To the Graduate Council:

I am submitting herewith a dissertation written by Robert Jeff Slavin entitled "Differences in the Subjective Experience of Hypnosis. A Comparison of Female Field-Independent and Female Field-Dependent Subjects at Three Depths of Hypnosis." I recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

Leonard Handler
Major Professor

We have read this dissertation
and recommend its acceptance:

William A. Pappas

Robert G. Wahler

Accepted for the Council:

Hilton A. Smith
Vice Chancellor
Graduate Studies and Research

DIFFERENCES IN THE SUBJECTIVE EXPERIENCE OF HYPNOSIS. A COMPARISON OF FEMALE FIELD-INDEPENDENT AND FEMALE FIELD-DEPENDENT SUBJECTS AT THREE DEPTHS OF HYPNOSIS

A Dissertation

Presented for the

Doctor of Philosophy

Degree

The University of Tennessee

Robert Jeff Slavin

August 1976

1288366

ACKNOWLEDGMENTS

I would like to use this space to thank those who have helped me as teachers and friends during the past four years of study. First I would like to thank the members of my committee for their help and support during this past year of writing and thinking. All have played an integral part in my growth. Dr. Wahler I thank for his understanding, kindness and for his part in helping me establish my identity as a clinical psychologist during my first year of training. Dr. Fine has emphasized the importance of clear thinking and scholarship. For this and his example as a fine therapist, I am most grateful. Dr. Poppen has helped me in my understanding of school systems and consultation. He has been a helpful consultant and source of support. Dr. Handler, my chairman and friend, has helped me grow as a therapist and as a person. The warmth I feel towards Len is immeasurable. He gave me the courage to be good and I am most grateful. In addition, I would like to thank Drs. Jack Byrne, John Kandilakis, Jack Barlow, Joe Lord, Mr. Jim Dowdle and Mr. Larry Gangaware for their help in making me a better and more flexible therapist.

Next I wish to thank my friend Lance. Without him, this study could never have been completed. He voluntarily and unselfishly contributed many hours of hypnosis without

complaint. Next I wish to thank my friends Elgan, Lorrie, Steve and Diane, Nick and Jane, Harry, Liliana and Jorge, Barbara, Charlie, and Amy. They greatly enriched my life in Knoxville and gave me much support during my graduate study.

Finally I wish to thank my family: Dad for his love, his support and his example. Jeanne for her help in translating and for the glow she has added to our lives. And most of all to my wife Carrie. This study never could have been completed without her unending editing, suggestions, typing, support, patience and most of all her love. She has helped me to grow as a husband, psychologist and person during these past four years. She has put up with my ups and downs and has always been there when I needed her. Lastly I wish to thank my mother. She would have been very proud.

ABSTRACT

This study was designed to assess differences in the subjective experience of hypnosis. The subjective experience of female field-independent and female field-dependent subjects was compared at light, medium and deep levels of hypnosis.

A total of two hundred undergraduate females from The University of Tennessee were tested on the Group Embedded Figures Test (EFT). Newey's (1975) criterion for field-independence/dependence was used in selecting one hundred and four subjects as field-independent or field-dependent. These subjects were assigned to one of two hypnotists for one session of individual hypnosis. The hypnotists were graduate students in clinical psychology and were trained in hypnotic technique. Neither hypnotist was aware of the subject's EFT score during the hypnosis session. A standard eye fixation technique was used for hypnotic induction followed by the Handler Hypnotic Deepening Steps (HHDS). Subjects were separated into light, medium and deep levels of hypnosis by the HHDS. In this manner, six groups of subjects were obtained: field-independent light, field-independent medium, field-independent deep, field-dependent light, field-dependent medium and field-dependent deep. Group size was limited to ten subjects and the first ten

subjects who met the individual group criterion constituted each group.

Upon termination of trance, the subject was given a sixty-one item inventory of subjective experience. The items were adapted from the literature on the subjective experience of hypnosis and could be answered on a four-point scale. The questionnaire results were used to test the following hypotheses:

1. The female-field-independent group will perceive hypnosis as a challenge to its self control and will emphasize that control and autonomy is maintained during hypnosis. Conversely, the female-field dependent group will perceive hypnosis as a process of losing autonomy and self control. These subjects will acknowledge transfer of control to the hypnotist.

2. The female-field-independent group and the female-field-dependent group will differ least at a light level of trance where autonomy is threatened, and will differ most at a deep level of trance when autonomy is threatened to a greater degree.

The results indicate that Hypothesis 1 tends to be supported. Female-field-independent subjects tend to receive lower scores on the hypnosis inventory than female field-dependent subjects. Thus the field-independent subjects seem to be denying loss of control and autonomy to a greater

extent than field-dependent subjects. Hypothesis 2 was not supported by the data. Tendencies were detected which indicate that the data was in the opposite direction predicted by Hypothesis 2. That is, the greatest differences in the subjective experience of hypnosis tended to be in the light level of hypnosis.

Implications of the above results were discussed in terms of lending further support to the work of Field (1965, 1973) and others who have argued that the subjective experience of hypnosis is not a unitary phenomenon. Such individual differences must be taken into account in any theory of hypnosis.

TABLE OF CONTENTS

CHAPTER		PAGE
I.	INTRODUCTION	1
II.	REVIEW OF THE LITERATURE	3
	Uncontrolled Observations and Controlled Experimentation which Speculate on the Nature of Hypnosis	3
	Physiological correlates with the hypnotic state	3
	Behavioral correlates	6
	Subjective experience	11
	Individual Differences in the Subjective Experience of Hypnosis	43
	Proposal	49
III.	RESEARCH PLAN	58
	Subject Selection	58
	Procedure	59
	Hypotheses	61
IV.	RESULTS	63
V.	DISCUSSION	82
BIBLIOGRAPHY		89
APPENDICES		99
Appendix A		100

CHAPTER PAGE

Appendix B 108

Appendix C 113

VITA 117

LIST OF TABLES

TABLE		PAGE
1.	2x3 Factorial Fixed Analysis of Variance for Total Scores on Hypnosis Inventory	65
2.	Analysis of the Total Score Interaction Effect by Duncan's New Multiple Range Test	67
3.	Summary of Probability Values for Significance among Groups on the Individual Items on the Hypnosis Inventory	69
4.	Duncan's New Multiple Range Test Results for Total Score Depth Effect	77
5.	Means and Probability Values for Significance among Groups on the Individual Items of the Hypnosis Inventory	114

CHAPTER I

INTRODUCTION

The current state of research on hypnosis is primitive. Theories abound and often overlap in what at first seems to be a never ending tangle. A major difficulty lies in the fact that there are no commonly agreed upon definitions of the subject matter. As Sarbin and Anderson (1967) have noted, the pivotal term "trance" is never clearly denoted but is treated as a primitive word that everyone presumably understands when used in theories since the time of Mesmer. This lack of rigor has led to the unfortunate state of affairs where results are often combined and generalized without adequately evaluating whether "trance A" equals "trance B." A common ground is often assumed but not proven. The question remains open as to whether hypnotists are dealing with a unitary phenomenon or whether there are various classes of this phenomenon. However, many researchers and practitioners would agree with the view that hypnosis is not a unitary phenomenon. Weitzenhoffer, as an example, writes:

> Can we point today to any defined phenomenon and say this and this alone is what we mean by hypnosis? . . . Why not then admit that hypnotic behavior does fall into classes and that perhaps no single principle can account for all of it at least in terms of our present knowledge regarding human behavior. The principle of parsimony is a fine thing provided it does apply . . . [Weitzenhoffer, 1963, p. 69].

It should be apparent that much work remains to be done in order to develop a clear understanding of the nature of hypnosis. Orne (1959) has suggested that the "essence" of hypnosis lies in the subjective experience of hypnosis. However, this area of hypnotic investigation has been ignored until recently. Even less attention has been given to individual differences in the subjective experience of hypnosis. The aim of this dissertation is to investigate expected individual differences in the subjective experience of hypnosis. This research will contribute to the growing literature on the nature of hypnosis from which a unified theory of hypnosis will eventually evolve.

Chapter II will be devoted to a review of the literature which bears on the nature of hypnosis. Both uncontrolled observations and controlled experimentation will be included. These sections will be followed by a section devoted to literature which suggests that we might expect individual differences in the subjective experience of hypnosis. This will be followed by a proposal for further experimentation. One principle has guided this review: an adequate theoretical understanding of the nature of hypnosis will not be forthcoming if the subjective experience of hypnosis is ignored.

CHAPTER II

REVIEW OF THE LITERATURE

I. Uncontrolled Observations and Controlled Experimentation which Speculate on the Nature of Hypnosis

A. Physiological Correlates with the Hypnotic State

Theorists have speculated about the physiological processes accompanying hypnosis since the 18th century. Mesmer's theory heavily relied upon the notion that the heavenly spheres emit influences that penetrate everywhere and exert influence on living organisms through changes in the nervous system. With the cure of his famous case of hysteria (Fraulein Oesterlin) in 1773, he systematized his thinking regarding hypnosis as a "magnetic cure." That is, hypnosis or "animal magnetism" as it was then called, cured disease by removing disharmony in the fluids that flow in the patient's nerves (Rosen, 1963).

Early neurophysiological theories which viewed hypnosis as an altered state of the brain were also purely speculative. Brenman and Gill (1947) summarize these theories as all depending upon some form of inhibition of the central nervous system. Heidenhain (19890) and Verworn (1901) for example believed that the ganglion cells of the cortex were somehow inhibited. These neurophysiological theories all imply a

similarity between sleep and hypnotic state. Indeed Pavlov (1923) considered hypnosis to be a state of inhibition of the brain related to sleep. Pavlov believed that the inhibition in hypnosis was confined to motoric impulses.

In more recent times, the theoretical debate has shifted to differences between what Sutcliffe (1960, 1961) has termed the "credulous" and "skeptical" theorists. The credulous theorists such as Erickson (1952) assume that hypnotic suggestions are substitutable for real stimuli and consequently that hypnotic fantasy is akin in its sensory content to perception produced by parallel real stimuli. As an example, the credulous viewpoint would predict that following successful hypnotically suggested anaesthesia a subject's limb has no more sensory experience in the presence of painful stimulation than in the absence of painful stimulation. The skeptical theorists, such as Sarbin (1950) and White (1941), have doubted that hypnotic fantasies have the same sensory content as parallel perceptions of real stimuli.

Sutcliffe (1960, 1961) has reviewed the experimental literature on anaesthesia, positive and negative hallucinations (auditory, visual and temporal), regression, and delusion which tend to support or refute the "credulous" or "skeptical" viewpoint. Various physiological measures (GSR, EEG, etc.) were utilized in examining the sensory qualities of the above suggested phenomena. The general conclusions

were: (1) It was not possible by hypnosis to produce sensory conditions identical in form with those produced by parallel real stimuli. For example, despite hypnotic anaesthesia, GSR was heightened in hypnotized subjects who were shocked. Conversely there was little GSR response in the absence of shock despite hypnotic suggestion that the subject was experiencing shock. Experimentation with delayed speech feedback indicates that decrement in performance occurs despite negative auditory hallucination reports; conversely no decrement was found despite positive hallucination reports. (2) To a great degree, hypnotic subjects were convinced that the suggested anaesthesia, hallucination, etc. had occurred despite physiological evidence to the contrary.

Sutcliffe (1961) concludes:

> The credulous view that hypnotic suggestions are substitutable for real states of affairs as conditions of sensory experience must be rejected . . . The qualitative evidence suggests that differences might more fruitfully be sought in terms of perception and belief . . . (Thus) the distinguishing feature of hypnosis appears to be the subjective state; and the main feature of this state is the hypnotized subject's emotional conviction that the world is as suggested by the hypnotist, rather than a pseudoperception of the world [p. 200].

More recent reviews of the literature in this area have been made by Sarbin and Slagle (1972) and Barber (1970). Both conclude that there is no evidence for a physiological process that independently serves as a criterion for the hypnotic state.

B. Behavioral Correlates

Several investigators have attempted to isolate objective behavioral signs of the hypnotic state. A review of this literature suggests that hypnotic behaviors have changed since the time of Mesmer. As van der Walde (1967) and others have pointed out, the Mesmeric phenomenon of the 18th century was distinguished by the patient exhibiting a crisis (usually a convulsion) which would be followed by a quiet period of stupor or lethargy. Hopefully this period was followed by symptom removal. Van der Walde (1967) suggests that these behaviors were very much in keeping with the 18th century concept of disease, i.e., "as an intense phenomenon resolved only after a dramatic crisis had occurred." Hypnotic behaviors, seen today, rarely resemble the above.

