotic susceptibility, vividness of visual imagery, and absorption. The primary regression matrix predicted hypnotic susceptibility from context, nightmare frequency, and the interaction between context and nightmare frequency. It was hypothesized that regression analysis would show a significant interaction between nightmare frequency and the context in which the sleep inventory was administered. Nightmare frequency was predicted to be significantly correlated with hypnotic susceptibility only when the sleep inventory was administered in a context clearly associated with a subsequent hypnosis experiment and only when the purported relationship between nightmares and hypnotic susceptibility was made explicit.

A second regression matrix predicted hypnotic susceptibility from context, vividness of visual imagery, and the interaction between context and vividness of visual imagery. It was hypothesized that regression analysis would show a significant interaction between vividness of visual imagery and the context in which the VVIQ is administered. Vividness of visual imagery was predicted to be significantly correlated with hypnotic susceptibility only when the imagery questionnaire was administered in a context clearly associated with a subsequent hypnosis experiment and only when the purported relationship between vividness of visual imagery and hypnotic susceptibility was made explicit.
A third regression matrix predicted hypnotic susceptibility from context, absorption, and the interaction between context and absorption. It was hypothesized that regression analysis would show a significant interaction between absorption and the context in which the Rotenberg and Bowers' Absorption Questionnaire was administered. Absorption was predicted to be significantly correlated with hypnotic susceptibility only when the absorption questionnaire was clearly associated with a subsequent hypnosis experiment and when the purported relationship between absorption and hypnotic susceptibility was made explicit.

It was also hypothesized that intercorrelations among the three measures (nightmare frequency, vividness of imagery, and absorption) assessed simultaneously in a context related to hypnosis, either explicitly or inexplicitly, would be significantly greater than intercorrelations among the same measures assessed independently in a context unrelated to hypnosis. It was hypothesized that the intercorrelations among the three measures would be highest in condition HC-1.

The above multiple regression analyses were also carried out separately for females and males, without stated hypotheses, in order to assess any possible sex differences.

In order to examine whether or not intensity of reaction to nightmares is related to hypnotic susceptibility,
vividness of imagery, or absorption, subjects were divided into three groups on the basis of reported intensity of reaction to nightmares, as follows: a) No Distress (ratings of 1 on Question 2 of the Sleep Inventory), b) Moderately Distressed (ratings of 2 and 3), and c) Intensely Distressed (ratings of 4 and 5). Three 2 x 3 factorial analyses of covariance were conducted using sex and nightmare intensity as the independent factors, scores on the SSHS:C, the VVIQ, and the Rotenberg and Bowers' Absorption Questionnaire as the dependent measures, and frequency of nightmares as the covariate.
CHAPTER II

METHOD

Subjects

A total of 60 subjects, 30 females and 30 males, were recruited from among students enrolled in undergraduate psychology courses at North Texas State University to participate in research. Volunteers received extra credit points in return for their participation.

Hypnotists

A female and a male graduate student in clinical psychology served as hypnotists. Both hypnotists had received didactic training and supervised practice in the administration of standard hypnotic scales. Hypnotists were blind with respect to group assignment of subjects. No significant difference between hypnotists was expected.

Materials

Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C). This 12-item individually administered scale was used to assess the level of hypnotic susceptibility of the subjects in this study. The scale was developed by Weitzenhoffer and Hilgard (1962) and represents an alternative to their Stanford Hypnotic Susceptibility Scale, Forms A and B.
(Weitzenhoffer & Hilgard, 1959). The SHSS:C consists of a brief, standardized hypnotic induction, followed by a series of suggestions which vary in difficulty. The scale was normed on male and female undergraduate university students. Weitzenhoffer and E. R. Hilgard (1962) report an estimated reliability coefficient for the SHSS:C of $r = .85$, calculated by the Kuder-Richardson method (formula 20), and a cross-scale correlation between total scores of the SHSS:C and the Stanford Hypnotic Susceptibility Scale, Form A (SHSS:A) of $r = .85$, corrected for attenuation. With a distribution of scores sufficiently normal for use in correlational studies, the SHSS:C is considered a satisfactory criterion for use in examining the relationship between hypnotic susceptibility and pencil-and-paper tests believed to be predictive of hypnotic susceptibility (Weitzenhoffer & Hilgard, 1962). The scale must be administered and scored by the hypnotist. Each item is scored on a pass-fail basis, with scores ranging from 0 to 12. Scores in the range 0-4 arbitrarily define a low level of hypnotic susceptibility, while scores in the range 8-12 define a high level of hypnotic susceptibility (Weitzenhoffer & Hilgard, 1962). The SHSS:C is presented in Appendix B.

Vividness of Visual Imagery Questionnaire (VVIO). This questionnaire, developed by Marks (1973), consists of 16
items pertaining to different aspects of four visual scenes which subjects are asked to rate along a five-point scale of vividness of imagery, once with eyes open, and once with eyes closed. Unlike the original questionnaire, on which lower scores were associated with greater vividness, scores for each item on this version range from 1 for no image at all to 5 for an image which is perfectly clear and as vivid as normal vision. Total scores from the two conditions (eyes open and eyes closed) are averaged, giving final scores which range from 16 to 80. Marks (1973) reports a test-retest reliability coefficient of .74 and a split-half reliability coefficient of .85. The VVIQ is presented in Appendix C.

Rotenberg and Bowers' Absorption Questionnaire. This brief, self-administered questionnaire, constructed by Rotenberg and Bowers (1978), consists of four questions concerning the frequency of the subject's total involvement in daydreams, books, film, and music. Each item is scored for frequency of occurrence as follows: 0 for almost never, 1 for occasionally, and 2 for often. Total scores range from 0 to 8. The Rotenberg and Bowers' Absorption Questionnaire is presented in Appendix D.

Sleep Inventory. This two-part questionnaire was developed by the author of the present study. In the first part, labeled Sleep Inventory, subjects were asked to estimate the frequency of their nightmares in the past year,
to rate on a scale from 1 to 5 the intensity of their reaction to nightmares, to indicate whether or not they have ever experienced night terrors, to estimate the frequency of their night terrors in the past year, to estimate the frequency of other sleep disturbances which they have experienced in the past year, and to indicate the presence of sleep disturbances in family members. Since a problem in many previous studies on sleep disorders has been the failure to distinguish between nightmares and night terrors, definitions of these terms were provided. A nightmare was defined as "a long frightening dream from which the sleeper awakens terrified, usually in the second half of the night or sleep period." A night terror was defined as "a sudden arousal, usually within an hour or two of falling asleep. Persons who experience night terrors appear to be intensely frightened. They often sit up in bed or jump out of bed, screaming. They usually do not fully awaken, and they do not remember anything about the episode the next day. Parents, roommates, or spouses usually inform a person that a night terror has occurred." The Sleep Inventory is presented in Appendix E. In the second part of the sleep inventory, labeled IPF (Inventory of Personality Factors), subjects were asked to check any of 20 descriptors which applied to them in the present, or might have applied to them in childhood or adolescence. The 20 descriptors are based on characteristics
which have been associated with persons who experience nightmares, night terrors, or insomnia (Hartmann, 1984). The second part of the sleep inventory was intended for heuristic purposes only and was administered after the hypnosis procedure. The IPF is presented in Appendix F.

**Equipment**

The VVIQ instructions were recorded on a Maxell Epitaxial XL-II 90 cassette tape. A Sony Stereo Cassette-Corder CFS-65 S was used to administer the audiotaped instructions for the VVIQ.

**Procedure**

Volunteers for this study were recruited through announcements made by research assistants in undergraduate psychology classes and through sign-up sheets posted in the Department of Psychology.

There were two hypnotic context conditions: a condition in which the purported relationship between hypnotic susceptibility and the three questionnaire measures was made explicit (HC-1), and a condition in which no relationship between hypnotic susceptibility and the three measures was suggested. For the hypnotic context conditions, HC-1 and HC-2, subjects were solicited to participate in "research on hypnotic susceptibility." Each subject was contacted by telephone and scheduled for an individual appointment. The subject was met by a research
assistant who conducted the subject to a private room and obtained a human subject informed consent form (see Appendix G) for the hypnosis procedure.

In condition HC-1, the research assistant then explained the research project, as follows:

The purpose of this research project is to investigate hypnotic susceptibility. In a short while, you will have an opportunity to experience hypnosis. But first, we would like you to fill out three questionnaires. I want to explain why we are starting with these questionnaires. This research project is concerned with how people respond to hypnosis. We have become aware through earlier studies that there are areas of hypnosis that are related to the kinds of experiences a person has in ordinary life, outside of hypnosis. These questionnaires will deal with some of those experiences. We want to assure you that your answers will be used in such a way that your identity will be confidential. Don't put your name on the questionnaires, but please fill in your social security number for coding purposes. Take your time and answer the questions as completely and accurately as possible. We appreciate your willingness to participate in this research. I'll wait outside the door while you fill out the first two questionnaires (Rotenberg and Bowers' Absorption
Questionnaire and Sleep Inventory). If you have any questions, or if you are unsure about how to respond to any item, let me know. I'll check back with you in a few minutes.

The research assistant then exited the room and returned in approximately 5 minutes to inquire how the subject was progressing and to administer the VVIQ. When the subject had completed the VVIQ, the research assistant collected the three questionnaires, thanked the subject, and gave the following instructions:

__________________________ will be your hypnotist today. It is important that the hypnotist not know that you have answered the three questionnaires, so please don't indicate in any way that you have just completed this task. After the hypnotic procedure, I will return to answer any questions you may have.