Several modern theorists have attempted to isolate observable behavioral cues of the modern hypnotic state. These cues were derived from a subjective summing of the past experience of the hypnotist. Gill and Brenman (1959, pp. 38-9), for example, list several subtle isolated behavioral cues including:

> Split second hesitations of response . . . , momentary lapses into somewhat stiff or frozen postural attitudes . . . an impression of a slight slowing down of the pace of bodily movement . . . , fleeting glazing of the eyes, the "unseeing look," . . . leaning on the hypnotist for direction . . . languourous or immobile (behavior) . . .

All these signs according to Gill and Brenman indicate "a fundamental absence of a feeling of independent 'I-ness.'"

Weitzenhoffer has made similar observations regarding the appearance of the hypnotized subject. In 1957 he wrote:

> The subject often appears to be soundly asleep . . . His eyes are closed, the muscles of his face are rather loose, his entire body is quite relaxed, and, if he is sitting in a chair, he often will have slumped down in it. The head often falls forward on the S's chest, sometimes far backward or, again, sideways over his shoulder. The arms and hands usually rest limply on a support or hang limply by his sides [p. 210].

Weitzenhoffer (1963) distinguished two observable features of hypnosis:

1. Loss of spontaneity. (The subject is immobile and seems to freeze. If movement is present there is a definite psychomotor retardation resulting in an economy of movement, and a slow motion, automatic quality.)

2. Characteristic trance stare. (Eyes are unseeing and there is an unblinking quality about the eyes. There is a fixity of the stare and perhaps a decrease in spontaneous movements. Weitzenhoffer states that in some cases the eyes appear to be unfocused or focused on infinity. There is a "looking right through and beyond you" quality. At other times the eyes may stare at an object or point in space as if fascinated.)

Barber and Calverley (1966) have attempted to test the validity of the observations made by Weitzenhoffer (1957, 1963). In Barber's study, three groups were compared: (1) a hypnotic group (N=55) which was induced with the

Stanford Hypnotic Susceptibility Scale: Form A (SHSS:A); (2) a "place yourself in hypnosis" group (N=55). These subjects were told to close their eyes for five minutes and place themselves in hypnosis; (3) a control group (N=50) which was simply told to close their eyes for five minutes. Twenty-five percent of the subjects in each experimental group and none of the control group rated themselves as hypnotized. On the average, subjects in both the "place yourself in hypnosis" group and in the hypnotic induction group rated themselves as having been hypnotized to a light-medium level.

Barber and Calverley found significant differences between the experimental groups and the control group on three dimensions of appearance:

1. Limp-relaxation. In comparison to the control group the experimental groups appeared to be relaxed or slumped in the chair with head tilted and arms either hanging limply or relaxed on a support.

2. Trance stare. When asked to open their eyes, the experimental groups as compared to the controls, failed to look around the room or fixate on a point in space.

3. Psychomotor retardation. This dimension refers to slowness in movements as measured by time in seconds required to extend the left and right arm to horizontal position. The experimental groups were found to be significantly slower than the controls. It should be noted that

Barber and Calverley could not differentiate these two groups on the lack of spontaneity dimension. The subjects could not be separated on their failure to speak, open their eyes, and change body position.

The above experiment would tend to confirm the observations of Weitzenhoffer, that these behaviors are present during the hypnotic state. Further breakdown of the data, with regard to depth was not attempted by Barber and Calverley thus no continuum of behavior has been experimentally derived to this author's knowledge.

White (1937) distinguishes two groups of hypnotic behaviors. An active style was isolated which was characterized by dramatic unsuccessful attempts to challenge suggestions by the movement of antagonistic muscles. These subjects responded promptly and eagerly to hypnosis. A passive style was also isolated. These subjects seem much more immobile and much effort must be used by the hypnotist to get them to move. These subjects respond to challenges with only barely discernible effort in contrast to the active style. White points out that there is precedence in the literature for such a distinction. Bernheim (1880), Moll (1909), and Binet and Féré (1888) describe active and passive styles.

The question now arises as to how to explain the apparently different behaviors found when comparing 18th

century animal magnetism and 20th century hypnosis as described by Gill and Brenman (1959), Weitzenhoffer (1957, 1963), or White (1937). The research of Orne (1959) suggests that the subject's preconception of the role of the hypnotic subject, coupled with explicit and implicit cues provided by the hypnotist and the situation, determine the behavior patterns exhibited in hypnosis. Thus different role conceptions and cues present in the two centuries may have elicited different behaviors in hypnosis.

The behavioral correlates of hypnosis are of importance because of their common usage in assessing hypnotic depth reached by a subject or patient. In most experiments an objective measure of behavior during induction is employed. The most commonly used instrument in assessing hypnotic depth is the Stanford Hypnotic Susceptibility Scale (Weitzenhoffer and Hilgard, E., 1959, 1962) which is an objective measure dependent upon the subject's behavior. In essence, this scale measures behavioral compliance with suggestions made by the hypnotist. The greater the subject complies, the greater the depth assigned. However as Orne (1966) succinctly points out:

> The experimenter is not attempting to measure behavioral compliance per se but rather the behavioral manifestations of subjective experience. If one were measuring only behavioral compliance, one would use the simple instruction: "Fall backwards now." In an experimental context, at least, compliance would be almost total . . . The response measures "depth of

> hypnosis" only insofar as it reflects an experienced inability on the part of the subject to (for example) open his eyes . . . A subject is genuinely hypnotized not because he is willing to report certain things, but because his report really describes his personal subjective experience [p. 724].

In short, hypnosis is not merely role playing and the "essence" of hypnosis (Orne, 1959) is to be found in the subject's subjective experiences. While we must accept the subject's appearance and behavior as a dependent variable, we must also look beyond to subjective experiences.

C. Subjective Experience

Orne's demand for the inclusion of subjective experience does not seem to be surprising. The fact that there had been no quantified research on the subjective aspects of hypnosis prior to 1959 does seem to be surprising. Admittedly, subjective reports had been scattered throughout the literature prior to 1959 but no systematic study had been done by the laboratory investigator seeking objectivity. Segal and Lachman (1972) argue that a paradigm shift was occurring in American psychology during the early 1960's which allowed for broader laboratory research than the behaviorists had previously accepted. Specifically, this shift made investigation of higher mental processes acceptable. There are now two positions investigating hypnosis--the phenomenological position and the behavioral position (Fromm and Shor, 1972). For the phenomenologist, outward

behavior is a meaningful index of hypnosis only to the extent that it accurately reflects the primary subjective event.

Orne (1959) has clearly shown that outward behaviors may be similar between faking and deeply hypnotized subjects despite radically different subjective experiences. Clearly, if different experiences can lead to the same external observable behavior there is a need to systematically examine the subjective experiences of patients and subjects. By 1965, Ludwig and Levine (1965) observed that very little quantitative research had followed after the call for research by Orne (1959) and Sutcliffe (1961). Since 1965 several investigators, notably Ås and Østvold (1968), Field (1965), Tart (1972), and Ludwig and Levine (1965) have conducted laboratory research on the subjective experience of hypnosis. These researchers have constructed scales to assess the subjective experience of hypnosis. These scales have been derived from theoretical writings and isolated reports of subjective experiences of hypnosis found in the literature. Thus, before reviewing these scales, a summary of the theoretical literature must be presented. Several categories can be used to describe this literature. These categories are not discrete and some overlap tends to occur.

1. Altered state of consciousness. Many theories of hypnosis postulate an altered state of consciousness. White (1941) has used this term to denote a loss of a wide complex

frame of reference normally used during the waking state. He notes that unsusceptible hypnotic subjects commonly complain of an inability to "forget the situation as a whole." White speculates that the subjects' "frame of reference has refused to contract."

Orne (1959) describes deep hypnosis as a state that is discontinuous from normal waking experience. Similarly, Shor (1959, 1962) speaks of the loss of a "generalized reality orientation" (GRO). Shor posits that the usual reality-orientation fades into unawareness during hypnosis which leaves "the ongoing contents of awareness increasingly more functionally isolate . . . (At a level of deep trance) the hypnotic happenings become phenomenologically the only possible reality of the moment" (Shor, 1962, pp. 30-32). Gill and Brenman (1959) likewise posit an altered state of consciousness. During this state "ego equilibrium is disrupted." These authors suggest that changes in self-awareness occur during hypnosis as seen in a loss of self-consciousness and a quality marked by literalness and humorlessness (Gill and Brenman, 1959). In addition, changes in thought organization with a shift to primary process thinking occur in this altered state. Several of Gill and Brenman's subjects have reported a feeling of decreased awareness of their bodies and a sense of estrangement from their bodies. Fisher (1963) has reported similar feelings of

depersonalization. Other subjects report a "loss of moorings," and a feeling that things seemed "unreal, dream-like and/or far away." Some subjects' sense of time was distorted in the direction of feeling that hypnosis lasted for only a short period of time. The phenomenon of time distortion has also been noted by Cooper and Erickson (1959).

2. Ego control. Orne (1959), Shor (1959, 1962), White (1941), Weitzenhoffer (1961, 1963), and Gill and Brenman (1959) all recognize that "ego control" is an important variable which should be taken into account in the study of hypnosis. White (1941) reports that Janet describes a patient who reported to him one day that "the suggestion did not take." The patient then stated: "I am ready to obey you and I will do it if you choose: only I tell you beforehand that the thing did not take" (p. 480). White points out that there is a clear distinction in the patient's mind between intentional obedience and unintentional obedience.

Regression and concommitant relinquishing of ego controls is at the very heart of Gill and Brenman's theory of hypnosis. This relinquishing of ego control is never total, however, and "at least some portion of normal ego functioning" is maintained. Despite this marginal maintenance, Gill and Brenman believe that "profound change(s) in the subjective feeling of voluntariness" occur.

Orne (1959) notes that one aspect of the altered subjective state is the inability to resist a cue given by the hypnotist. Shor (1959) amplifies this observation with regard to depth:

> At first, the subject can hardly distinguish whether he is doing things intentionally or whether they are happening all by themselves, i.e., whether his behavior is consciously directed or directed by nonconscious motivation. As the subject sinks deeper it becomes more apparent to him that things occur without his conscious direction, sometimes even contrary to his conscious attempts at resistance . . . [pp. 597-598].

Similar statements have been made by Milton Erickson in his unpublished manuscript (Erickson, M., Rossi, E., Erickson, E., Rossi, S., 1974) as well as in other sources (Erickson, 1939, 1952, 1966).

Weitzenhoffer (1961, 1963) has reported on experiences his subjects have shared with him. Some subjects have described a feeling that they are observing themselves behave or experience phenomena. It is as if they were watching a stranger having these experiences. Other subjects report feelings of resignation and not having enough energy to oppose the suggestion, thus relinquishing ego control to the hypnotist. Weitzenhoffer (1963) describes hypnosis as involving:

> . . . (a) an interpersonal relation, (b) one which is not a normally occurring one and (c) that it is one intentionally entered into and accepted . . . the essence of this relationship is that it is an intentional giving up of intentional activity in favor of intentional control or direction by an external

> agency, normally the hypnotist. (It is an) abdication of intentional behavior . . . a giving up of ego controls . . . [p. 68].

3. Experienced absorption and concentration. In discussing the altered state, White (1941) claims that the hypnotic subject lacks alertness, has a contracted frame of reference, and is literal in the execution of the operator's suggestions. In addition the subject is relatively quiet and will fall off to sleep if not stimulated periodically by the hypnotist. This quiet state is characterized by images and experiences that are more vivid than in the normal waking state.

Sarbin (950) has extended White's theory and redefined it into the language of social psychology. Sarbin emphasizes the concept of role taking and views the altered state as a profound organismic involvement in the role. The deepest forms of hypnosis are seen by Sarbin as submergence of the self to a degree that the "as-if" quality is no longer experienced. Sarbin states: "When the subject takes the hypnotic role . . . a shift occurs from a sharp, alert objective and critical attitude to a relatively relaxed, diffuse and uncritical one" (p. 266). No mechanisms are postulated by Sarbin that explain the resulting perceptual modification.

Shor (1959) also notes a withdrawal of attention from the outside world as hypnosis deepens. In Shor's

terminology, the generalized reality orientation (GRO) fades to a point where it is "relatively nonfunctional." Absorption in one small segment of reality to the exclusion of the rest of the outside world is characteristic of the trance state. Erickson et al. (1974) speak of a similar phenomenon when consciousness is "depotentiated" during hypnosis, thus allowing for attention to be withdrawn inward. As the GRO fades or as consciousness is depotentiated, various mental contents previously excluded can now flow more freely into phenomenal awareness and primary process modes of thought may now reorient the subject. Shor (1959) compares this process to a dream.

Gill and Brenman (1959) also theorize that during the hypnotic regression there is a narrowing of attention during the hypnotic state. However, their explanation of this phenomenon differs from Shor's in that ego-analytic theory (Kris, 1952) is used to explain the described phenomenon.

Likewise Weitzenhoffer (1963), in discussing the trance state, agrees that there is a turning inward of attention. Weitzenhoffer (1961) notes that subjects experience suggested effects as having different degrees of reality. Some suggested effects have an "absolute reality" whereas others have virtually none. In addition, there are various gradations between these two extremes. Weitzenhoffer calls this the dimension of "suggestive involvement."

4. Emotional experience. This author has found few theorists who devote much space to this dimension. White (1941) has mentioned that the hypnotized person sometimes experiences surprise or alarm when he discovers that he is unable to resist the operator's suggestions. Gill and Brenman (1959) have found cases of sudden spontaneous eruptions of intense feeling during induction. Uncontrollable weeping and enactment of waking nightmares on a symbolic level have been witnessed. They attribute these outbursts to changes in the impulse-ego balance during induction. Weitzenhoffer (1961) has noted feelings of anxiety and distress when subjects perceived their hypnotic experience as "something alien to their nature or the world they know." Conversely, Hilgard (1970), Erickson et al. (1974), and White (1937) present subjects who experienced a feeling of pleasant, peaceful relaxation. Gill and Brenman conclude that there is a great variety in the range and form of affect exhibited in hypnosis. This author's own review of the literature would agree with Gill and Brenman's finding.

5. Experiences related to perception of the body. Gill and Brenman (1959) and Brenman, Gill and Hacker (1947) have noted spontaneous changes in body experience in many of their subjects. Others have also discussed or alluded to spontaneous body-image distortions (Klemper, 1954; Weitzenhoffer, 1963; Gubel, 1962). However, Gill and Brenman (1959) have

clearly made the most systematic theoretical expostulation. These changes in body experience are not universally reported in all subjects and tend to be fleeting in nature. Indeed, the range of the quality of experience is wide according to Gill and Brenman (1959). These authors suggest the following groupings:

(a) Changes in size. This refers to radical alterations in size of the whole body. Reports of feeling like a giant, or sensations of shrinking of the whole body or one of its parts.

(b) Equilibrium changes. Reports of dizziness, floating, sinking or rocking are grouped here. Gill and Brenman (1959) have noticed that these sensations bring on a feeling of panic in some subjects. This in turn puts a prompt end to further efforts to hypnotize the subject. In attempting to explain this phenomenon, these theorists cite the work of Schilder (1939):

> Schilder has pointed out the relationship between a sense of emotional security and the willingness (if not eagerness) to abdicate body equilibrium temporarily. He comments that secure children love to be thrown, caught or lifted high into the air . . . our subjects who had to disrupt the hypnosis are those who do not trust that the hypnotist will keep them from falling, as it were, and so have to reinstate with a certain desperation the control over their own ego orientations in time and space [Gill and Brenman, 1959, p. 15].

(c) Position of body in space. This category refers to "as-if" positions. Examples might be: "I feel as though my

arms are sticking out straight in front of me" or "I feel as if my head were hanging way back as if I were looking at the ceiling."

(d) Subjective experience of the loss of the body or of its parts. Subjects sometimes report that they feel as though they were dismembered or can only feel parts of their bodies at the pressure points.

(e) Changes in tactile and temperature sensations. Here Gill and Brenman refer to prickly feelings, feelings of numbness, or extreme sudden feelings of hot or cold.

(f) Changes in distance receptors. Some subjects report that they hear the hypnotist's voice as if it were coming from far away, or right next to the subject's ear. The subject's own voice may be felt as if it were coming from behind the subject.

(g) Alterations in visual functions. Subjects at times report that "things seemed unreal," or "covered by a haze," or "dreamlike."

Gill and Brenman have observed that the above described phenomena exhibit extreme fluctuation and fluidity. A given individual may experience only one of the phenomena or he may experience several. In addition, an individual may at one moment experience things as unreal and have a feeling of floating. At another instance they can discern no differences from the normal waking state. According to Gill and

Brenman, this rapid fluctuation gives further evidence that the subject is experiencing an altered state, for no such fluctuation is found in the normal waking state.

Parallels are drawn by Gill and Brenman to the similarity between several of the above body phenomenon experienced in hypnosis and body phenomenon experienced in other altered states. People who have "watched themselves" fall asleep, or who have observed their behavior while they were intoxicated (alcohol or drug), or while they were suffering from extreme fatigue, have noticed feelings of a loss of moorings and other body-image changes described above.

In addition, Gill and Brenman (1959) believe that the above described body image changes should be "relatively independent of differentiated unconscious content." These theorists believe that the above phenomena are observed in subjects of widely differing temperaments and experience. Thus a more universal character of these phenomena is to be expected.

Finally, perhaps anticipating the criticisms of Barber (1969) regarding uncontrolled experimenter bias in many hypnosis studies, Gill and Brenman (1959) believe that these bodily phenomena are independent of variability in the induction process. They state:

> To be sure, all of these changes of bodily awareness are usually encouraged by the hypnotist in most standard techniques of hypnosis. Nevertheless we have seen them occur sufficiently often in the absence of specific suggestions to be simply the result of the commands of the hypnotist [p. 17].

6. Experienced relationship with the hypnotist.

Different authors have stressed different aspects of the hypnotic relationship. Gill and Brenman (1959) have discussed the relationship in terms of transference. Their theorizing is based on patients in hypnotherapy. These patients exhibited themes of child-parent relations with the hypnotherapist who was seen as a "God," "omnipotent" and all powerful. Ferenczi (Shor & Orne, 1965) distinguished in 1909 between "paternal and maternal hypnosis" and the concommitant differing transference relationships. He states:

> The hypnotist with the imposing exterior, who works by frightening and startling, has certainly a great similarity to the picture impressed on the child of the stern, all-powerful father, to believe in, to obey, to imitate whom, is the highest ambition of every child. And the gentle stroking hand, the pleasant, monotonous words that talk one to sleep: are they not a reimpression of scenes that may have been enacted many hundred times at the child's bed by the tender mother, singing lullabies or telling fairy tales? . . . the hypnotist shall figure as "grown up" to the hypnotic subject; i.e., the former must be able to arouse in the latter the same feelings of love or fear, the same conviction of infallibility, as those with which his parents inspired him as a child [p. 177].

Thus both of these psychoanalytically oriented theorists see the hypnotic relationship from a child-parent regressive

vantage point. Haley (1958, 1963), who attempts to conceptualize the hypnotic relationship from an interactional framework, might be speaking of a similar phenomenon. Haley notes that as the interaction between the hypnotist and subject proceeds, the relationship is increasingly defined as one in which the hypnotist initiates and controls more and the subject responds more and initiates less and less. This puts hypnotist and subject on unequal status or in a "complementary" as opposed to "symmetrical" relationship. While Haley makes no mention of the complementary relationship being similar to the child-parent relationship described by Gill and Brenman (1959), or by Ferenczi (1950), parallels are apparent to this writer. Indeed, most child-parent relationships or mortal-God relationships are complementary relationships, with the parent or God in control.

Shor (1962) also has an aspect of his theory devoted to transference phenomenon. He calls this the "dimension of archaic involvement." During hypnosis, "archaic object relations are formed onto the person of the hypnotist" in some subjects, and a "special hypnotic 'transference' relationship is formed." The reader may note a similarity to Gill and Brenman's transference phenomena, described above. Shor has readily acknowledged such a parallel.

Perhaps at variance with the above, Weitzenhoffer (1963) has described subjective experiences reported by his subjects

which emphasize a certain impersonality acquired by the hypnotist. The hypnotist "becomes just a voice." The subject may hear the hypnotist moving around, and when questioned identify the nature of these sounds in retrospect. However, at the time of their occurrence, they are not consciously identified nor thought about.

As mentioned earlier, the above six categories represent a wide range of overlapping and contradictory theory which has attempted to explain hypnosis. While no one theory is even close to gaining wide acceptance, the above theories, clinical observations and impressions have generated laboratory experiments in attempts to test their validity in a more controlled quantifiable manner. Four research teams will be reviewed in detail in this section: Ludwig and Levine (1965), Field (1965), Ås and Østvold (1968), and Tart (1972). Each has devised his own instrument to systematically examine the specific subjective experiences reported by hypnotic subjects. To these researchers we now turn.

Ludwig and Levine (1965) used a modified form of the Linton-Langs Questionnaire (Linton and Langs, 1962) as their instrument to quantitatively explore the subjective aspect of hypnosis. The questionnaire is composed of 73 items which the authors grouped on an a priori basis into seven scales. These scales are described as follows:

1. Alteration in thinking (13 items)--pertaining to disturbance in concentration, attention, memory, judgement;
2. Disturbed time sense (4 items);
3. Loss of control (16 items)--concerning fears of losing grip on reality, inability to control emotions, loss of self-control;
4. Meaning change (6 items)--feelings of increased ability, understanding, judgement;
5. Affect changes (5 items)--pertaining to mood change;
6. Body image changes (10 items);
7. Somatic changes (11 items)--referring to somatic symptomatology such as dizzyness, numbness, nausea, weakness [p. 146].

All seventy subjects used by Ludwig and Levine were between the ages of 21 and 35. Forty were males; thirty were females. All were "post addict patients" who had not had more than two previous admissions to the state hospital where the research was conducted. A baseline administration of the questionnaire was obtained following a half hour psychiatric information gathering interview. Following this administration the subject was hypnotized by employing a high eye fixation technique with a standard set of challenges. The questionnaire was then readministered while the subject remained in hypnosis. Several items significantly differentiated the baseline from the hypnotic condition. The hypnotized subjects reported that they experienced:

> A sense of unreality, differences in external perception, a feeling of melting or merging into their surroundings, blank minds, strange bodily sensations, loss of control over themselves, a feeling of being controlled by others, a feeling that some parts of their bodies were disconnected, a greater difficulty in moving, a fascination with

> certain thoughts or external stimuli, bodily lightness, an increased sense of happiness, power, and feeling like a different person. In addition, they admitted to a sense of numbness and tingling, dizziness, blurred vision, weakness and a dry and funny taste in their mouths . . . [p. 147].

If the data reported above are broken down into the seven a priori groupings of items or scales, it appears that subjects subjectively experienced a significantly greater alteration in thinking, alteration in time sense, feeling of loss of control, feeling of having acquired greater insights of meaning, change in body image, somatic alterations and significantly lesser change in affect than they experienced in the baseline condition. When the total score on the questionnaire was analyzed between the two conditions the authors argue that the significant difference in total score may be viewed as evidence for the concept of an alteration of consciousness, because the two groups behaved like two different populations, with the hypnotized subject receiving a higher total score.

Ludwig and Levine point out that these findings are of importance to theorists who have stressed a distinction between hypnosis and normal waking consciousness. Orne (1959), as the reader may recall, stressed such a distinction. He viewed the subjective experience of hypnosis reported by his subjects as evidence that the hypnotic state is discontinuous from normal waking experience. Gill and Brenman (1959) likewise see the hypnotic state as discontinuous, and

cite several criteria such as change in self-awareness, etc. which find support in the findings of Ludwig and Levine. Finally Rapaport (1951), who sees hypnotic cognition as differing from other forms of cognition, also receives support from Ludwig and Levine.

Perhaps of greatest importance, however, is the fact that Ludwig and Levine demonstrated the feasibility of doing controlled quantifiable laboratory research in the area of the subjective experience in hypnosis. Various flaws can be found in their design--some of which will be discussed in a subsequent section. However, a pioneering effort was successfully completed and led the way to further studies in the area.

Field (1965) attempted to construct a multiple item inventory of typical hypnotic experiences and to determine which items correlated significantly with an objective criterion measure of hypnotic depth (Harvard Group Scale of Hypnotic Susceptibility, Form A or HGSHS:A). Field developed a pool of three hundred items describing subjective experiences during hypnosis. These items in part come from the theoretical writings and personal communications of Gill and Brenman (1959), Orne (1959), Weitzenhoffer and Sjoberg (1961), and McCord (1961). Sixty-nine male and thirty-three female subjects received a standard tape recorded induction. After the administration of the HGSHS:A the 300 item scale

was administered, plus several other questionnaires. The mean score on the HGSHS:A was 5.42 with a standard deviation of 2.83 and a range of 1 to 11. A median division of scores placed 48 subjects above the median with scores of 6 to 11, while 54 subjects were below the median, with scores of 0 to 5.

A group of 38 items was extracted from the large pool that correlated highest with the HGSHS:A. Thus, a subjective measure of hypnotic depth was extracted. These 38 items have subsequently been cross validated and factor analyzed by Field and Palmer (1969). Seven factors were extracted in an attempted to discover the underlying dimensions:

Factor A: Unawareness. This factor accounted for 7% of the variance. A high score on this factor indicates that the subject is:

> Oblivious to external stimuli and unaware of the outside world. He feels apart from everything, is unconscious of his surroundings and does not know where he is. He is unaware of the events that mark the passage of time, just as he is oblivious to E's voice and to his own surroundings . . . This detached distance is also reflected in his feelings that the experiment happened a long time ago, as if the stimuli from the experiment had not registered as intensely with him as they had with other subjects. His attention is not fixed on external events, but is deeply absorbed by the hypnotic process [p. 55].