The research assistant then notified the hypnotist that the subject was available. The hypnotist established rapport by first offering a brief explanation of hypnosis (see Appendix H), and then began the standard induction and administered the SHSS:C. After the hypnotic procedure, the research assistant returned and asked the subject to complete the second part of the sleep inventory which was described as a checklist of personality characteristics. After the subject had completed the second part of the questionnaire in
private, the research assistant returned and recorded the subject's answer to the following question: Have you had any prior experiences that led you to believe you would or would not be a good hypnotic subject? The research assistant then thanked the subject for participating and answered any questions. The subject was informed that a debriefing session would be scheduled at the conclusion of the research project. The subject was asked to keep all information about the procedures confidential until after the debriefing session. Twenty subjects, 10 females and 10 males, comprised condition HC-1.

In condition HC-2, the procedure was identical to that of HC-1, except that the following rationale was offered by the research assistant after obtaining the consent form:

The purpose of this research project is to investigate hypnotic susceptibility. In a short while, you will have an opportunity to experience hypnosis. But first, we would like you to fill out three questionnaires. We want to assure you that your answers will be used in such a way that your identity will be confidential. Don't put your name on the questionnaires, but please fill in your social security number for coding purposes. Take your time and answer the questions as completely and accurately as possible. We appreciate your willingness to participate in this research. I'll wait
outside the door while you fill out the first two questionnaires (Rotenberg and Bowers' Absorption Questionnaire and Sleep Inventory). If you have any questions, or if you are unsure about how to respond to any item, let me know. I'll check back with you in a few minutes.

The research assistant returned in approximately 5 minutes to administer the VVIQ. The research assistant responded to any questions or conjectures by the subject regarding the relationship between hypnosis and the questionnaire measures with the following statement:

I cannot discuss these matters at this time. If you have questions at the end of the experiment, I will try to answer them for you.

Twenty subjects, 10 females and 10 males, comprised condition HC-2.

For condition NHC, the context unrelated to hypnosis, participants were solicited at different times by different research assistants who went in person to classrooms and asked volunteers to complete questionnaires for "sleep research," "personality research," and "research on organismic involvement," respectively. The first part of the sleep inventory constituted the questionnaire for sleep research. The questionnaire for personality research was the VVIQ. The questionnaire for research on organismic
involvement was the Rotenberg and Bowers’ Absorption Questionnaire. Persons who completed the questionnaires furnished their social security numbers for identification purposes. Subsequently, a different research assistant visited the same classrooms and asked students to volunteer for "research on hypnotic susceptibility." Persons indicated interest by signing a sheet and providing their social security numbers. Social security numbers were used to identify persons who had previously completed all three questionnaires. Twenty subjects; 10 females and 10 males, were contacted by telephone and scheduled for an individual appointment. Each subject was met at a specified location on the second floor of the building in which the Department of Psychology is located by a research assistant who conducted the subject to a private room. A human subject informed consent form (see Appendix G) for the hypnosis procedure was obtained. The research assistant then explained the research project, as follows:

The purpose of this research project is to investigate hypnotic susceptibility. We are interested in learning more about how people respond to hypnosis. In just a few minutes, you will have an opportunity to experience hypnosis. But first, we want you to know that we appreciate your willingness to participate in this research, and that the information we obtain from you
will be used in such a way that your identity as a subject in this project will remain confidential. 

________________ will be your hypnotist today.

After the hypnotic procedure, I will return to answer any questions you may have.

From this point forward the procedure was identical to that used with subjects in the hypnotic context conditions.
CHAPTER III

RESULTS

A two-tailed $t$ test was conducted to compare hypnotic susceptibility scores obtained by the two hypnotists. No significant difference between hypnotists was found, $t(58) = 1.58, p < .12$.

Means and standard deviations for the dependent variables in each experimental condition are presented in Table A-1 (Appendix A).

Two-tailed $t$ tests for possible differences between females and males on the various measures were performed. The sexes differed only on rated intensity of reaction to nightmares, with females rating their reactions to nightmares significantly higher than did males, $t(58) = 3.23, p < .01$. On a 1-5 scale, the mean reported intensity of reaction to nightmares for females was $M = 2.47$, $SD = .86$; for males, $M = 1.77$, $SD = .82$.

Correlation matrices by context condition were obtained to ascertain whether the three questionnaire measures (nightmare frequency, vividness of imagery, and absorption) intercorrelated differently depending on context of administration. For the combined sexes, none of the
correlations among questionnaire measures in any of the three contexts were significant. As such, the hypothesis that the intercorrelation among the three measures assessed simultaneously in a context related to hypnosis, either explicitly or implicitly, would be significantly greater than the intercorrelation among the same measures assessed independently in a context unrelated to hypnosis was not supported. The hypothesis that the intercorrelation among the three measures would be highest in condition HC-1 was not supported.

Significant correlations were found only when the three contexts were examined separately by sex. For females in condition HC-2, intensity of reactions to nightmares correlated significantly with nightmare frequency, \( r = .74 \), \( p < .01 \). For females in condition NHC, absorption correlated significantly with hypnotic susceptibility, \( r = .60 \), \( p < .05 \). For males in condition HC-2, nightmare frequency correlated significantly with hypnotic susceptibility, \( r = .65 \), \( p < .05 \). For males in condition NHC, nightmare frequency correlated significantly with vividness of imagery \( r = -.62 \), \( p < .05 \), and intensity of reaction to nightmares correlated significantly with both hypnotic susceptibility, \( r = .58 \), \( p < .05 \) and nightmare frequency, \( r = .75 \), \( p < .01 \). Results are displayed in Tables A-2, A-3, A-4 and A-5 (Appendix A).
Multiple regression analysis was carried out to ascertain whether the reported relationships between hypnotic susceptibility and nightmares, vividness of imagery, and absorption are artifacts of context of administration.

Three multiple regression analyses on hypnotic susceptibility were carried out for the combined sexes with context entered as the first predictor variable and one of the following measures entered as subsequent predictor variables: nightmare frequency, VVIQ scores, and scores on the Rotenberg and Bowers' Absorption Questionnaire. No significant relationship was found for context and nightmare frequency ($F = 2.28, df = 2/57, p < .11$), for context and vividness ($F = 1.94, df = 2/57, p < .15$), nor for context and absorption ($F = 1.62, df = 2/57, p < .21$) as predictors of hypnotic susceptibility. Thus, for the entire sample, the hypothesis that context of administration of the questionnaires influenced the relationship between the measures (nightmare frequency, vividness, or absorption) and hypnotic susceptibility was not supported.

Three multiple regression analyses were also carried out separately for females and males, as above. For females, no significant relationship was found for context and nightmare frequency ($F = .01, df = 2/27, p < .99$), for context and vividness ($F = .13, df = 2/27, p < .88$), nor for context and absorption ($F = .91, df = 2/27, p < .42$) as predictors of
hypnotic susceptibility. For females, context of administration of the questionnaires did not influence the relationship between the individual measures and hypnotic susceptibility.

For males, however, significant results were obtained for context and nightmare frequency ($F = 3.33$, $df = 2/27$, $p < .05$), for context and vividness ($F = 3.67$, $df = 2/27$, $p < .04$) and for context and absorption ($F = 3.52$, $df = 2/27$, $p < .04$) as predictors of hypnotic susceptibility. Analysis showed that, for males, context of administration did affect how well the measures contributed to the prediction of hypnotic susceptibility; specifically, for males these measures contributed significantly to the prediction of hypnotic susceptibility only when they were administered in a context related to hypnosis in which the purported relationship between the measures and hypnotic susceptibility was made explicit (HC-1). Results are presented in Table A-6 (Appendix A).

A one-way analysis of variance was carried out to compare hypnotic susceptibility scores for males in the three conditions. The mean hypnotic susceptibility score for males in HC-1 was 5.5; the mean hypnotic susceptibility scores for males in HC-2 and NHC were 7.7 and 8, respectively. A posteriori tests on the data revealed that males in HC-1 differed significantly from males in HC-2 and NHC on hypnotic
susceptibility by the Fisher PLSD at the .05 level of significance. Results appear in Table A-7 (Appendix A).

Further examination of the data showed that, for males, age and hypnotic susceptibility were significantly negatively correlated, $r = -0.37, p < .05$. The two oldest males in the sample (ages 41 and 51), who were subjects in context HC-1, obtained two of the three lowest scores on hypnotic susceptibility. When these two male subjects were excluded from the analysis, the significant effect of context and questionnaire measures on hypnotic susceptibility for males in HC-1 disappeared. These results are presented in Table A-8 (Appendix A). Thus, the apparent influence of context on the ability of the measures to predict hypnotic susceptibility in males is considered to be confounded by the correlation between age and hypnotic susceptibility.

Three 2 x 3 factorial analyses of covariance were conducted using sex and intensity of reaction to nightmares as the independent factors, scores of the SSHS:C, the VVIQ, and the Rotenberg and Bowers' Absorption Questionnaire as the dependent measures, and frequency of nightmares as the covariate. Analysis of covariance indicated that there were no main or interaction effects on any dependent measure.
CHAPTER IV

DISCUSSION

Contrary to prediction, the relationships between hypnotic susceptibility and nightmares, vividness of imagery, and absorption were not mediated by context of questionnaire administration. Multiple regression analysis did not find a relationship between context and the ability of the measures to predict hypnotic susceptibility. Nor did the questionnaire measures correlate differently with hypnotic susceptibility in the three contexts.