Conversely, individuals with low scores on this factor tend to maintain their vigilant attachment to reality.

Factor B: Challenge. This factor accounts for 8% of the variance and is heavily loaded with Stanford challenge

items. The individual who passes these items also states that:

> He could not have stopped doing things, was not able to overcome the suggestions, could not have awakened any time he wanted, and did not come out of the trance before the hypnotist gave this suggestion [p. 56].

Thus this factor loads heavily on a feeling of compulsion and loss of control.

Factor C: Enthusiasm. This factor accounts for 5% of the variance. The high scorer states that he was "delighted and amazed" by his experience. Hypnosis was a "strange and mysterious experience" and the subject felt "unusual and uninhibited." Thus hypnosis was a positive emotional experience.

Factor D: Drowsiness. This factor accounts for 4% of the variance. It is composed of items that describe a cognitive clouding of consciousness as opposed to perceptual unawareness emphasized in Factor A. Subjects report that they momentarily fell asleep and that hypnosis felt like the sensations felt just before waking from sleep. Items describing a strange, dazed or unusual experience also load highly on this item.

Factor E: Subjective conviction. This factor accounts for 4% of the variance. Field and Palmer note that the identification of this factor is only tentative. They describe this factor as joining "a self-rating of deep or

medium hypnosis with feelings of inability to resist . . ." (p. 58). The high scorer may have reasoned that since he could not have resisted he must have been deeply hypnotized, while the lower scorer denies influence or loss of control and therefore denies hypnosis.

Factor F: Ideomotor-posthypnotic suggestibility. This factor accounts for 3% of the variance. It also loads heavily on Stanford items (the two posthypnotic items and three of the four ideomotor items). Inventory items loading on this factor are feelings of automatic action and drowsiness. Field and Palmer conclude that "while feelings of loss of control are associated with passing the challenge items, a sleepy automatic sensation accompanies response to the ideomotor and posthypnotic items" (p. 58).

Factor I: Hypnotic depth. This final factor accounts for 16% of the variance. Inventory items emphasizing a feeling of absorption, unawareness, compulsion and unusualness load the highest on this factor.

In sum, it would seem that subjective items correlating with an objective measure of depth describe a subject as becoming more absorbed, more detached and less aware of his environment. In addition he feels detached from the control of his movements and experiences. An automated and compulsive quality is reported. Finally the subject reports a discontinuity from normal experience. He feels puzzled, amazed and strange.

Some items that did not correlate with depth have been isolated for discussion by Field (1965). In general he has found that items dealing with emotion and motivation failed to correlate with hypnotic depth. He notes that items dealing with "fear of danger in the experiment, fear of talking about private matters and feeling worried or timid showed no important relationship to HGSHS:A score" (p. 246). Items dealing with annoyance and suspicion yielded equally unimpressive correlation with depth. Nor did motivational items correlate well with depth. For example, a false answer to "I tried very hard to become hypnotized," showed a negligible correlation with depth over the whole group. Indeed, Field notes that "paradoxically the very good subjects tended to deny that they tried hard while many of the very poor subjects claim they did" (p. 246). Role playing items such as "I felt like I was playing a role or taking a role" or "Sometimes I acted as if I experienced something but did not really feel it" also correlated negligibly with depth. Field concludes that while these results do not contradict role playing theories of hypnosis (e.g., Sarbin, 1950; White, 1941) they indicate that conscious feelings of mere surface compliance with suggestions occur about as often in good as in poor hypnotic subjects. Finally Field notes that items dealing with unusual bodily sensations are only tenuously related to objective measures of hypnotic depth

although they do occur in a substantial minority of subjects.

While other work has been done with the Field Inventory, this research will be reserved for a later section. It seems clear, however, that the initial research from the Field Inventory indicates that behavioral and subjective features of hypnosis have something in common. Although the specific nature of this relationship remains to be mapped by future researchers, a beginning has been made. Dimensions that reflect the degree of awareness-unawareness, and waking-drowsiness have been isolated. In all likelihood these dimensions give support to altered state theories. The dimensions of "challenge" and "ideomotor-posthypnotic suggestibility" likewise give support to those theories that posit a giving up of control. Motivational and role playing theories have received the weakest support from this research. However, no deeply hypnotized subjects were included in these studies and therefore much evidence remains yet to be gathered.

Ås and Østvold, like the previous two research teams, have embarked on research that was first motivated by Orne's (1959) suggestion that the essence of hypnosis may be found in the subject's subjective experience. The first investigations conducted by Ås in the early 1960's focused upon trance-like experiences and behavior in everyday life, such

as absent-mindedness and dreaminess. These studies (Ås, 1962a and b; Ås, O'Hara, and Munger, 1962) attempted to find correlates between these experiences and hypnotic susceptibility. In 1968, Ås and Østvold published their first and to date only piece of research on the subjective experience of hypnosis. Fifty female university subjects were individually hypnotized using a Norwegian version of the Stanford Hypnotic Susceptibility Scales. No depths were reported. Immediately following the hypnotic session the subjects were interviewed about their subjective experiences during hypnosis. These experiences were rated by the examiner on a twenty-seven item scale which was composed of experiences one would expect based on an analysis of contemporary theories of hypnosis. Following factor analysis, three factors emerged from the original twenty-seven experiential items.

The first factor was labeled the experience of trance. Included in this factor are experiences of "loss of volition, passivity, unreality, and lack of location" (p. 35). Other experiences listed include: "experienced inability to withstand suggestions, the feeling of being absorbed, experiences of dissociation and lowered conscious awareness" (p. 35).

Factor two has been labeled experience of ego control. Included in this factor are: "experiences of having

maintained self-control, experiencing disturbing thoughts and ideas, and an attitude of 'observation from without'" (p. 35). Other high loadings represent "experiences of ability to withstand suggestions, noticing stimuli outside the hypnotic situation and a more active attitude in general" (p. 35).

Factor three was labeled a desire for regression. Included here are:

> Experiences of different movements such as sinking, falling, etc., a wish to "let go," a wish for surrender, a wish to sink down into a total relaxation; combined with an experience of trust in the hypnotist, absence of an active attitude, and absence of concentration [p. 35].

Each of the 27 items making up the three items factors were correlated with the total score on the Stanford Scale. All but three correlated significantly in the expected direction. Ås and Østvold interpret their results as demonstrating that the intensity of subjective experiences are "cearly related" to the depth of hypnosis reached by the subjects. When the factor scores were correlated with the Stanford Scale, the following findings emerged:

1. The "experience of trance" factor is related highly to depth of hypnosis. Thus, as depth increases, the subject experiences greater loss of volition, passivity, loss of contact with reality, and location. Suggestions seem irresistible and the field of attention narrows. Ås and Østvold suggest that these findings lend support to the

altered state theories such as those of White (1941) and Shor (1959, 1962) who discuss the fading of the generalized reality of orientation (GRO) and Weitzenhoffer (1963) who defines trance in terms similar to the experience of trance factor.

2. The "experience of ego control" factor negatively correlated with obtained hypnotic depth as measured on the Stanford Scale. Thus, those subjects who were aware of having control achieved lighter trances while those who were not aware of control tended to be more deeply hypnotized. Again, no specific depths are reported by Ås and Østvold. These researchers point out that this negative correlation supports the theoretical views of Gill and Brenman (1959), who posit the relinquishing of ego control as a central facet of their theory. Ås and Østvold note, however, that the subject does not experience an actual relinquishing of control; he simply has no awareness of control. Experiences of directly relinquishing control were only infrequently reported. These researchers sum up this interesting finding with a call for additional research:

> Could it be that the hypnotizable person is able to relinquish control, but has no special awareness of so doing; that a real ability to regress presupposes a lack of preoccupation with control, while the subject not so easily hypnotized becomes aware of his control and experiences that he can withstand the suggestions? These problems ought to be clarified in further research [p. 37].

If this hypothesis is true, then Wietzenhoffer's (1963) theory of the subject actively and intentionally giving up control to the hypnotist must be revised.

3. The third factor, "desire for regression," is present in the subject's experiences during hypnosis, but has only an (.07) correlation with depth. Thus, experiences such as the wish to let go, the wish to surrender, the desire to relax totally, the experience of floating and falling and the experience of trust in the hypnotist occur during hypnosis, but these experiences do not correlate with depth. It would seem that theories such as those of White (1941) and Sarbin (1950) which posit positive motivation (the wish to behave like a hypnotized subject) are not supported by Ås and Østvold's data. However, Milton Erickson's clinical impressions (Haley, 1967) tend to be confirmed by this data. For years Erickson has maintained that positive motivation is not necessary for trance induction. Positive motivation is often found in the hypnotic situation, Ås and Østvold conclude, but it has little to do with actual hypnotizability.

Finally, Tart (1972) has attempted to chart the subjective experience of one subject at various levels of depth ranging from light to an extreme depth which extends beyond the "plenary" level of trance described by Erickson (1952). This is a significant advance over the above studies of Ludwig and Levine (1965), Field (1965), and Ås and Østvold (1968)

in several respects. These studies did not use as deeply hypnotized subjects as Tart nor did they parcel out the subjective experiences that occur at specific depths of hypnosis. They simply reported general correlations with depth without indicating specific subjective phenomena at each specific depth. In the case of Ås and Østvold, this is especially true. No depths are reported by Ås and Østvold (1968) so it is difficult to determine the range of hypnotic depth to which their findings can be applied.

In the procedure used by Tart only one subject was hypnotized. His subject, "William" was described as a 20 year old male college student who was "extremely intelligent, academically successful, and well adjusted." William was taught the Extended North Carolina Scale, a self report depth scale. He was then hypnotized to depth A where he then reported his subjective experiences. Following this reporting, which was done while still hypnotized, William was then asked to go deeper and make a new report. The specific definitions of the various depths on the Extended North Carolina Scale may be found in Tart (1972). However, for our purposes it will suffice that zero corresponded to the normal waking state. One to 12 corresponds to a very light trance. At a depth of 20 the subject must feel "very definitely hypnotized" and by a depth of 40 he experiences "a very deep hypnotic state." Depths deeper than 40 are not

defined by the author, nor are they defined to the subject. However, the possibility of proceeding beyond 40 is permissible.

Twelve subjective "effects" are reported by William which vary with depth:

1. Physical relaxation. Relaxation markedly increases with depth and William very quickly became "extremely relaxed." Beyond a depth of 50, however, this dimension no longer became relevant for the subject no longer identified with his body. His body was described as "just a thing, something I've left behind." As Tart points out, "things" do not have a dimension of relaxation.

2. Blackness of the visual field. As William went into hypnosis there was a linear increase up to about 60 in blackness (as opposed to grey at lighter levels). The field simply became blacker and blacker. Beyond the depth of 60:

> The field continues to become blacker as he goes deeper but it is in some sense "filled," that is, there is a sense that there is some kind of form(s) filling his visual field even though he is not perceiving any particular forms. Beyond 60 he is not particularly aware of any visual sensation unless his attention is drawn to it by the experimenter [p. 469].

3. Peacefulness. This feeling also increases linearly from the beginning of the hypnotic state through about 60. Beyond this point peacefulness is no longer applicable as a concept, for there is no self.

4. Awareness of environment. This dimension refers to awareness of sounds occurring in the experimental room, such as air currents, etc. William describes his awareness receding rapidly in a roughly linear fashion. At approximately 50, the only awareness of the surrounding environment is that of the hypnotist's voice. This lack of awareness remains constant with increasing depth.

5. Sense of identity. Up to a depth of 30 a sense of identity and body image is maintained:

> . . . But as he reaches a depth of about 30 he reports that his identity is more centered in his head; that is, his identity is dominated by his feelings of his head and his mind [p. 471].

This feeling amplifies itself until a depth of 80 or 90, at which point the idea of "William" no longer exists. Beginning at 50, he begins to experience a "potential" or another identity. That is, ". . . he doesn't feel identified as any specific person or thing but only as the steadily increasing potential to be anything or anyone" (p. 471).

6. Awareness of the joke. This phenomenon only begins at a depth of 50, reaches its height at 70 and decreases to a point of disappearance at 90:

> The joke is that William should engage in strange activities like deep hypnosis . . . in order to alter his state of consciousness; some "higher" aspect of his self is amused by all this activity, and William himself becomes aware of this amusement [p. 471].

7. Sense of potentiality. This dimension manifests itself as a chant or humming sound. While this starts off

at zero level, it is not until 50 that it becomes identifiable. This chant "is identified with the feeling that more and more experience is potentially available." From this point on, the specific form of the chant is lost. However, the "sense of potentiality" increases linearly until about 80 where leveling occurs. At 80 William felt that an infinite range of experience is available.

8. Experimenter's identity. This factor changes direction with depth. Up to 30, William became more aware of the hypnotist's identity. From this point on, the hypnotist seemed to become more and more distant and remote. Finally the hypnotist lost all identity and became just a voice. At the very deepest level William described the hypnotist as "just an amusing, tiny ripple at the far fringes of an infinite sea of consciousness" (pp. 471-2).

9. Rate of time passage. With increasing depths (up to 40) time seemed to pass slower and slower in a linear fashion. Beginning at 50, time is no longer a meaningful concept. Experience becomes timeless and things have neither a duration nor a place.

10. Feeling of oneness. This dimension is defined as a feeling of being one with the universe. This is not an ordinary feeling for William during waking consciousness. However, the feeling increases linearly along the whole depth range.

11. Spontaneous mental activity. This factor deals with the amount of conscious mental activity present beyond that suggested by the hypnotist. This spontaneous mental activity steadily decreases until, at a depth of 90, the activity is no longer present.

12. Awareness of own breathing. Up to a depth of 50, breathing is felt to become deeper and deeper. This suddenly changes and breathing is perceived as becoming extremely shallow and almost imperceptible. No change in perceived breathing occurs with further depth of trance.

Summarizing the data, Tart observes that most effects are linear within the ordinary range of light to deep hypnosis (1-40). The exceptions are "experimenter identity" which is a curvilinear function and "physical relaxation" which is noncontinuous. However, if the entire depth range (0-130) is considered, a variety of functions are exhibited. Some effects, such as "awareness of breathing" and "being in time," are step functions. Others such as "awareness of the joke" show rapid increases and decreases from zero. "Experimenter identity," "sense of potentiality," "awareness of the environment" and "visual blackness" plateau after an initial linear increase or decrease. Finally, two functions, "peacefulness" and "physical relaxation," disappear by simply becoming meaningless. Thus, linearity cannot be assumed when one is investigating the subjective experience of hypnosis.

Another contribution of Tart's research is his exploration of a new level of depth, a level which previous investigators of subjective experience have thus far neglected. This depth (70-130) seems to be characterized by no awareness of: (1) the physical body, (2) personal identity, (3) time, (4) any discrete "thing" or sensation, or (5) the outside environment, except for the depersonalized voice of the hypnotist.

Obviously the use of a single subject makes it difficult to make generalizations from Tart's data. The question of whether these subjective hypnotic phenomenon will be found across subjects remains open, awaiting further research. Tart has indicated that he plans to investigate such a question in the future.

The other studies mentioned above also are based on limited populations. Ås and Østvold (1968) only used female subjects. Would male subjects have provided different data? Similarly, Ludwig and Levine (1965) used a restricted population of post-addicts. Conversely, Field used a population of "normals." What effects do these variables have on the data? There is evidence in the literature suggesting that different groups experience hypnosis differently. It is to these data that we now turn.

II. Individual Differences in the Subjective Experience of Hypnosis

A number of studies in the literature directly or indirectly suggest that different populations of subjects should experience hypnosis differently. Such evidence may be found in the observations of theorists who postulate a continuation of essential aspects of ego structure into the hypnotic state. As noted above, Binet and Féré (1888) observed differing types of hypnosis (active and passive) as far back as the 19th century. In 1937, White (1937) isolated these two groups and found personality traits that correlated with them. The active alert subjects had "especially strong tendencies in every day life toward deferential and affiliative behavior" (p. 288). These were the characteristics which they also displayed during the hypnotic session. "The passive subjects received extreme ranks on a group of variables which implied habitual anxiety in stressful situations" (p. 288). White has hypothesized that the lethargic hypnotic behavior observed in these subjects is an escape, by the mechanism of withdrawal, from the anxiety provoking session. From this description, it would then seem that personality traits from the waking state extend into the hypnotic state. That is, the passive subjects could be distinguished from the active subjects on the variable of need for affiliation, and these same passive

subjects seemed to be less affiliative within the hypnotic state.

Gill and Brenman (1959) mention the above work of White (1937) and speculate that the subject's life history may determine certain ideosyncratic and unexpected responses to certain hypnotic suggestions. Using the terminology of these ego-analytic theorists, hypnosis is characterized as a particular kind of regression in that the usual organization of the psyche is not ablated. In other sections of their book, Gill and Brenman (1959) spectulate that body image changes that occur during hypnotic induction:

> . . . do not appear to have an important personal or individual symbolic meaning, but have rather a more universal character that appears to be relatively independent of differentiated unconscious content [p. 18].

Thus, it would seem that Gill and Brenman (1959) argue for both a universal core experience of hypnosis and certain ideosyncratic hypnotic experiences which may be determined by the life experiences of the subject.

Weitzenhoffer (1961) also agrees that during hypnosis there is a "continuation of the personality as a whole or again of certain essential aspects of the ego structure" (p.87). He notes that the subject's "innate and acquired capacities and defenses play a major role in the determination of the response to suggestions" (p. 89). Weitzenhoffer's position is that some aspects of personality

are retained during hypnosis and that these influence individual differences observed in hypnotic trance.

Weitzenhoffer (1963) continued this line of theorizing regarding ego defenses. He distinguished five groups of commonly found subjective experiences of ego control in hypnosis reported by his subjects. The first group, called the "onlookers," felt that they had no control over their behavior. A second group reports that they experienced phenomena and behaved in various ways in spite of struggling to oppose these acts. A third group acknowledged having experienced certain phenomena but claimed that at any point they could have prevented these phenomena from occurring had they desired to do so. Also included in this group were those subjects who believed that they acted voluntarily. A fourth group stated that they voluntarily acted in certain ways at first, but that the behaviors soon acquired autonomy of their own. Finally, a fifth group acknowledged experiencing various unusual phenomena but denied that they were hypnotized. Thus, while all groups were hypnotized, ego defenses determined the perception of the hypnotic experience according to Weitzenhoffer.

Hypnotically induced dreams are also presented by Weitzenhoffer (1963) in his attempt to illustrate that different subjects perceive hypnosis differently. Some subjects dream that they have been rendered powerless in a

sado-masochistic fashion, e.g., themes of being tied up, strapped to an electric chair awaiting execution, etc. Others dream of their lack of power and their dependency upon the goodwill of the hypnotist by dreaming that they are tiny babies being cared for. More neutral dreams, such as taking an adventure, voyage, etc. are also reported. Weitzenhoffer sums up his observations by noting that the experience of hypnosis is by no means a trivial event for the subject. He states:

> If we can further assume the meaning of hypnosis, as reflected by dreams, to be related to the reason why a person goes into hypnosis and to the ways the person responds once hypnotized, it would appear that there may be a large variety of reasons all intimately related with the basic dynamics of his personality [p. 51].

Thus according to Weitzenhoffer different subjective experiences and perceptions of the hypnotic experiences are related to the basic dynamics of the personality.

This theme that there are individual differences in the subjective experience of hypnosis is given support from several laboratory studies. In the previously mentioned study by Ludwig and Levine (1965), the data seems to indicate that individual differences are present in the subjective experience of hypnosis. The reader may recall that their subjects were given the Linton-Langs questionnaire prior to hypnosis and during hypnosis itself. It was found that there was no significant correlation between the total score

on the questionnaire and depth of hypnosis as measured by the subjects' suggestibility scores. There was, however, a statistically significant correlation between the subjects' suggestibility scores and the changes in Linton-Langs scores from baseline to hypnotic condition. That is:

> Subjects may score significantly higher on all scales while in hypnosis but they remain at about the same relative rank in the scoring as compared to other subjects. Subjects who obtain low scale scores and subjects who obtain high scores in the baseline condition will tend to obtain low and high scores respectively in hypnosis [p. 151].

Thus, these data continue to support the argument that all subjects do not experience hypnosis in the same way.

Field and Scott (1969) and Field (1973) have also found experimental evidence for individual differences in the subjective experience of hypnosis. Both studies compared different groups in their responses to the Field (1965) inventory. Field and Scott (1969) compared the hypnotic experiences of alcoholics and college students and found that alcoholics tended to be more alert and aware of their surroundings than did the college subjects. They also expressed more enthusiasm about their hypnotic experiences than did the college students. No differences were found in the hypnotic depth of these two groups. Field (1973), in the first of two studies reported, found differences between a group of male hospitalized psychiatric patients and the group of college students used in the Field and

Scott (1969) study. The psychiatric patients differed in their enthusiasm for hypnosis. Their involvement had both positive and negative components suggesting an ambivalent reaction to hypnosis.

In the second study reported by Field (1973), a group of field-independent subjects were compared with a group of field-dependent subjects. It was found that the field-independent subjects differed from the field-dependent subjects on the Field inventory factor dealing with issues of control. The field-independent subjects reported that they could have awakened, could have stopped doing things, could have stopped movements, etc.; whereas the field-dependent subjects did not report such feelings. Field has hypothesized that personality and style of defense accounts for these differences. We shall return to these findings in the following section. However, for our purposes here, these findings offer further evidence of differing subjective experiences between groups during hypnosis.

Finally, the recent study of Freundlich and Fisher (1974) provides more evidence to the above argument for differing subjective experiences. Freundlich and Fisher attempted to discern whether there were differences in the style of hypnotic response between males and females, and such differences were indeed found. During hypnosis, body boundaries became diminished with increasing depth in females. The

opposite was found to be true in males. Their boundaries tended to become more augmented. In line with these findings these researchers discovered that males tended to describe hypnosis as a process which they allowed to happen. Thus, control was retained by these male subjects. Conversely, women described the experience as one in which control passed to the hypnotist as they became more deeply hypnotized.

By way of summary then, this section has cited sections of the literature which point in the direction of differing subjective experiences of hypnosis. Put in a different way, there may be different styles of experiencing the hypnotic process which may be related to personality styles, sex or psychopathology. A further amplification will follow in the next section which outlines the proposed research to be done.

III. Proposal

Let us return to the differences between field-independent and field-dependent subjects found by Field (1973). The concept of field independence-dependence was introduced into the literature by Herman Witkin in his investigations of the relationship between perception and personality. Field independence-dependence refers to the ability to isolate elements in a perceptual field that are embedded within the total field. Witkin, Lewis, Hartzman, Machover, Meissner

and Wagner (1954) have found that field independence-dependence is a stable trait in individuals and have found personality correlates with field independence-dependence. Control of impulses, activity-passivity, perception of body image, self concept, style of ego defenses, etc., all have been associated with field independence-dependence by Witkin et al. (1954) and Witkin, Dyk, Faterson, Goodenough and Karp (1962). From these writings, additional research has been generated to distinguish the apparently differing cognitive styles of field-independence and field-dependence.

Witkin, et al. (1962), for example, have found that field-independent subjects tend to use ego defenses of isolation of affect and intellectualization. Their cognitive style, like their perception, tends to be analytical and overideational. In contrast, field-dependent subjects tend to rely on the more primitive ego defenses of denial and repression. Thus, their cognitive style like their perception, tends to be more global and diffuse.

A number of more recent studies have tended to support the above distinctions made by Witkin et al. (1954) and Witkin et al. (1962). Minard and Mooney (1969) found that field-independent subjects tended to use isolation of affect. Uhlman and Saltz (1965) also found that field-independent subjects tended to use isolation of affect, and added that field-dependent subjects tended to use repression. Schimek

(1968) found evidence of the use of intellectualization and isolation of affect in field-independent subjects while Gleser (1971) and Bogo, Winget and Gleser (1970) found that field-independent subjects used the defense mechanism of projection, as opposed to denial. Finally Duvall (1969) found that field-independent subjects were more prone to be vigilant, while field-dependent subjects tended to be repressors and deniers.

Witkin et al. (1962) have dichotomized field independence-dependence on an interpersonal level as well. Field-independent subjects are seen as more active and assertive, whereas field-dependent subjects are more passive, dependent and conforming. A number of behavioral studies seem to support this distinction (Allen and Crutchfield, 1963; Solar, Davenport, and Bruehl, 1969; Mausner and Graham, 1970; Cooper, 1964; and Randolph, 1971). However, studies which examined this dimension by using self reported attitudes of subjects tended to give equivocal support to this hypothesis. (Rudin and Stagner, 1958; Clark, 1968; Willoughby, 1967; all tend to support Witkin's distinction whereas Elliott, 1961; Trego, 1971; Rotter, 1966; and Pottinger, 1971 have found no significant relationships that substantiate Witkin et al. (1962.)