These results are inconsistent with the conclusions reached by Council et al. (1986) regarding the relationship between absorption and hypnotic susceptibility. Council et al. (1986) suggested that subjects given a questionnaire in the context of a hypnosis experiment may "interpret their responses . . . as an indication of their hypnotizability and accordingly alter their expectations of how they will respond to hypnosis" (p. 24).

Drake's (1987) examination of the possible mediating effect of context on the relationship between hypnotic susceptibility and imaginative involvement similarly found no significant interaction between context and susceptibility.
Drake (1987) attributed his results to methodological differences between his work and that of Council et al. (1986), pointing out that in the Council et al. (1986) study hypnotic susceptibility was assessed immediately following the administration of the absorption questionnaire, whereas time periods ranging from 24 to 36 hours intervened between the administration of the imaginative involvement measures and the assessment of hypnotic susceptibility in his (Drake, 1987) hypnotic context group. Drake suggested the possibility that context-created expectancies for hypnotic responding are temporally mediated and subject to rapid decay.

In a related study, Cawood (1988) showed that absorption, when measured in a temporally contiguous versus a non-temporally contiguous context, did not affect hypnotic susceptibility. For the temporally contiguous group, however, the correlation between absorption and hypnotic susceptibility was significant; for the non-temporally contiguous group, the correlation between absorption and hypnotic susceptibility was non-significant. Cawood (1988) interpreted his data to indicate that temporally contiguous administration of the absorption questionnaire created expectancy effects in subjects, as Council et al. (1986) suggested.
In the present study, in which the experimenter investigated nightmare frequency and vividness as well as absorption, no evidence that the three measures altered expectancies was found, even in a context (HC-1) in which subjects were explicitly encouraged to make a connection between their questionnaire responses and their subsequent hypnotic responding. In the temporally contiguous contexts, HC-1 and HC-2, the three measures were administered immediately prior to hypnosis, yet none of the measures correlated significantly with hypnotic susceptibility. Furthermore, at the conclusion of the hypnotic sessions, all subjects were asked whether they had ever had any prior experiences that led them to believe that they would or would not be good hypnotic subjects. None of the subjects indicated that they had altered their expectancies of hypnotic responding on the basis of their questionnaire responses.

In the present study, as in Council et al. (1983), Council et al. (1986), Drake (1987), and Cawood (1988), absorption failed to correlate with hypnotic susceptibility in a non-hypnotic context. In the present study, it does not seem reasonable to attribute this finding to time elapsed between administration of a questionnaire and the assessment of hypnotic susceptibility, as absorption failed to correlate with hypnotic susceptibility even when the questionnaire was
administered immediately prior to hypnosis (HC-1 and HC-2). Nor does the failure of absorption to correlate with hypnotic susceptibility appear due to irregularities in susceptibility assessment. For example, the mean SHSS:C score ($\mu = 7.483, \sigma = 2.251$) is comparable to normative data for the SHSS:C for subjects in the age range of those in this study ($\mu = 22.791$ years, $\sigma = 4.4.871$), as reported by Morgan and Hilgard (1973).

The failure of absorption to correlate with hypnotic susceptibility in hypnotic contexts is a replication of Drake's (1987) findings. While at odds with numerous previous studies (e.g., Hilgard, 1974; Hilgard, 1979; Tellegen & Atkinson, 1974), these results are consistent with the findings of Chiafalo and Coe (1982) and Spanos et al. (1976), who found no correlation between absorption measured in a hypnotic context and hypnotic susceptibility. In view of these conflicting results, a conservative view of the presumed relationship between absorption and hypnotic susceptibility is warranted. The same caution is indicated regarding other measures which have been reported to correlate with hypnotic susceptibility, including nightmare frequency and vividness (Belicki & Belicki, 1986).

The low number of subjects is a weakness of the present study, raising doubt as to the conclusiveness of the non-significant findings for the reactive effects of context. In
addition, the low number of subjects makes it difficult to interpret the significant correlations found between measures for a single sex in the various contexts. Replication utilizing a larger sample is recommended.

Sample size has other important implications. Inconsistencies in the literature regarding the correlation of hypnotic susceptibility to various measures, absorption in particular, may be a function of low power. Further research efforts may involve a power analysis in order to compute the magnitude of effect that could be detected in each study, given the chosen alpha level. If the magnitude of the detectable effects were low, one could conclude that the experiments were powerful and that the absence of relationships between hypnotic susceptibility and various measures could be provisionally accepted. If the magnitude of the detectable effects were high, however, the question would arise whether the absence of correlations were due to the true absence of relationships or to the experiments being so weak that reasonably sized true effects could not be detected (Cook & Campbell, 1979).
APPENDIX A

TABLES
Table A-1

Means and Standard Deviations for Dependent Variables in Each Experimental Condition

<table>
<thead>
<tr>
<th>Variable</th>
<th>HC-1 (n=20)</th>
<th>HC-2 (n=20)</th>
<th>NHC (n=20)</th>
<th>Combined (n=60)</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHSS:C</td>
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<tr>
<td>M</td>
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<td>7.8</td>
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<td>Nightmare Frequency</td>
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<td>VVIQ</td>
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</tr>
<tr>
<td>M</td>
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</tr>
<tr>
<td>SD</td>
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<td>8.32</td>
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<td>Rotenberg and Bowers' Absorption Questionnaire</td>
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</tr>
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<td>SD</td>
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<td></td>
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<tr>
<td>M</td>
<td>2.25</td>
<td>1.95</td>
<td>2.15</td>
<td>2.12</td>
</tr>
<tr>
<td>SD</td>
<td>1.02</td>
<td>.69</td>
<td>.99</td>
<td>.90</td>
</tr>
</tbody>
</table>
Table A-2

Correlations Between Dependent Variables: Females.

HC-2 (n =10)

<table>
<thead>
<tr>
<th></th>
<th>SHSS:C</th>
<th>NF</th>
<th>VVIQ</th>
<th>RBAQ</th>
<th>IRR</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHSS:C</td>
<td>--</td>
<td>.386</td>
<td>-.171</td>
<td>.303</td>
<td>.029</td>
</tr>
<tr>
<td>NF</td>
<td>--</td>
<td>.29</td>
<td></td>
<td>.571</td>
<td>.741*</td>
</tr>
<tr>
<td>VVIQ</td>
<td>--</td>
<td></td>
<td>.234</td>
<td></td>
<td>.173</td>
</tr>
<tr>
<td>RBAQ</td>
<td></td>
<td></td>
<td></td>
<td>--</td>
<td>.502</td>
</tr>
</tbody>
</table>

Note. NF is nightmare frequency.

RBAQ is Rotenberg and Bowers' Absorption Questionnaire.

IRR is intensity of reaction to nightmares ratings.

*p < .01.
Table A-3

Correlations Between Dependent Variables: Females.

NHC (n = 10)

<table>
<thead>
<tr>
<th></th>
<th>SHSS:C</th>
<th>NF</th>
<th>VVIQ</th>
<th>RBAQ</th>
<th>IRR</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHSS:C</td>
<td></td>
<td>.188</td>
<td>.09</td>
<td>.604*</td>
<td>.432</td>
</tr>
<tr>
<td>NF</td>
<td>--</td>
<td></td>
<td>-.152</td>
<td>.496</td>
<td>.37</td>
</tr>
<tr>
<td>VVIQ</td>
<td>--</td>
<td></td>
<td></td>
<td>.121</td>
<td>.309</td>
</tr>
<tr>
<td>RBAQ</td>
<td>--</td>
<td></td>
<td></td>
<td></td>
<td>.166</td>
</tr>
</tbody>
</table>

*Note.* NF is nightmare frequency.

RBAQ is Rotenberg and Bowers' Absorption Questionnaire.

IRR is intensity of reaction to nightmares ratings.

*p < .05.*
Table A-4

**Correlations Between Dependent Variables: Males, HC-2 (n =10)**

<table>
<thead>
<tr>
<th></th>
<th>SHSS:C</th>
<th>NF</th>
<th>VVIQ</th>
<th>RBAQ</th>
<th>IRR</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHSS:C</td>
<td>--</td>
<td>.647*</td>
<td>.381</td>
<td>-.033</td>
<td>.066</td>
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<tr>
<td>NF</td>
<td>------</td>
<td>--</td>
<td>.09</td>
<td>-.233</td>
<td>-.145</td>
</tr>
<tr>
<td>VVIQ</td>
<td>------</td>
<td>--</td>
<td>--</td>
<td>.343</td>
<td>-.177</td>
</tr>
<tr>
<td>RBAQ</td>
<td>------</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>-.362</td>
</tr>
</tbody>
</table>

*Note.* NF is nightmare frequency.

RBAQ is Rotenberg and Bowers' Absorption Questionnaire.

IRR is intensity of reaction to nightmares ratings.

*p < .05.*
Table A-5

**Correlations Between Dependent Variables: Males, NHC (n = 10)**

<table>
<thead>
<tr>
<th></th>
<th>SHSS:C</th>
<th>NF</th>
<th>VVIQ</th>
<th>RBAQ</th>
<th>IRR</th>
</tr>
</thead>
<tbody>
<tr>
<td>SHSS:C</td>
<td>--</td>
<td>.323</td>
<td>.152</td>
<td>-.524</td>
<td>.583*</td>
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<tr>
<td>NF</td>
<td>--</td>
<td>-.617*</td>
<td>-.084</td>
<td>.75**</td>
<td></td>
</tr>
<tr>
<td>VVIQ</td>
<td>--</td>
<td>--</td>
<td>-.215</td>
<td>-.203</td>
<td></td>
</tr>
<tr>
<td>RBAQ</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>-.016</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* NF is nightmare frequency.