Newey (1975) has summarized the above results and has concluded that "the central distinction between the two

styles is one of basic life direction towards independence and mastery vs. being in relationships with others" (p. 14). He goes on to hypothesize that the field-independent subject is more task and achievement oriented whereas the field-dependent subject is more oriented toward affiliation. The negative connotation of dependency, passivity, etc. may then be avoided. Studies by Crandall and Sinkeldan (1964), Rubie and Nakamara (1972), Justice (1969) and Barrett and Thompson (1967) support such a proposed distinction.

The above evidence seems to support the contention that field independence-dependence relates to character style. Thus, Field's (1973) findings which indicate that field-independent subjects separate on the issue of subjective feelings of being in control is not surprising in light of the above data. Field-independent subjects in general seem to have a greater need to maintain control and to strive for independence and mastery. In addition, both the theoretical and experimental literature as cited above support the contention that the normal ego structure is not completely ablated during hypnosis, and thus we should expect continuity between the normal character style and the hypnotic condition.

Unfortunately, several dimensions were not adequately controlled by Field (1973). No mention is made as to the depth of hypnosis achieved by his subjects in either study (Field, 1973; Palmer and Field, 1971) where his data were

first reported. Thus the question arises as to whether Field's field independent-dependent distinction regarding control holds true at various depths. This question is especially relevant in light of Tart's (1972) preliminary findings suggesting that at certain depths, some hypnotic dimensions are sometimes no longer relevant. A second flaw in the Field (1973) study is that the variable of sex was not controlled. In light of the evidence previously alluded to in Freundlich and Fisher's (1974) study, this variable must be controlled. To the issue of sex as a variable we now turn for a more detailed treatment.

Freundlich and Fisher (1974) point out that the idea of a basic sex difference in adaptation to hypnosis had been gradually developing in the literature. Several studies are mentioned by these researchers which establish this basic sex difference. For example, Hilgard (1965) found that attitude toward hypnosis helped predict hypnotic susceptibility in women but not in men. Palmer and Field (1971) found similar sex differences using the variable of interference proneness. Palmer and Field (1968) found that the ability to conjure up visual images predicted hypnotizability in women but not in men. Bowers (1971) found similar sex differences using the variable of creativity. Hilgard and Lauer (1962) and Lang and Lazovik (1962) have also found different personality correlates with hypnotizability in men

and women. While Hilgard (1965) concludes that both sexes are equally hypnotizable, Shor, Orne, and O'Connell (1966) and Bowers (1971) found that women were more susceptible if susceptibility is defined as accomplishing more difficult tasks in hypnosis such as hallucinations. Ås (1962 a and b) has also found differing correlates with hypnotizability when sex is a variable.

Unfortunately few of the above studies have been cross validated. The history of hypnotizability research is such that few findings have withstood the test of cross validation (Barber, 1965). However, Freundlich and Fisher's (1974) research is a cross validation of Fisher's (1963) study. Sex differences were successfully cross validated in Freundlich and Fisher's (1974) study which seems to indicate that hypnotic susceptibility is negatively related to body boundary definiteness in men but not in women. Thus, the possibility of a basic sex difference in adaptation to hypnosis cannot be ruled out on the basis of the literature, and indeed some cross validated data exist within the literature to support such a contention.

To understand the study proposed in this dissertation, a comparison of Field's (1973) findings on personality variables must be made with Freundlich and Fisher's (1974) study on sex as a variable. In essence, Freundlich and Fisher conclude that men and women differ in their adaptation

to being hypnotized. Men seem to stress that they voluntarily allowed the process to happen. Freundlich and Fisher hypothesize that men are more threatened by the body changes which occur in hypnosis. This may be due to the emphasis in the SHSS:A induction procedure which emphasizes the giving up of muscular control. If we assume that men in general are more concerned about muscular control than women, then such an induction would be more threatening to men. A second hypothesis offered by Freundlich and Fisher is that women in everyday life are more prone to alter the appearance of their body using makeup, wigs, etc. and are therefore less threatened by the body changes which occur during hypnosis. In either case, increasing depth of hypnosis was paralleled with increasing boundary augmentation in men, while women's boundaries diminished. At the same time subjective reports of men emphasized maintenance of control, whereas the subjective reports of women emphasized that they were submitting to the control of the hypnotist.

Similar issues of maintaining control were found by Field (1973) in his field-independent subjects. These subjects, in contrast to field-dependent subjects, emphasized that they also voluntarily allowed hypnosis to proceed, and at any time they could have asserted control had they wished to do so. Field's sample, unfortunately, did not control for sex or depth. The question immediately arises as to how

these two studies can be reconciled. That is, if females, as a group, are not threatened by the loss of control implicit in hypnosis, then how do female-field-independent subjects respond to the process of hypnosis as opposed to female-field-dependent subjects? In short, how do the variables of sex and field independence-dependence interact? It would seem reasonable to assume that female and field-independent subjects would show more concern about loss of control than female field-dependent subjects. One aspect of this study is to investigate this speculation.

A second question immediately follows. What relationship do these two variables have at varying depths of hypnosis? It would seem reasonable to assume that the female field-independent and female-field-dependent groups would have the most similar subjective experiences at a light level of trance where autonomy is least threatened. Likewise, they would be expected to differ the most at deeper levels where autonomy is threatened the greatest. This speculation will also be tested.

Thus the proposed research begins from the premise that there is mounting evidence in the literature that the subjective experience of hypnosis is not a unitary phenomenon. This dissertation will attempt to make a contribution to the literature by further delineating the expected differences between female-field-independent and female-field-dependent

groups. These differences will be mapped at several depths of hypnosis. In so doing, a step will hopefully be made in the direction of a more unified and more complete theory of hypnosis which takes the differentiated subjective aspects of hypnosis into account.

CHAPTER III

RESEARCH PLAN

The research will be carried out with female undergraduates. Thus sex will be controlled as a variable. The general plan of the study is to gather a total of 60 subjects, 30 of which are field-independent and 30 of which are field-dependent. Within each of these two groups, one-third must be lightly hypnotized, one-third deeply hypnotized and one-third must be hypnotized to a medium depth. Thus six groups in all will be collected. The various hypotheses will be tested by making between and within group comparisons of the subject's responses to a questionnaire of subjective experiences.

I. Subject Selection

Female undergraduates from The University of Tennessee will be asked to volunteer for an experiment involving hypnosis. An unknown but probably large percentage of these subjects will receive experimental credit in their introductory psychology class as a reward for participation. A smaller percentage will be drawn from volunteers in the undergraduate university population at large. These subjects will receive no credit for participation.

The Group Embedded Figures Test will be administered to the subjects by one of two male hypnotists prior to hypnosis. The subjects will take the test as a group. The test will be scored by the experimenter's wife. Those subjects achieving a score of 0-6 will be labeled field-dependent; those achieving a score of 13-18 will be labeled field-independent. Subjects scoring between 7 and 12 will be excused. Newey (1975) has followed a similar procedure using 173 undergraduate University of Tennessee females. His data indicates that scores of 0-6 and 13-18 fall into the bottom and top 30% of the female undergraduate population he sampled at The University of Tennessee.

II. Procedure

Those subjects who meet the above criterion on the Embedded Figures Test will then be hypnotized by one of the two male hypnotists. The two have no knowledge of the test results at the time of the hypnotic induction. The two hypnotists will be the author and his assistant who is a first-year graduate student in clinical psychology at The University of Tennessee who has been trained in hypnosis induction procedures. A standard eye fixation technique will be used for induction purposes. Appendix A contains an outline of the general eye fixation technique to be used. It would be an impossible task to outline the various

deviations the two hypnotists will make from this induction procedure as a result of behavior exhibited by the subject. In general, however, this outline will be followed. Deviations will occur when comments are made regarding the subject's ideosyncratic movements or behavior. As an example, the hypnotist might comment on the subject's behavior of sinking down in the chair, or her heightened breathing rate. Not all subjects will exhibit such behaviors, thus slight variations in the hypnotist's "patter" will be made to facilitate the induction.

Following induction, and the reaching of maximum depth by the subject, trance will be terminated by suggesting to the subject that she will awaken as the hypnotist counts backwards from 10 to 1. Once awake and reoriented, the subject will be asked to fill out the subjective questionnaire of hypnotic experiences prepared by the experimenter. (See Appendix B.) This questionnaire is a compilation of adapted items from other questionnaires in the literature. (Field, 1965; Ås and Østvold, 1968; Ludwig and Levine, 1965) as well as items devised from various theories of hypnosis which were not included in the above mentioned questionnaires. Specifically, items have been added from the theories of Brenman, Gill and Hacker (1947); Gill and Brenman (1959); Sutcliffe (1961); and Weitzenhoffer (1963).

The hypnotists will refrain from answering any questions or making any comments to the subjects regarding their hypnotic experiences until the questionnaire is completed. A post hypnosis interview will be conducted following administration of the questionnaire. These data will not be formally scored, but will be utilized in helping to interpret more fully the questionnaire data. No subject will be excused until the hypnotist determines that the subject is fully reoriented and has completely returned to the normal waking state.

The Handler Deepening Steps (Handler, 1975) will be used to separate the subjects into light, medium and deep hypnosis, groups. (See Appendix A.) These criteria are adapted from the LeCron-Bordeaux Scoring System for Indicating Depth of Hypnosis (LeCron and Bordeaux, 1947). Subjects who fail any deepening steps up to and including item 4 will be considered lightly hypnotized. Subjects who pass deepening steps 1, 2, 3 and 4 but fail any item up to and including item 9 will be considered to be in the medium hypnosis group. Subjects who pass the first nine items or all ten deepening steps will be considered deeply hypnotized.

III. Hypotheses

The following specific hypotheses will be tested in this experiment:

Hypothesis 1: The female-field-independent group will perceive hypnosis as a challenge to its self control and will emphasize that control and autonomy is maintained during hypnosis. Coversely, the female-field dependent group will perceive hypnosis as a process of losing autonomy and self control. These subjects will acknowledge transfer of control to the hypnotist.

Hypothesis 2: The female-field-independent group and the female-field-dependent group will differ least at a light level of trance where autonomy is least threatened, and will differ most at a deep level of trance when autonomy is threatened to a greater degree. This will be measured by comparing the responses to all items. It is predicted that with increasing depth, field independent subjects will deny or minimize the experiencing of items of unawareness, challenge, enthusiasm, etc. to a greater degree than the field dependent subjects.

CHAPTER IV

RESULTS

The data gathered in this experiment may be analyzed in two ways. One method employed by Field (1973) is to examine individual questionnaire items to determine which, if any, significantly differentiate among groups. These items may then be pooled and the similarities of the pooled items can be used to determine whether or not the hypotheses of the experiment are supported. These items can also be used to cross validate previous findings related to the subjective experience of hypnosis. The second but related method of analysis is implicit in Field's (1973) data analysis. It is possible to assert that all questionnaire items represent a potential aspect of the subject's experience while hypnotized. That is, each item suggests that the subject experienced something <u>different</u> from ordinary experience. As an example, item one reads: "Time stood still." If the subject endorses this item and therefore acknowledges that her time sense was somehow altered, then the subject acknowledges that during hypnosis, she has less autonomy than during the normal state. If each item in the questionnaire is treated in this manner then a total questionnaire score could be used to differentiate groups of subjects as long as any negative items in the questionnaire are converted to a consistent "affirmative"

direction. Item 20, for example, is: "I did not lose all sense of time." During the analysis of the data, this item along with items 6, 14, 16, 29, 30, 34, 42, 43, 45, 57, and 60 were all changed to an affirmative direction so that a high score on these items implies an endorsement of the hypnotic state as different from the normal state of ego autonomy. If all items are now read so that a high individual item score means endorsement of the hypnotic state and a loss of autonomy, then a total score also has relevance to the hypotheses of this experiment. The higher the total questionnaire score, the greater the phenomenon of hypnosis is endorsed. The greater the total phenomenon is endorsed, the more ego autonomy is lost. In sum, two related methods of data analysis will be utilized. The total scores of groups across all 61 questionnaire items will be examined. In addition, the individual questionnaire items which differentiate one group from another will be examined. In both cases the results have been derived by the use of a 2x3 fixed analysis of variance. Duncan's New Multiple Range Test was used as a post hoc test to further specify the nature of the variance between means.

Hypothesis 1 stated that the female-field independent group (FI) would perceive hypnosis as a challenge to its self control and would emphasize control and autonomy during hypnosis. Conversely Hypothesis 2 stated that the

female-field dependent group (FD) would not emphasize control and autonomy during hypnosis. The following tables summarize the results of the two approaches to data analysis described above. Table 1 summarizes the 2x3 factorial fixed analysis of variance for the summed scores for all items. In this table the total effects are given.