RBAQ is Rotenberg and Bowers' Absorption Questionnaire.

IRR is intensity of reaction to nightmares ratings.

*P < .05.  **P < .01.
Table A-6

Multiple Regression on SHSS:C Scores for Males

<table>
<thead>
<tr>
<th>Condition</th>
<th>HC-1 (n=10)</th>
<th>HC-2 (n=10)</th>
<th>NHC (n=10)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Predictor Variables: Context and NF</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r</td>
<td>.489</td>
<td>.351</td>
<td>.337</td>
</tr>
<tr>
<td>R²</td>
<td>.239</td>
<td>.123</td>
<td>.114</td>
</tr>
<tr>
<td>F</td>
<td>4.246*</td>
<td>1.892</td>
<td>1.732</td>
</tr>
<tr>
<td><strong>Predictor Variables: Context and VS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r</td>
<td>.482</td>
<td>.211</td>
<td>.325</td>
</tr>
<tr>
<td>R²</td>
<td>.233</td>
<td>.044</td>
<td>.106</td>
</tr>
<tr>
<td>F</td>
<td>4.09*</td>
<td>.628</td>
<td>1.596</td>
</tr>
<tr>
<td><strong>Predictor Variables: Context and RBAQ</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>r</td>
<td>.537</td>
<td>.302</td>
<td>.291</td>
</tr>
<tr>
<td>R²</td>
<td>.288</td>
<td>.091</td>
<td>.085</td>
</tr>
<tr>
<td>F</td>
<td>5.464**</td>
<td>1.358</td>
<td>1.254</td>
</tr>
</tbody>
</table>

**Note.** NF is nightmare frequency.

RBAQ is Rotenberg and Bowers' Absorption Questionnaire.

* p < .05.   **p < .01.
Table A-7

One Factor ANOVA: Experimental Condition on SHSS:C Scores for Males

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>37.267</td>
<td>2</td>
<td>18.633</td>
<td>3.297*</td>
</tr>
<tr>
<td>Within groups</td>
<td>152.6</td>
<td>27</td>
<td>5.652</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>189.867</td>
<td>29</td>
<td></td>
<td></td>
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</table>

*p < .05.

A Posteriori Test on Conditions

<table>
<thead>
<tr>
<th>Comparison</th>
<th>HC-1 vs. HC-2</th>
<th>HC-1 vs. NHC</th>
<th>HC-2 vs. NHC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean difference</td>
<td>-2.2</td>
<td>-2.5</td>
<td>-.3</td>
</tr>
<tr>
<td>Fisher PLSD</td>
<td>2.182*</td>
<td>2.182*</td>
<td>2.182</td>
</tr>
</tbody>
</table>

*p < .05.
Table A-8

**Multiple Regression on SHSS:C Scores for Males < 40 Years Old: Condition HC_1 (n=10)**

<table>
<thead>
<tr>
<th>Predictor Variables: Context and NF</th>
<th>$r = .368$</th>
<th>$R^2 = .135$</th>
<th>$F = 1.958$</th>
<th>$p = .1622$</th>
<th>n.s.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Predictor Variables: Context and VVIQ</th>
<th>$r = .439$</th>
<th>$R^2 = .193$</th>
<th>$F = 2.99$</th>
<th>$p = .0685$</th>
<th>n.s.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Predictor Variables: Context and RBAQ</th>
<th>$r = .367$</th>
<th>$R^2 = .134$</th>
<th>$F = 1.942$</th>
<th>$p = .1644$</th>
<th>n.s.</th>
</tr>
</thead>
</table>

**Note.** NF is nightmare frequency.

RBAQ is Rotenberg and Bowers' Absorption Questionnaire.
APPENDIX B

STANFORD HYPNOTIC SUSCEPTIBILITY SCALE, FORM C
Stanford Hypnotic Susceptibility Scale, Form C (SHSS:C)

The Induction procedure is optional, so that, after establishing rapport, it is possible to move directly to Item 1 (Hand Lowering). The actual standardization was done, however, using the induction procedure of Form B; hence this procedure is repeated here, and will normally be the procedure used. Because eye closure is not scored, it is numbered as Item 0.

The recommendations for establishing rapport prior to induction assume that there has been an earlier experience of hypnosis (presumably of Form A), although adjustments can be made in case Form C is used as the initial form.

Materials Required

1. Stopwatch, interval timer, or clock with sweep second hand, in order to time 10-second intervals.
2. Pad of 8 1/2 x 11 in. paper; #1 soft lead pencil.
3. Small bottle with screw top, containing household ammonia.
4. Three small colored boxes (e.g. red, white, blue), about 2 x 3 in. and 1/2 in. deep; small table on which to place them before subject. The exact sizes and colors are not critical.

0. INDUCTION BY EYE CLOSURE (Not to be scored)

Note: This induction is optional. If another induction is used, it should end with the eyes closed. Then go to Instruction 1. HAND LOWERING.
A small bright object (button, metal thumb tack) is placed in such a way that a seated subject must turn his eyes upward to look at it. It may be placed on the ceiling, at least six feet from the eyes of the subject. A subject who wears glasses should keep them on. The subject is comfortably seated in an upright upholstered armchair, with the back high enough to support his head.

Do you see that small bright button (tack, etc.) above and in front of you? (If necessary, point to it). Good.

That is what I shall mean by the "target."

(1) Now please seat yourself comfortably . . . placing a hand on each arm of the chair. You may just look straight ahead. I am about to help you to relax, and meanwhile I shall give you some instructions that will help you gradually to enter a state of hypnosis. Now turn your eyes upward and look at the target. You may tilt your head a little if you need to so that you won't strain your eyes too much . . . (If wearing glasses: Can you see the target all right through your glasses?) Please look steadily at the target and while staring at it keep listening to my words. You can become hypnotized if you are willing to do what I tell you to, and if you concentrate on the target and on what I say. You have already shown your willingness by coming here . . . and so I am assuming that your presence here means that you want to experience all that you can. You can be hypnotized only if you want to be. There would be no point in participating if you were resisting being hypnotized. Just do your best to concentrate on the target, to pay close attention to my
words, and let happen whatever you feel is going to take place. Just let yourself go. Pay close attention to what I tell you to think about; if your mind wanders bring your thoughts back to the target and my words, and you can easily experience more of what it is like to be hypnotized.

Hypnosis is not something supernatural or frightening. It is perfectly normal and natural, and follows from the conditions of attention and suggestion we are using together. It is chiefly a matter of focusing sharply on some particular thing. Sometimes you experience something very much like hypnosis when driving along a straight highway and you are oblivious to landmarks along the road. The relaxation in hypnosis is very much like the first stages of falling asleep, but you will not really be asleep in the ordinary sense because you will continue to hear my voice and will be able to direct your thoughts to the topics I suggest.

Hypnosis is a little like sleepwalking, because the person is not quite awake, and can still do many of the things that people do when they are awake. What I want from you is merely your willingness to go along and to let happen whatever is about to happen. Nothing will be done to embarrass you...

If eyes close, go to Instruction 0'(2') and continue through 0'(7').

(2) Now take it easy and just let yourself relax. Keep
looking at the target as steadily as you can, thinking only of it and my words. If your eyes drift away, don't let that bother you... Just focus again on the target. Pay attention to how the target changes, how the shadows play around it, how it is sometimes fuzzy, sometimes clear. Whatever you see is all right. Just give way to whatever comes into your mind, but keep staring at the target a little longer. After a while, however, you will have stared long enough, and your eyes will feel very tired, and you will wish strongly that they were closed. Then they will close, as if by themselves. When this happens, just let it happen.

If eyes close, go to O'(2') and continue through O'(7').

(3) Relax more and more. As you think of relaxing, your muscles will relax. Starting with your right foot, relax the muscles of your right leg... Now the muscles of your left leg... just relax all over. Relax your right hand, your forearm, upper arm, and shoulder... That's it... Now your left hand... and forearm... and upper arm... and shoulder... Relax your neck, and chest... more and more relaxed... completely relaxed... completely relaxed.

If eyes close, go to O'(3') and continue through O'(7').

(4) As you become relaxed your body will feel sort of heavy or perhaps numb. You will begin to have this feeling of numbness or heaviness in your legs and feet... in your
hands and arms . . . throughout your body . . . as though you were settling deep into the chair. The chair is strong; it will hold your heavy body as it feels heavier and heavier. Your eyelids feel heavy, too, heavy and tired. You are beginning to feel drowsy and sleepy. You are breathing freely and deeply, freely and deeply. You are getting more and more sleepy and drowsy. Your eyelids are becoming heavier, more and more tired and heavy.

If eyes close, go to 0'(4') and continue through 0'(7').

(5) Staring at the target so long has made your eyes very tired. Your eyes hurt and your eyelids feel very heavy. Soon you will no longer be able to keep your eyes open. You will have stood the discomfort long enough; your eyes are tired from staring, and your eyelids will feel too tired to remain open. Your eyes are becoming moist from the strain. You are becoming more and more drowsy and sleepy. The strain in your eyes is getting greater and greater. It would be a relief just to let your eyes close and to relax completely, to relax completely. You will soon have strained enough; the strain will be so great that you will welcome your eyes closing of themselves, of themselves.

If eyes close, go to 0'(5') and continue through 0'(7').

(6) Your eyes are tired and your eyelids feel very heavy. Your whole body feels heavy and relaxed. You feel a
pleasant warm tingling throughout your body as you get more and more tired and sleepy. Sleepy. Drowsy. Drowsy and sleepy. Keep your thoughts on what I am saying; listen to my voice. Your eyes are getting blurred from straining. You can hardly see the target, your eyes are so strained. The strain is getting greater, greater and greater, greater and greater.

If eyes close, go to O'(6') and continue through O'(7').

Your eyelids are heavy. Very heavy. Getting heavier and heavier, heavier and heavier. They are pushing down, down, down. Your eyelids seem weighted and heavy, pulled down by the weight . . . so heavy . . . . Your eyes are blinking, blinking . . . closing, closing . . . .

If eyes have not yet closed:
Soon your eyes would close by themselves, but there is no need to strain them more. You have concentrated well upon the target, and have become very relaxed. Now we have come to the time when you may just let your eyes close. (If no response: That's it, now close them.)

(7) You now feel very relaxed, but you are going to become even more relaxed. It is easier to relax now that your eyes are closed. You will keep them closed until I tell you to open them or until I tell you to wake up . . . . You feel pleasantly drowsy and sleepy as you continue to listen to my voice. Just keep your thoughts on what I am saying.
You are going to get much more drowsy and sleepy. Soon you will be deep asleep but you will have no trouble hearing me. You will not wake up until I tell you to . . . . Soon I shall begin to count from one to twenty. As I count you will feel yourself going down farther and farther into a deep restful sleep, but you will be able to do all sorts of things I ask you to do without waking up . . . . One -- you are going to go more deeply asleep . . . . Two -- down, down into a deep, sound sleep. . . . Three -- four -- more and more asleep . . . . Five -- six -- seven -- you are sinking into a deep, deep sleep. Nothing will disturb you . . . . I would like you to hold your thoughts on my voice and those things I tell you to think of. You are finding it easy just to listen to the things I tell you . . . . Eight -- nine, ten -- half-way there -- always deeper asleep . . . . Eleven -- twelve -- thirteen -- fourteen -- fifteen -- although deep asleep you can hear me clearly. You will always hear me distinctly no matter how deeply asleep you feel you are. Sixteen -- seventeen -- eighteen -- deep sleep, fast asleep. Nothing will disturb you. You are going to experience many things that I will tell you to experience . . . . Nineteen -- twenty. Deep asleep! You will not wake up until I tell you to. You will wish to sleep comfortably and to have the experiences I describe to you.

I want you to realize that you will be able to speak, to
move, and even to open your eyes if I ask you to do so, and still remain just as hypnotized as you are now. No matter what you do, you will remain hypnotized until I tell you otherwise . . . . All right, then . . .

Go to Instruction 1. HAND LOWERING.

0'. INDUCTION BY EYE CLOSURE

For those who close their eyes early

As soon as their eyes close, terminate sentence appropriately, then say:

You are comfortably relaxed, but you are going to relax much more, much more. Your eyes are now closed. Keep your eyes closed until I tell you to open them or to wake up.

Then pick up at the appropriate place and continue with the following suggestions, all of which assume that the eyes are already closed. If the eyes should reopen, instruct subject to close them.

(2') Now take it easy and just let yourself relax.

Don't be tense. Just listen carefully to my voice. If your thoughts wander away from it, that is all right, but bring your attention back to it. Sometimes my voice may change a little, or sound as if it were coming from far off. That is all right. If you begin to get sleepier, that will be fine, too. Whatever happens, accept it, and just keep listening to my voice as you become more and more relaxed. More and more relaxed. Just listen and relax. Whatever you feel is happening, just let it happen.
(3') Relax more and more. As you think of relaxing, your muscles will relax. Starting with your right foot, relax the muscles of your right leg . . . Now the muscles of your left leg . . . just relax all over. Relax your right hand, your forearm, upper arm, and shoulder . . . . That's it . . . . Now your left hand . . . and forearm and upper arm . . . and shoulder. Relax your neck, and chest . . . more and more relaxed . . . completely relaxed.

(4') As you become relaxed, your body will feel sort of heavy or perhaps numb. You will begin to have this feeling of numbness or heaviness in your legs and feet . . . in your hands and arms . . . throughout your body . . . as though you were settling deep into the chair. The chair is strong; it will hold your heavy body as it feels heavier and heavier. You are beginning to feel drowsy and sleepy, drowsy, sleepy. You are breathing freely and deeply, freely and deeply. You are getting more and more sleepy and drowsy, and your whole body is becoming more and more tired and heavy.

(5') You are relaxed, very relaxed. By letting yourself go you can become even more relaxed. You can reach a state of deeper, more complete relaxation. You are becoming increasingly drowsy and sleepy. There is a pleasant feeling of numbness and heaviness throughout your body. You begin to feel so relaxed, so sleepy. It is easier to bring back your thoughts from other things and to attend only to my voice.
Soon you will just listensleepily to my voice, as you become more and more deeply relaxed.

(6') You are relaxed, very relaxed. Your whole body feels heavy and relaxed. You feel a pleasant warm tingling throughout your body as you get more and more tired and sleepy. Sleepy. Drowsy. Drowsy and sleepy. Keep your thoughts on what I am saying; listen to my voice. Soon there will be nothing to think of but my voice and my words, while you relax more and more. There are no troubles, no cares to bother you now. Nothing seems important but what my voice is saying, nothing else is important now. You are interested only in what my voice is saying to you. Even my voice may sound a little strange, as though it comes to you in a dream, as you sink deeper into this numbness, this heaviness, of deep relaxation. Relax, relax . . . deeply relaxed. Deeper, deeper, deeper.

(7') You feel pleasantly drowsy and sleepy as you continue to listen to my voice. Just keep your thoughts on what I am saying. You are going to get much more drowsy and sleepy. Soon you will be deep asleep but you will have no trouble hearing me. You will not wake up until I tell you to . . . . Soon I shall begin to count from one to twenty. As I count you will feel yourself going down farther and farther into a deep restful sleep, but you will be able to do all sorts of things I ask you to do without waking up . . . One
-- you are going to go more deeply asleep . . . . Two -- down, down into a deep, sound sleep . . . . Three -- four -- more and more asleep . . . Five -- six -- seven -- you are sinking into a deep, deep sleep. Nothing will disturb you. I would like you to hold your thoughts on my voice and those things I tell you to think of. You are finding it easy just to listen to the things I tell you . . . . Eight -- nine -- ten -- half-way there -- always deeper asleep . . . . Eleven -- twelve -- thirteen -- fourteen -- fifteen -- although deep asleep you can hear me clearly. You will always hear me distinctly no matter how deeply asleep you feel you are . . . . Sixteen -- seventeen -- eighteen -- deep asleep, fast asleep. Nothing will disturb you. You are going to experience many things that I will tell you to experience . . . Nineteen -- twenty. Deep asleep! You will not wake up until I tell you to. You will wish to sleep comfortably and to have the experiences I describe to you.

I want you to realize that you will be able to speak, to move, and even to open your eyes if I ask you to do so, and still remain just as hypnotized as you are now. No matter what you do, you will remain hypnotized until I tell you otherwise . . . . All right, then . . .

Go to Instruction 1. HAND LOWERING.
1. HAND LOWERING (RIGHT HAND)

Now hold your right arm out at shoulder height, with the palm of your hand up. There, that's right . . . . Attend carefully to this hand, how it feels, what is going on in it. Notice whether or not it is a little numb, or tingling; the slight effort it takes to keep from bending your wrist; any breeze blowing on it. Pay close attention to your hand now. Imagine that you are holding something heavy in your hand . . . maybe a heavy baseball or a billiard ball . . . something heavy. Shape your fingers around as though you were holding this heavy object that you imagine is in your hand. That's it . . . . Now the hand and arm feel heavy, as if the weight were pressing down . . . and as it feels heavier and heavier the hand and arm begin to move down . . . as if forced down . . . moving . . . moving . . . down . . . more and more down . . . heavier . . . heavier . . . the arm is more and more tired and strained . . . down . . . slowly but surely . . . down, down . . . more and more down . . . the weight is so great, the hand is so heavy . . . You feel the weight more and more . . . the arm is too heavy to hold back . . . it goes down, down, down . . . more and more down . . .

Unless all the way down, allow 10 seconds; note extent of movement, then continue:

(If not all the way down:) That's good . . . now let
your hand go back to its original position on the arm of the chair, and relax. You probably experienced much more heaviness and tiredness in your arm than you would have if you had not concentrated on it and had not imagined something trying to force it down. Now just relax ... Your hand and arm are now as they were, not feeling tired or strained . . . . All right, just relax.

(If all the way down:) That's good ... now let your hand return to its original position. Just let it rest there, and relax. Your hand and arm are now as they were, not feeling tired or strained. All right ... just relax.

Record score. Score (+) if hand has lowered at least six inches by end of 10-second wait. Go to Instruction 2. MOVING HANDS APART.

2. MOVING HANDS APART

Now extend your arms ahead of you, with palms facing each other, hands close together but not touching. Let me show you.

Take hold of subject's hands and position them about two inches apart.

I want you to imagine a force acting on your hands to push them apart, as though one hand were repelling the other. You are thinking of your hands being forced apart and they begin to move apart ... separating ... separating ... moving apart ... wider apart ... more and more away from
each other . . . more and more . . . .