Table 1

2x3 Factorial Fixed Analysis of Variance for Total Scores on Hypnosis Inventory

Source	SS	df	ms	F	P
Total	26933.559	59	456.501	--	--
Depth of Hypnosis	5411.695	2	2705.848	8.151	.001
Field Independence	1983.750	1	1983.750	5.976	.017
Depth x Field	1611.902	2	805.951	2.428	.096
Error	17926.211	54	331.967	--	--

An F of 5.976 (p=.017) was obtained on the field independent-dependent factor, thus indicating that the difference between the means of FI and FD groups is significant. Thus the data analysis indicates that the total questionnaire mean of the FI group (173.4) was significantly smaller than the mean of the FD group (184.9), thereby supporting Hypothesis 1. (The largest possible difference between groups would be 183.) Female FI subjects acknowledge the intensity of the hypnosis experience to a lesser degree than FD subjects, and thus emphasize their control and autonomy when the total questionnaire score is examined.

Hypothesis 2 stated that the female FI group and the female FD group would differ least at a light level of trance, where autonomy is least threatened, and would differ most at a deep level of trance, when autonomy was threatened to a greater degree. It was predicted that with increasing depth, FI subjects would deny or minimize the intensity of the hypnotic experience to a greater degree than the FD group. Table 1 indicates that there is indeed a significant interaction effect ($F=2.428$; $p=.096$) between the variables of field independence/dependence and depth of hypnotic trance. To determine the nature of this effect Table 2 must be examined. Table 2 contains the results of Duncan's New Multiple Range Test which was used to make multiple comparisons of the interaction means. It is evident that there are no significant differences between medium and deep levels of hypnosis when the interaction effect is examined. In fact, the trend of the data is in the opposite direction of Hypothesis 2. That is, the data in the first three rows of Table 2 indicate that the means for the light group differ more than the means of the medium or deep groups. Field independent light subjects (FIL) tend to minimize or deny more aspects of their hypnotic experience than field dependent light subjects (FDL). Much smaller differences (-26.6 vs -7.2 and 0.6) were found when similar comparisons were made at medium and deep levels. Thus Table 2 suggests

Table 2

Analysis of the Total Score Interaction Effect by Duncan's New Multiple Range Test

Comparison	Differences between Means	R(.05)	R(.10)	Significance
FIL-FDL	-26.6	16.352	13.644	.05
FIM-FDM	- 7.2	16.352	13.644	NS
FID-FDD	0.6	16.352	13.644	NS
FIL-FIM	-28.4	17.1996	14.417	.05
FIL-FID	-34.3	18.202	14.918	.05
FIM-FID	- 5.9	16.352	13.644	NS
FDL-FDM	- 9.0	18.202	14.918	NS
FDL-FDD	- 5.1	17.200	14.417	NS
FDM-FDD	1.9	17.200	14.417	NS

Note: FI stands for field independent subjects; FD stands for field dependent subjects; L refers to light levels of hypnosis; M refers to medium levels of hypnosis; D refers to deep levels of hypnosis. Maximum difference between means would be 183.0.

that FI and FD groups differ least at medium and deep levels and most at light levels of hypnosis.

As mentioned above, there is justification for analyzing the differences between means on the sixty-one individual items of the hypnosis inventory. Table 3 contains an abbreviated summation of the results of sixty-one 2x3 fixed analyses of variance, followed by a post hoc test for significance of means using Duncan's New Multiple Range Test. One analysis of variance was completed for each question on the hypnosis questionnaire. The factors which were significant on each question appear in Table 3.

By examining column one of Table 3, the reader can find those items which differentiate between the female FI group and the female FD group. These items are of direct relevance to Hypothesis 1. Only four items differentiate at the .05 level. Since the analyses of variance were carried out on single questionnaire items, it might be useful to include p values up to .15. This lower level of significance may be justified because it is to be expected that individual items on a questionnaire would achieve lower significance levels than the total questionnaire scores which are summations of the smaller item differences. Precedence for such a decision to accept lower significance levels may be found in Field (1973). If the lower significance level is accepted, fifteen items out of a possible of 61 reached significance.

Table 3

Summary of Probability Values for Significance among Groups on the Individual Items on the Hypnosis Inventory

	FIELD	INTERACTION									DEPTH		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Question	FI-FD	FIL-FDL	FIM-FDM	FID-FDD	FIL-FIM	FIL-FID	FIM-FID	FDL-FDM	FDL-FDD	FDM-FDD	L-M	L-D	M-D
Q1	.11	.05				.10							
Q2													
Q3													
Q4	.02												
Q5											.01	.001	.10
Q6			.10			.01		.10			.05	.01	
Q7		.10	.10		.10	.10		.10		.10			
Q8													
Q9					.01	.05					.05	.05	
Q10	.12										.10	.05	
Q11	.11										.05	.05	
Q12													
Q13		.05			.05	.01					.10		
Q14													
Q15	.13												
Q16	.14	.05		.10	.01	.10				.10	.05	.05	
Q17													
Q18													
Q19	.06											.10	.10
Q20	.05	.001			.05	.01							
Q21	.06												
Q22												.10	.10

Table 3 (continued)

Question	FIELD (1) FI-FD	INTERACTION (2) FIL-FDL	(3) FIM-FDM	(4) FID-FDD	(5) FIL-FIM	(6) FIL-FID	(7) FIM-FID	(8) FDL-FDM	(9) FDL-FDD	(10) FDM-FDD	DEPTH (11) L-M	(12) L-D	(13) M-D
Q23													
Q24											.10	.10	
Q25						.10							
Q26	.13												
Q27													
Q28													
Q29													
Q30													
Q31											.001	.01	
Q32													
Q33													
Q34													
Q35											.01		.10
Q36		.01		.05				.01	.05				
Q37													
Q38													
Q39												.10	
Q40													
Q41	.11												
Q42			.10			.05		.10			.10	.10	
Q43				.10		.05							
Q44													
Q45													
Q46													
Q47													
Q48	.12	.01			.05	.01					.05	.05	
Q49											.10	.05	

Table 3 (continued)

Question	FIELD (1) FI-FD	INTERACTION (2) FIL-FDL	(3) FIM-FDM	(4) FID-FDD	(5) FIL-FIM	(6) FIL-FID	(7) FIM-FID	(8) FDL-FDM	(9) FDL-FDD	(10) FDM-FDD	DEPTH (11) L-M	(12) L-D	(13) M-D
Q50		.01			.10	.01							
Q51	.03												
Q52													
Q53													
Q54													
Q55													
Q56													
Q57						.01	.10					.05	
Q58	.02										.01	.01	
Q59	.07	.01			.001	.01					.01	.05	
Q60											.10	.01	
Q61													

Note: In column 1, only those p values which were found to be equal to or less than .15 have been tabled. In column 2-column 13, only those p values which were found to be equal to or less than .10 have been tabled. Empty cells denote p values greater than .15.

All 15 items vary in the direction of smaller means for female FI subjects and higher means for female FD subjects. The 15 items, stated in the affirmative direction, are as follows:

1. Time stood still.
4. I felt aware of my body only where it touched the chair.
10. Everything happened automatically.
11. Sometimes I didn't know where I was.
15. During the experiment I felt I understood things better or more deeply.
16. I was not able to overcome some or all of the suggestions.
19. At times I felt completely unaware of being in an experiment.
20. I lost all sense of time.
21. It seemed completely different from ordinary experience.
26. It seems as if it happened a long time ago.
41. I felt a wish to surrender.
48. I felt a change in my skin temperature.
51. My attention was very narrow and restricted.
58. The hypnotist was in complete control.
59. At first I voluntarily went along with the hypnotist, but then I discovered that I couldn't assert my own will.

Taken as a group, items 10, 16, 41, 58, and 59 suggest that female FI subjects scored lower on items indicating loss of control, desire to surrender, or ability to resist. Items 1, 20, and 26 suggest that FI subjects scored lower on items reflecting loss of autonomy of the ego function of time sense. Items 4, 11, 19, and 51 seem to indicate that FI subjects scored lower on items dealing with loss of orientation to the world or to the body. Finally, item 48 might be one more example of changes in the body as a result of the hypnotic state which tends to be denied by the FI subjects. All fifteen items seem to add support to Hypothesis 1 because there is a consistent tendency on the part of FI subjects to minimize the hypnotic experience and assert autonomy and control when compared with the FD group. These findings also are consistent with the total score comparisons mentioned above.

Columns 1-4 of Appendix C on page 113 contain the means and significance levels for all sixty-one comparisons between the means of FI and FD subjects. Items 2, 3, 7, 9, 12, 14, 17, 22, 23, 27, 28, 31-35, 37-39, 42-47, 52, 53, 56, 57, 60 and 61 all have significance values of .999. If these thirty-one items are treated as a control against random findings sighted in Table 3 it can be seen that some items dealing with autonomy and control did not differentiate between FI and FD subjects. For example, item 57 states:

"I felt like I was playing a role and still had control over myself." Taken as a whole it would seem that the data from total score comparisons tend to support Hypothesis 1 while the data from the analysis of individual items are equivocal.

Those items which have a direct bearing on Hypothesis 2 may be found in columns 2, 3, and 4. It is apparent that nine items differentiate between FIL subjects and FDL subjects at the .10 level whereas only three items differentiate the field independent deep (FID) and field dependent deep (FDD) subjects at the .10 level. This trend is in the opposite direction predicted by Hypothesis 2. Furthermore, only one FID-FDD comparison reached the .05 level of significance and none of the field independent medium (FIM)-field dependent medium (FDM) comparisons reached the .05 level of significance. However, eight of the nine items which differentiated the FIL-FDL subjects reached at least the .05 level of significance. In short, the difference between FIL and FDL subjects is much greater than the difference between FIM and FDM or FID and FDD subjects.

When the specific nine items that significantly differentiated FIL subjects from FDL subjects are examined, it may be noted that eight of the nine items vary in the direction of smaller means for FI subjects and higher means for FD subjects. Only item 36 was in a direction contrary to expectation. The items, stated in an affirmative direction, are as follows:

1. Time stood still.
7. I was delighted with the experience.
13. When I came out, I was surprised at how much time had gone by.
16. I was not able to overcome some or all of the suggestions.
20. I lost all sense of time.
36. I had trouble keeping my head up.
48. I felt a change in skin temperature.
50. I suddenly felt warm or cold.
59. At first I voluntarily went along with the hypnotist, but then I discovered I couldn't assert my own will.

Taken together, items 16 and 59 suggest FIL subjects scored lower on items indicating loss of control or ability to resist. Items 1, 13, and 20 suggest that FIL subjects scored lower on items reflecting loss of autonomy of the ego function of time sense. Items 48 and 50 suggest that FIL subjects are less inclined to acknowledge bodily changes. Item 7 indicates that FIL subjects were less delighted with their experience. Item 36 indicates that FIL subjects felt that they were less able to keep control over the position of their head. This item stands in isolation to the virtually consistent tendency for FI means to be lower than FD means.

Columns 6-13 in Appendix C, page 113, contain the means and significance levels for all items when the interaction effect is analyzed. Items 2, 4, 8, 11, 12, 14, 15, 17, 18, 21, 22, 24, 27, 29, 30, 31, 33, 34, 35, 37, 39, 40, 41, 44, 46, 47, 49, 51, 53, 54, 55, 60, and 61 all have significant levels of .999. If these items are treated as a control against random findings sighted in Table 3 on pages 69-71, it can be seen that some items dealing with autonomy and control did not differentiate between FI and FD subjects at different depths of hypnosis. For example, item 31 states: "I could not have stopped doing the things the experimenter suggested even if I tried." Thus the results of the individual item analysis are equivocal. While there is some evidence to support a slight trend in the direction of differences between FI and FD groups at light levels of hypnosis, these data may be due to chance. Hypothesis 2 is not supported when individual item interaction effects are examined. While there is a slight tendency of the data in a direction opposite of the prediction of Hypothesis 2, this trend may be due to chance.

Several other findings may be culled from the data. If the reader returns to Table 1, page 65, he will find that the factor of depth is significant at the .001 level when total scores are examined. To determine the nature of the differences between means, Duncan's New Multiple Range Test was used. Table 4 summarizes the results of this analysis.

Table 4

Duncan's New Multiple Range Test Results
for Total Score Depth Effect

Comparison	Difference between Means	df	R(.05)	R(.10)	R(.001)	Significance
Light-Medium	-18.75	54	11.562	15.375	20.093	0.01
Light-Deep	-21.30	54	12.160	16.060	21.107	0.001
Medium-Deep	- 2.55	54	11.562	15.375	20.093	--

It can be seen from Table 4 that the light level of hypnosis had a significantly lower mean on the hypnosis inventory than the medium or deep levels which were quite similar in their means. (The maximum difference between means would be 183.0.)