Allow 10 seconds without further suggestions and note extent of motion.

(If hands have moved very little:) That's fine. You notice how closely thought and movement are related. I'll take hold of your hands and bring them together so that you can feel how much they have moved apart.

Take subject's hands and move them together fairly slowly.

(If hands have moved apart:) That's fine. Just put your hands back on the arms of the chair and relax.

Record score. Score (+) if hands are six or more inches apart at end of 10 seconds. Go to Instruction 3. MOSQUITO HALLUCINATION.

3. MOSQUITO HALLUCINATION

You have been listening to me very carefully, paying close attention. You may not have noticed a mosquito that has been buzzing, singing, as mosquitos do . . . Listen to it now . . . hear its high pitched buzzing as it flies around your right hand . . . . It is landing on your hand . . . perhaps it tickles a little . . . there it flies away again . . . you hear its high buzz . . . It's back on your hand tickling . . . it might bite you . . . you don't like this mosquito . . . You'd like to be rid of it . . . Go ahead, brush it off . . . get rid of it if it bothers you . . .
(Allow 10 seconds).

It's gone . . . that's a relief . . . you are no longer bothered . . . the mosquito has disappeared. Now relax, relax completely

Record score. Score (+) for any grimacing, any movement, any acknowledgment of effect. Go to Instruction 4. TASTE HALLUCINATION.

4. TASTE HALLUCINATION

A. Sweet Taste

I want you to think of something sweet in your mouth. Imagine that you have something sweet tasting in your mouth, like a little sugar . . . and as you think about this sweet taste you can actually begin to experience a sweet taste . . . It may at first be faint, but it will grow and grow . . . and grow . . . Now you begin to notice a sweet taste in your mouth . . . the sweet taste is increasing . . . sweeter and sweeter . . . How much of a sweet taste is there now in your mouth?

If the subject indicates that he tastes sweet, determine how strong the taste is. If moderately strong, go on to B. Sour Taste; if no taste or very weak, continue as follows:

It will get stronger . . . it often takes a few moments for such a taste to reach its full strength . . . . It is now getting stronger . . . stronger . . . There . . . how is it now? Stronger?
Note reply, and go on with B. Sour Taste, starting with a. or b., depending upon the experience with sweet.

B. Sour Taste

a. (If little or no perception of sweet taste) That's all right. Some hypnotized persons can experience this sort of taste well and others cannot . . . Let's see how you do with another taste. (Go on with c.)

b. (If subject reported distinct taste of sweet) Now notice that something is happening to that taste. It is changing . . . (Go on with c.)

c. You are now beginning to have a sour taste in your mouth . . . an acid taste, as if you have some lemon in your mouth, or vinegar . . . The taste in your mouth is getting more and more sour, more acid . . . more and more sour . . . Do you have that sour taste in your mouth now?

Note reply. If reply is "yes," ask "Is it strong? How does it compare in strength with the sweet you experienced earlier?"

d. (If sour not experienced) Not everyone can experience tastes like this when hypnotized. Your mouth feels quite normal . . . Just relax and don't think about tastes anymore . . . Just continue to relax . . .

e. (If sour experienced) That's fine . . . but note the sour taste is going away and your mouth feels just as it did before I mentioned any tastes at all . . . There, it's quite normal now . . . and you just continue to relax . . . more
and more relaxed . . . .

Record (+) if both tastes experienced, and either (a) one is accompanied by overt signs, such as lip movements or grimacing, or (b) one is reported as strong. Go to Instruction 5. ARM RIGIDITY.

5. ARM RIGIDITY (RIGHT)

Please hold your right arm straight out, and fingers straight out, too. That's it, right arm straight out. Think of your arm becoming stiffer and stiffer . . . stiff . . . very stiff . . . as you think of its becoming stiff you will feel it become stiff . . . more stiff and rigid, as though your arm were in a splint so the elbow cannot bend . . . stiff . . . held stiff, so that it cannot bend. A tightly splinted arm cannot bend . . . Your arm feels stiff as if tightly splinted . . . Test how stiff and rigid it is . . . Try to bend it . . . try . . . (Allow 10 seconds).

(If arm bends:) That's fine. You will have an opportunity to experience many things. You probably noticed how your arm became stiffer as you thought of it as stiff, and how much effort it took to bend it. Your arm is no longer at all stiff. Place it back in position, and relax.

(If arm does not bend:) Relax . . . don't try to bend your arm any more . . . It is not stiff any longer . . . Let it relax back into position. Just relax.

Record score. Score (+) if there is less than two inches of arm bending in 10 seconds. Go to
Instruction 6. DREAM.

6. DREAM

We are very much interested in finding out what hypnosis and being hypnotized means to people. One of the best ways of finding out is through the dreams that people have while they are hypnotized. Some people dream directly about the meaning of hypnosis, while others dream about this meaning in an indirect way, symbolically, by dreaming about something which does not seem outwardly to be related to hypnosis, but may very well be. Now neither you nor I know that sort of a dream you are going to have, but I am going to allow you to rest for a little while and you are going to have a dream...a real dream...just the kind you have when you are asleep at night. When I stop talking to you very shortly, you will begin to dream. You will have a dream about hypnosis. You will dream about what hypnosis means...Now you are falling asleep...Deeper and deeper asleep...very much like when you sleep at night...Soon you will be deep asleep, soundly asleep. As soon as I stop talking you will begin to dream. When I speak to you again you will stop dreaming, if you still happen to be dreaming, and you will listen to me just as you have been doing. If you stop dreaming before I speak to you again, you will remain pleasantly and deeply relaxed...Now sleep and
dream . . . Deep asleep!

Allow 2 minutes. Then say:

The dream is over; if you had a dream you can remember every detail of it clearly, very clearly. You do not feel particularly sleepy or different from the way you felt before I told you to fall asleep and to dream, and you continue to remain deeply hypnotized. Whatever you dreamed you can remember quite clearly, and I want you to describe it to me from the beginning. Now tell me about your dream, right from the beginning.

(If subject has no dream:) That's all right -- not everyone dreams.

(If subject hesitates, or reports vaguely, probe for details. Then terminate:) That's all for the dream.

Record the dream as nearly verbatim as possible. Score (+) if subject dreams well (i.e. has an experience comparable to a dream -- not just vague, fleeting experiences, or just thoughts or feelings without accompanying imagery). It is possible to obtain a plus score, even though the subject may insist it was not a real dream. Go to Instruction 7. AGE REGRESSION.

7. AGE REGRESSION

Material needed: 8 1/2 x 11 in. pad of paper and #1 soft lead pencil.

Continue to go deeper and deeper into the hypnotic state. I am going to give you a pad and a pencil. Let's see, which hand do you write with? Good, here you can hold
the pad in your (left, right) hand and the pencil in your (right, left) hand in such a way that you can easily write on the pad with the pencil. (Place pad and pencil in hands, being sure eyes remain closed.) Now please write your name . . . and while you are at it, why don't you also write your age and the date. That's fine. Keep the pad and pencil in your hands and listen closely to me. I would like you to think about when you were in the fifth grade of school; and in a little while you will find yourself once again a little boy (girl) on a nice day, sitting in class in the fifth grade, writing or drawing on some paper . . . I shall now count to five and at the count of five you will be back in the fifth grade . . . One, you are going back into the past. It is no longer (state present year), nor (state an earlier year) or (state a still earlier year), but much earlier. Two, you are becoming increasingly younger and smaller . . . presently you will be back in the fifth grade, on a very nice day. Three, getting younger and younger, smaller and smaller all the time. Soon you will be back in the fifth grade, and you will feel an experience exactly as you did once before on a nice day when you were sitting in class, writing or drawing. Four, very soon you will be there . . . Once again a little boy (girl) in a fifth grade class. You are nearly there now . . . In a few moments you will be right back there. Five! You are now a small boy (girl) in a classroom
in school . . .

How old are you? . . .

Where are you? . . .

What are you doing? . . .

Who is your teacher? . . .

Continue, even if there is no evidence of regression.

You have a pad of paper and are holding a pencil. I would like you to write your name on the pad with this pencil . . . That's fine, and now please write down your age . . . and now the date, if you can . . . and the day of the week . . .

Presently you will no longer be in the fifth grade, but you will be still younger, back in the second grade. I shall count to "two," and then you will be in the second grade. One, you are becoming smaller still, and going back to a nice day when you were in the second grade . . . Two, you are now in the second grade, sitting happily in school with some paper and pencil . . . You are in the second grade . . .

What is your name? . . .

And how old are you? . . .

Where are you? . . .

Who is your teacher? . . .

Would you please write your name on the paper . . .

That's good . . . And now can you write how old you are? . . . That's fine. . . And can you tell me what the date is
today? . . . Or the day of the week? . . .

 Regardless of what the responses have been:

 That's fine . . . And now you can grow up again and come right back to (state current day and date) in (name of locale of testing). You are no longer a little boy (girl) but a grown up person of (state age) sitting in a chair deeply hypnotized. How old are you? . . . And what is the date? . . . Where are you? . . . That's right . . . Today is (correct date) and you are (correct age) and this is (name of place where subject is being tested). Fine, everything is back as it was. Now I'll take the pad and pencil you have been holding . . . (Remove pad and pencil) . . . Now just continue to be comfortably relaxed . . .

 Score (+) if a clear change in handwriting between the present and one of the regressed ages. Go to Instruction 8. ARM IMMOBILIZATION.

8. ARM IMMOBILIZATION (LEFT ARM)

 You are very relaxed and comfortable, with a feeling of heaviness throughout your body. I want you now to think about your left arm and hand. Pay close attention to them. They feel numb and heavy, very heavy. How heavy your left hand feels . . . even as you think about how heavy it is, it grows heavier and heavier . . . . . . Your left arm is getting heavier . . . heavy . . . heavy . . . Your hand is getting heavier, very heavy, as though it were being pressed
against the arm of the chair. You might like to find out a little later how heavy your hand is -- it seems much too heavy to move -- but in spite of being so heavy, maybe you can move it a little, but maybe it is too heavy even for that . . . Why don't you see how heavy it is . . . Just try to lift your hand up, just try. (Allow 10 seconds)

(If hand lifts:) That's fine. You see how it was harder to lift than usual because of the relaxed state you are in. Now place your hand back in position on the arm of the chair and relax. Your hand and arm now feel normal again. They are no longer heavy. Just relax . . . relax all over.

(If hand does not lift:) That's fine . . . Stop trying . . . just relax. Your hand and arm now feel normal again. They are not heavy any more. Just relax . . . relax all over.

Record score. Score (+) if arm rises less than one inch in the ten-second period. Go to Instruction 9. ANOSMIA TO AMMONIA.

9. ANOSMIA TO AMMONIA

Material needed: A small screw-top bottle filled with undiluted household ammonia.

In a moment you are not going to be able to smell any odors . . . Even now you are becoming less and less able to smell odors . . . you can smell odors less and less . . . less and less . . . Very soon you will be unable to smell
even the strongest of odors . . . Now you can no longer smell anything at all. You can no longer smell any odors. I am going to place a bottle of an odorous substance under your nose so that you can see for yourself that your sense of smell is completely gone, and you can't smell anything . . .

Your nose is completely insensitive . . . See for yourself that your nose is anaesthetized, incapable of smelling any odors . . .

Bring the bottle of ammonia three inches away from the subject's nose and say:

Now take a good sniff . . .

Remove bottle after opportunity for sniffing has been given.

a. *(If subject sniffs satisfactorily:) Did you smell anything just now? (If "yes") What did it smell like to you? Note reply, and go to c. *Termination.*

b. *(If subject fails to sniff satisfactorily:) You can take a better sniff than that . . . (Again place bottle under nose) Go ahead and take a good sniff and see that you really can't smell . . . (remove bottle) Did you smell anything this time? What did it smell like to you?

c. *Termination, for all subjects:* That's fine . . . now your nose is returning to its normal state of smell . . . In a moment you will be able to smell as you have always been able to do . . . Now you can smell fine, as well as ever. Here, take a good sniff of this.
Place opened bottle under subject's nose. After removing and closing the bottle, inquire:

How does this compare with what you smelled a little while ago?

All right, everything is normal again. We are through with odors. Just sit back and relax.

Score (+) if odor of ammonia denied and overt signs were absent. Go to Instruction 10. HALLUCINATED VOICE.

10. HALLUCINATED VOICE

I forgot to mention to you a while ago that there is someone in the office who wants to ask you some questions about yourself for our records, such as how old you are, where you were born, how many brothers and sisters you have, and a few other factual questions. I hope you won't mind answering these questions. The questions will be asked over a loudspeaker microphone combination which is on the wall to your right. Please talk good and loud when you answer so that you can be heard clearly. The loudspeaker has just been turned on . . . There's the first question . . .

Allow 10 seconds. If subject begins to answer, go to c. below; if no answer, say:

Didn't you hear the question?

a. (If subject says he hears nothing:) That's fine. Let's go on to something else. There is no voice asking questions.

Score (-) and go to Instruction 11. NEGATIVE VISUAL
HALLUCINATION.

b. (If subject says he has heard the question, but has not answered aloud:) I could not hear what you said. Please answer so that I can hear you, too. (An occasional subject may hallucinate his answers; if he appears to be hallucinating, repeat the request to speak more loudly.)

c. (If subject hears and responds, allow him time to give three or four answers, then terminate as follows:)
That's fine. I think you have answered enough questions and we had better go on to something else. There is no longer any voice asking questions.

Score (+) if subject answers realistically at least once, or gives evidence of having hallucinated his answers. Go to Instruction 11. NEGATIVE VISUAL HALLUCINATION.

11. NEGATIVE VISUAL HALLUCINATION: THREE BOXES

Material needed: Small table to be placed before subject; a small folding TV table will do. Three small colored boxes (e.g. red, white, and blue), about 2 in. x 3 in. on a side and 1/2 in. deep. Line up boxes from left to right in front of the subject on the table.

While you sit there with your eyes closed, I am placing a small table in front of you.

Place table; arrange the three boxes.

In a little while I am going to ask you to open your eyes and look at the table in front of you, remaining as hypnotized as you now are. I have placed two boxes on the table. In fact, that is all there is on the table: just two
boxes. Two small boxes and nothing else . . . All right, open your eyes slowly, and look at the two boxes. Do you see them? . . . Do you see anything else on the table?

a. *(If subject reports three boxes:)* That's right . . . There really are three boxes. Now close your eyes and relax, as I take away the table and the boxes.

Score (-) and go to Instruction 12. POST-HYPNOTIC AMNESIA.

b. *(If subject accepts fact of two boxes:)* That's right. You see just the two boxes. Now I want you to tell me what these boxes look like. Are they large? . . . Are they alike? Record colors named by the subject.

That's right, they are (colors named by the subject). By the way, is the (color of one box) on the right or the left of the other box? That's right.

Termination: But now look hard . . . Aren't there really three boxes? There really are three boxes . . . What is the color of the third box? . . . That's right . . . Now close your eyes and relax as I take away the table and the boxes.

Score (+) if hallucination is present, whether or not sustained. Sometimes the third box is perceived vaguely as a colored spot or shadow. The score is still (+). Go to Instruction 12. POST-HYPNOTIC AMNESIA.

12. POST-HYPNOTIC AMNESIA

Stay completely relaxed, but listen carefully to what I tell you next. In a little while I shall begin counting
backwards from twenty to one. You will awaken gradually, but you will still be in your present state for most of the count. When I reach "five" you will open your eyes, but you will not be fully awake. When I get to "one" you will be entirely roused up, in your normal state of wakefulness. You will have been so relaxed, however, that you will have trouble recalling the things I have said to you and the things you did or experienced. It will prove to cost so much effort to recall that you will prefer not to try. It will be much easier just to forget everything until I tell you that you can remember. You will forget all that has happened until I say to you: "Now you can remember everything!" You will not remember anything until then. After you wake up you will feel refreshed, and not have any pain or stiffness or other unpleasant aftereffects. I shall now count backwards from twenty, and at "five," not sooner, you will open your eyes but not be fully aroused until I reach "one." At "one" you will be fully awake. Ready, now: 20 - 19 - 18 - 17 - 16 - 15 - 14 - 13 - 12 - 11 - 10 (half-way) 9 - 8 - 7 - 6 - 5 - 4 - 3 - 2 - 1. Now you feel wide awake! I want to ask you a few questions about your experience. Please tell me now in your own words everything that has happened since you began looking at the target.

Record items on scoring sheet in order of mention. If blocked ask "Anything else?" and record answers until subject reaches a further impasse. Continue:
You have forgotten (all the, many, a few) things which happened. Can you tell me a little what it feels like? (If necessary, probe in order to ascertain nature of amnesia, i.e. whether true, verbal inhibition, etc.)

Record comments, then continue:

Listen carefully to my words. **Now you can remember everything.** Anything else now?

Record added items in order of mention. Remind subject of any items not mentioned by him. Continue:

About your inability to recall a while ago, how real was it to you?

Record comments.

That's all now. Thank you for participating.

Score (+) if subject recalls three or fewer items before being told "Now you can remember everything." The recall should be specific enough to identify the item; not, e.g., "something with my arms."
APPENDIX C

VIVIDNESS OF VISUAL IMAGERY QUESTIONNAIRE
Vividness of Visual Imagery Questionnaire (VVIQ)

No. ___________________________ Score: ______

Rating    Description
5  Perfectly clear and as vivid as normal vision
4  Clear and reasonably vivid
3  Moderately clear and vivid
2  Vague and dim
1  No image at all, you only "know" that you are thinking of the object

For items 1-4, think of some relative or friend whom you frequently see (but who is not with you at present) and consider carefully the picture that comes before your mind's eye.

Item

1. The exact contour of face, head, shoulders and body ( ) ( )
2. Characteristic poses of head, attitudes of body, etc. ( ) ( )
3. The precise carriage, length of step, etc. in walking( ) ( )
4. The different colours worn in some familiar clothes ( ) ( )

Visualize a rising sun. Consider carefully the picture that comes before your mind's eye.

Item

5. The sun is rising above the horizon into a hazy sky. ( ) ( )
6. The sky clears and surrounds the sun with blueness. ( ) ( )
7. Clouds. A storm blows up, with flashes of lightening. ( ) ( )
8. A rainbow appears. ( ) ( )

Think of the front of a shop which you often go to. Consider the picture that comes before your mind's eye.

Item

9. The overall appearance of the shop from the opposite side of the road. ( ) ( )
10. A window display including colours, shapes and details of individual items for sale. ( ) ( )
11. You are near the entrance. The colour, shape and details of the door. ( ) ( )
12. You enter the shop and go to the counter. The counter assistant serves you. Money changes hands. ( ) ( )
<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>5</td>
<td>Perfectly clear and as vivid as normal vision</td>
</tr>
<tr>
<td>4</td>
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</tr>
<tr>
<td>3</td>
<td>Moderately clear and vivid</td>
</tr>
<tr>
<td>2</td>
<td>Vague and dim</td>
</tr>
<tr>
<td>1</td>
<td>No image at all, you only &quot;know&quot; that you are thinking of the object</td>
</tr>
</tbody>
</table>

Finally, think of a country scene which involves trees, mountains and a lake. Consider the picture that comes before your mind's eye.

Item

13. The contours of the landscape. 
14. The colour and shape of the trees. 
15. The colour and shape of the lake. 
APPENDIX D

ROTENBERG AND BOWERS' ABSORPTION QUESTIONNAIRE
ROTENBERG AND BOWERS' ABSORPTION QUESTIONNAIRE

ID No. __ __ __ - __ __ - __ __ __  Score: _____

1. Do you ever become involved in a daydream to the point of becoming unaware of your surroundings? Circle how frequently this might occur.

   almost never   occasionally   often
   0              1              2

2. Do you ever become involved in a book to the point of becoming unaware of your surroundings? Circle how frequently this might occur.

   almost never   occasionally   often
   0              1              2

3. Do you ever become involved in a movie to the point of becoming unaware of your surroundings? Circle how frequently this might occur.

   almost never   occasionally   often
   0              1              2

4. Do you ever become involved in music to the point of becoming unsure of your surroundings? Circle how frequently this might occur.

   almost never   occasionally   often
   0              1              2
APPENDIX E

SLEEP INVENTORY
SLEEP INVENTORY

Research subject #: X X X - ___ - ___ - ___ - ___
Sex: ___ female ( ) ___ male ( )
Age: ___
Major: ______________________________________ ( )

Please leave blank:
CS ___ VS___ AS ___ NF ___ IR ___ NT ___ NTF ___ SW ___
ST___ I___ FHN ___ FHNT___ FHW___ FHT___ FHI___ PF1___ PF2___

Thank you for agreeing to participate in this study. Please answer the following questions as accurately as possible. Your answers will be kept confidential.

1. A nightmare is defined as a long frightening dream from which the sleeper awakens terrified, usually in the second half of the night or sleep period.

   How many nightmares have you experienced in the past year?
   _____ nightmares in the past year (past 12 months)

2. Different people react differently to nightmares. Some persons consider their nightmares interesting. Other persons may feel mildly nervous or anxious the next day. Others are extremely depressed or disturbed by these frightening dreams.

   Please rate your usual reaction to your nightmares according to the following scale:
   1 = not at all distressed
   2 = mildly disturbed
   3 = moderately affected (e.g. mildly nervous)
   4 = very disturbed, anxious, or depressed
   5 = intensely distressed and upset

   _____ usual reaction to nightmares (1-5)
3. A night terror is a sudden arousal, usually within an hour or two of falling asleep. Persons who experience night terrors appear to be intensely frightened. They often sit up in bed or jump out of bed, screaming. They usually do not fully awaken, and they do not remember anything about the episode the next day. Parents, roommates, or spouses usually inform a person that a night terror has occurred.

Have you ever experienced night terrors? ____ yes ____ no

How many night terrors have you experienced in the past year?

_____ night terrors in the past year (past 12 months)

3. Please indicate how many times you have experienced the following sleep behaviors in the past year:

(Give a number for the past 12 months)

_____ sleepwalking (other than during a night terror episode)

_____ sleeptalking (other than during a night terror episode)

_____ insomnia (chronic inability to fall asleep)

4. Has anyone else in your family ever experienced . . .

Nightmares? ____ yes ____ no If yes, relation: ____________

Night terrors? ____ yes ____ no If yes, relation: ____________

Sleepwalking? ____ yes ____ no If yes, relation: ____________

Sleeptalking? ____ yes ____ no If yes, relation: ____________

Insomnia? ____ yes ____ no If yes, relation: ____________
APPENDIX F

INVENTORY OF PERSONALITY FACTORS
Please check any of the following descriptors which apply to you now or which might have applied to you in the past (e.g. in childhood or adolescence):

____ extremely sensitive to light, noise, etc.
____ excessively open and trusting
____ experience extreme feelings of guilt
____ overly sensitive to criticism or rejection
____ preoccupied with aggressive activities, violence, death
____ very jealous of a younger brother or sister
____ seriously considered suicide
____ attempted suicide
____ extremely stereotyped with respect to sex role
____ very artistic or creative
____ extremely afraid of flying/speaking in public (circle 1)
____ very suspicious and distrustful of others' motives
____ compulsively organized and orderly
____ have had mystical or extrasensory experiences
____ very depressed
____ have had trouble getting along with a controlling father
____ have had trouble getting along with a controlling mother
____ extremely worried about my health
____ have had a bad drug experience
____ not able or willing to express anger openly
APPENDIX G

HUMAN SUBJECT INFORMED CONSENT FORM
HYPNOSIS CONSENT FORM

INFORMED CONSENT

NAME OF SUBJECT:

1. I hereby give consent to
to perform or supervise the following investigational
procedure or treatment:

2. I have (seen, heard) a clear explanation and understand
the nature and procedure or treatment; possible
appropriate alternative procedures that would be
advantageous to me (him, her); and the attendant
discomforts or risks involved and the possibility of
complications which might arise. I have (seen, heard) a
clear explanation and understand the benefits to be
expected. I understand that the procedure or treatment
to be performed is investigational and that I may withdraw
my consent for my (his, her) status. With my
understanding of this, having received this information
and satisfactory answers to questions I have asked, I
voluntarily consent to the procedure or treatment
designated in Paragraph 1 above.

DATE

SIGNED: ______________________ SIGNED: ______________________
WITNESS Subject or

SIGNED: ______________________ SIGNED: ______________________
WITNESS PERSON RESPONSIBLE

RELATIONSHIP

Instructions to persons authorized to sign:

If the subject is not competent, the persons responsible
shall be the legal appointed guardian or legally authorized
representative. If the subject is a minor under 18 years of
age, the person responsible is the mother or father or
legally appointed guardian. If the subject is unable to
write his name, the following is legally acceptable:
John H. (His X Mark) Doe and two (2) witnesses.
APPENDIX H

INTRODUCTION TO HYPNOSIS SESSION
Establishing Rapport Prior to the Initial Instructions

The following explanation is adapted from the Stanford Hypnotic Susceptibility Scale, Form A.

Time: 5 to 7 minutes

It is assumed that the subject has already agreed to be hypnotized. The gist of these remarks should be memorized, but the conversation should flow naturally; hence these remarks should not be read from the printed page.

The subject is seated in the chair in which he/she is to be hypnotized and the hypnotist in the chair he/she will use.

Let's talk a little while before we start. I want you to be quite at ease, and it may help if I answer a few of your questions first. I am assuming that this is the first time you are experiencing hypnotism. Am I right about this?

(If there has been prior experience, note the details. When? By whom? How often? Continue, even though the subject has had prior experience, introducing the necessary changes.)

People coming for the first time are sometimes a little uneasy because they do not know what the experience will be like, or because they may have a distorted notion of what it is like. It is very natural to be curious about a new experience. Your curiosity will be satisfied before we are through, but you can best get the answers you want by just
letting yourself be a part of what goes on, and by not trying to watch the process in detail.

Let me reassure you on a few points.

First of all, the experience, while a little unusual, may not seem as far removed from ordinary experience as you have been led to expect. Hypnosis is largely a question of your willingness to be receptive and responsive to ideas, and to allow these ideas to act upon you without interference. These ideas we call suggestions.

Second, you will not be asked to do anything that will make you look silly or stupid, or that will prove embarrassing to you. We are here for serious scientific purposes.

Third, and finally, I shall not probe into your personal affairs, so that there will be nothing personal about what you are to do or say during the hypnotic state.

Have you any questions? (answer by paraphrasing above points)

We are trying here merely to understand hypnotism. Probably all people can be hypnotized, but some are much more easily hypnotized than others, even when each of them cooperates. We are studying some of these differences among people.

Have you any other questions or comments before we go ahead?
APPENDIX I

EXIT INSTRUCTIONS
Exit Instructions

This concludes the experimental procedure. When the entire experiment is finished, all participants will be invited to attend a debriefing meeting. At this meeting the experiment will be explained in further detail and the results of the study will be presented. All participants will have an opportunity to ask questions. An announcement about the debriefing meeting will be posted on the bulletin board in the psychology department.

Thank you very much for your participation. Please do not discuss your experience in this experiment with others until after the debriefing session.
REFERENCES


Barber, T. X. (1965). Measuring "hypnotic-like" suggestibility with and without hypnotic induction; psychometric properties, norms, and variables influencing
responses to the Barber Suggestibility Scale (BSS). *Psychological Reports*, 16, 809-844.


Betts, G. H. (1909). The distribution and functions of mental imagery. *Teachers College Contributions to Education* (No. 26).


Clinical Hypnosis, 24, 200-203.


Shor, R. E. (1959). Hypnosis and the concept of the


susceptibility, expectancies, and absorption.

*Psychological Reports, 53*, 723-734.


Psychology, 83, 266-277.


Wilson, S., & Barber, T. X. (1978). The creative imagination scale as a measure of hypnotic responsiveness:
Applications to experimental and clinical programs.