By returning to columns 11, 12 and 13 of Table 3, pages 69-71, the reader can see which individual questionnaire items significantly differentiated between light, medium and deep levels of hypnosis. From this table it is apparent that not all items successfully differentiated between different depths of hypnosis. This is of interest because the first thirty-eight items of the hypnosis scale were taken from the research done by Field (1965) who found that all thirty-eight items correlated with depth. However, the results summarized in Table 3 (columns 11, 12, and 13) suggest that there is evidence in the present study that only items 5, 6, 9, 10, 11, 13, 16, 19, 22, 24, 31, and 35 covary with depth of

hypnosis. In addition, only three of the thirty-eight items distinguish between medium and deep levels of hypnosis.

Another aspect of the data may be highlighted by returning to Table 2, page 67. Significant differences were found between the (FIL) vs (FIM or FID) groups. No significant differences were found between the FIM-FID comparison of any of the FD comparisons (e.g., FDL-FDM, FDL-FDD, FDM-FDD). These differences tend to be repeated in Table 3, pages 69-71 (columns 5-10). Columns 5, 6, and 7 summarize the significant differences between the sixty-one individual item means of FI subjects. Columns 8, 9, and 10 of Table 3 summarize the significant differences between the sixty-one individual item means of FD subjects. It is apparent that many differences occur between FIL and FIM subjects or FIL and FID subjects. However, almost no significant differences occur between FIM and FID subjects or any of the FD subjects (e.g., FDL-FDM, FDL-FDD and FDM-FDD). That is, there are eight significant differences between FIL and FIM subjects and fourteen significant differences between FIL and FID subjects. This compares with one significant difference between FIM and FID subjects, four significant differences between FDL and FDM subjects, one significant difference between FDL and FDD subjects and two significant differences between FDM and FDD subjects. This disparity is emphasized even more when it is noted that sixteen of twenty-two mean

differerences are significant at least at the .05 level in the FIL and FIM or FIL and FID comparisons. Only two of seven comparisons reach the .05 significance level when FDM and FID means are compared or any of the FD means are compared. These findings seem to indicate that FIL subjects have different experiences than FIM or FID subjects. Put another way, FIM and FID subjects have similar experiences in hypnosis as compared with FIL subjects. The items on which the FIL subjects differentiated from FIM subjects are as follows:

7. I was delighted with the experience.
9. I tried to resist but could not.
13. When I came out I was surprised at how much time had gone by.
16. I was not able to overcome some or all of the suggestions.
20. I lost all sense of time.
48. I felt a change in my skin temperature.
50. I suddenly felt cold or warm.
59. At first I voluntarily went along with the hypnotist, but then I discovered I couldn't assert my own will.

All of the above items are stated in the affirmative direction. On all items FIL subjects had smaller means than the FIM subjects. Thus, items 9, 16, and 59 indicate that

FIL subjects denied giving up control to a greater degree than FIM subjects. Items 13 and 20 indicate that ego autonomy of the sense of time was maintained in FIL subjects to a greater degree than FIM subjects. Items 48 and 50 indicate that FIL subjects deny bodily changes to a greater degree than FIM subjects. Item 7 indicates that FIL subjects were less delighted with hypnosis than FIM subjects.

An examination of FIL subjects vs FID subjects yield similar results. FIL subjects differed significantly from FID subjects on the following items:

1. Time stood still.
7. I was delighted with the experience.
9. I tried to resist but could not.
13. When I came out I was surprised at how much time had gone by.
16. I was not able to overcome some or all of the suggestions.
20. I lost all sense of time.
25. I felt apart from everything else.
42. My inner thoughts did not interfere with the experiment.
43. It did not seem as if I were observing myself during the experiment.
48. I felt a change of skin temperature.
50. I suddenly felt warm or cold.

57. I did not feel like I was playing a role and I did not have control over myself.

59. At first I voluntarily went along with the hypnotist but then I discovered I couldn't assert my own will.

Again all items are stated in the affirmative direction. On all items the FIL subjects had smaller means than the FID subjects. Items 6, 9, 16, 57, and 59 suggest that FIL subjects felt that they possessed more control and autonomy than FID subjects. Items 1, 13, and 20 suggest that FIL subjects stressed that they maintained greater autonomy over the ego mechanism that keeps track of time than did the FID subjects. Item 42 suggests that the FIL subjects maintained control in part by retaining the use of cognitive processes which interfered with becoming absorbed in the hypnotic experience. Item 25 suggests that FIL subjects maintained a greater orientation to the world than FID subjects thus again keeping more control. Items 48 and 50 indicate that FIL subjects denied bodily changes to a greater degree than FID subjects and item 7 suggests that FIL subjects were less delighted with their experience than FID subjects. The reader should be cautioned again that these findings on individual items may be due to chance and only a slight trend has been found in that data.

CHAPTER V

DISCUSSION

As mentioned in Chapter IV, there are two sources of evidence which lend support to the confirmation or rejection of the hypotheses of this experiment. They are the total score on the analysis of variance, and the individual analyses of variance on the sixty-one items of the hypnosis inventory. The author recognizes that the assumption of random assignment to groups was violated when the data were gathered. In addition the author recognizes that an unusually high significance level (.15) was tolerated in some instances. While both of these factors somewhat reduce the chances of replicability, the trends of the two methods of data analysis are in agreement and should be discussed within the context of the wider experimental literature. To this task the author will turn.

It was noted in Chapter IV, that Hypothesis 1 was supported when the total scores were analyzed. That is, female FI subjects tend to receive lower scores on the hypnosis inventory then female FD subjects. Equivocal support for Hypothesis 1 was gained when individual items were analyzed. In addition, it was noted that the data did not support Hypothesis 2. That is, female FI subjects and female FD subjects <u>did not</u> differ the most at deep levels of

hypnosis. If anything, some of the data pointed in the opposite direction of Hypothesis 2 and seemed to suggest that the greatest differences were at the light level of hypnosis. At this level, some evidence suggested that FI subjects tended to have lower scores than the FD subjects but when FI and FD subjects were compared at medium and deep levels of hypnosis, virtually no differences were found.

These findings tend to reaffirm the work of Field (1973) in that there appears to be a difference in the subjective experience of hypnosis when FI and FD subjects are compared. FI subjects do tend to minimize the hypnotic experience and affirm their own feelings of control and autonomy to a greater degree than the FD subjects. However, these differences predominantly appear at the light level of hypnosis. Medium and deep subjects exhibit only an occasional difference. These findings might be explained by the fact that psychologists such as Witkin et al. (1954 and 1962), Klein (1970), and Shapiro (1965) recognize the relationship between perception and personality. The personality traits isolated by Witkin et al. (1962) and other researchers reviewed in Chapter II suggest that FI subjects tend to be more analytical, over-controlled, socially autonomous and over-ideational in comparison to FD subjects. On the other hand, FD subjects tend to be more affiliative and trusting in their interpersonal relationships. Thus when FI subjects

are faced with hypnosis, which demands their giving up control to the hypnotist, the FI subjects tend to deny or minimize this loss of control at light levels of hypnosis. This is because such a loss of control is threatening to their character styles which tend to value autonomy and over-control. Conversely, the more trusting and affiliative FD subjects do not seem to be as threatened by the implied loss of control. Thus, they do not minimize or deny this loss to the same degree as the FI subjects at light levels of hypnosis. When the medium and deep levels of hypnosis are examined, the differences between these two groups all but disappear. This might suggest that FI subjects are able to deny the least powerful effects of the hypnotic state. However, as the hypnotic state becomes more profound the effects can no longer be minimized or denied, and the differences between groups disappear.

Such an interpretation is given further support if the data concerning the differences within FI or FD subjects are examined. The trend of the total score analysis of variance suggests that the largest differences occur between (FIL) vs (FIM or FID) groups. No trends were detected when comparisons were made between the means of the FIM and FID groups or when comparisons were made between any of the FD groups. This observation is given equivocal support when the individual analyses of variance for the sixty-one items

are examined for differences. Thus the tendency of the data suggests that it is the FIL subjects who are most able to deny or minimize the hypnotic experience of loss of control and autonomy. FDL subjects, who tend to be more affiliative, trusting, and less threatened with loss of control, tend to differ from the FIL subjects in their description of hypnosis. However as the effects of hypnosis become stronger, these differences disappear. Apparently the FI subjects could no longer deny the more powerful experience of medium or deep levels of hypnosis and thus predominantly agreed with the FD subjects in their description of the subjective experience of hypnosis. Again, however, the reader is cautioned as to the issue of replicability described earlier.

It might be noted that an alternate hypothesis could explain the data. Witkin et al. (1954, 1962) have found that FI subjects tend to have a cognitive style which is dominated by an articulated, differentiated view of the world. Conversely, FD subjects tend to see the world in a more global, diffuse, less differentiated manner. Thus at light levels of hypnosis, the FI subject is better able to differentiate her experience. She is not defending against loss of control but is merely assessing her hypnotic experience in a more differentiated manner. She is able to distinguish varying degrees of losing control. The FD subject, however, does not delineate her experience and therefore globally

acknowledges loss of control in an undifferentiated manner. This might account for the trends in the data which suggest that FI subjects have lower means than FD subjects. This alternate hypothesis warrants further research to determine its merit.

The trends discovered in this experiment must be integrated into the previous experimental literature of hypnosis. As mentioned in Chapters I and II, there is no agreed upon theory of hypnosis. Indeed there are a multitude of theories representing a diverse number of viewpoints. Very little integration has taken place up to this point. Research on the phenomenon of hypnosis seems to point to no physiological correlates with hypnosis and only a few behavioral correlates with hypnosis. This has led Orne (1959) to state that the "essence" of hypnosis is to be found in the subjective experience of hypnosis. Studies by Ås and Østvold (1968), Field (1965) and Ludwig and Levine (1965) have helped delineate the subjective experience of hypnosis. More recently, there has been evidence that the subjective experience of hypnosis is not a unitary phenomenon (Field and Scott, 1969; Field, 1973; Freundlich and Fisher, 1974). The present study adds further support to this general conclusion. That is, the results of this study seem to suggest that there is a tendency for female FI and FD subjects to differ at light

levels of hypnosis. Such an observation, if replicated, will refine the general observation of Field (1973) that FI and FD subjects differ in their subjective experience of hypnosis and that these differences stem from issues of control and autonomy.

It is still premature to attempt to offer an integration of theories of hypnosis given the present stage of hypnosis research. However, it is becoming clearer that any adequate theory of hypnosis must take into account the subjective experience of hypnosis and the possibility of individual differences in the subjective experience of hypnosis. Additional research must be done to replicate the present study, and the trends reported. Male subjects need to be examined to determine whether the preliminary findings of Freundlich and Fisher (1974) can be replicated with regard to the issue of males tending to deny giving up control and autonomy to a greater extent than females. Do male subjects also tend to differ most at light levels of hypnosis but differ least at medium and deep levels? Further research must be done to answer these questions. A systematic investigation of the subjective experience of hypnosis within different character styles is also in order. The possibility of discovering more about the "essence" of hypnosis is just beginning. Fortunately there are now several subjective hypnosis inventories that may be used for investigation.

However the present research suggests that some items from the Field (1965) inventory do not in fact covary with depth and an abbreviated inventory might be more useful if the Field (1965) inventory is chosen. In any event, the subjective experience of hypnosis is a new area which is wide open for systematic research. The reward for systematic investigation might be a giant step toward the development of an integrated theory of hypnosis.

BIBLIOGRAPHY

BIBLIOGRAPHY

Allen, V. L., and Crutchfield, R. S. Generalization of experimentally reinforced conformity. Journal of Abnormal and Social Psychology, 1963, 67, 326-333.

Ås, A. Non-hypnotic experiences related to hypnotizability in male and female college students. Scandanavian Journal of Psychology, 1962a, 3, 112-121.

Ås, A. A factor-analytic study of subjective personal experiences and their bearing on theories of hypnosis. Acta Psychologica, 1962b, 20, 196-209.

Ås, A., O'Hara, J., and Munger, M. The measurement of subjective experiences presumably related to hypnotic susceptibility. Scandanavian Journal of Psychology, 1962, 3, 47-64.

Ås, A., and Østvold, S. Hypnosis as subjective experience. Scandanavian Journal of Psychology, 1968, 9, 33-38.

Barber, T. X. Hypnosis: A scientific approach. New York: Van Nostrand-Reinhold, 1969.

Barber, T. X. LSD, yoga, and hypnosis. Chicago: Aldine, 1970.

Barber, T. X., and Calverley, D. X. Fact fiction, and the topic hypnosis: Multidimensional analysis of hypnotic behavior. Harding, Mass.: Medfield Foundation 1966 (Mimeo) (Reported in Barber, T. X. Hypnosis: A scientific approach. New York: Van Nostrand-Reinhold, 1969, 105-122.)

Barrett, G., and Thompson, C. Cognitive style differences between engineers and college students. Perceptual and Motor Skills, 1967, 25, 789-793.

Bernheim, H. Suggestive therapeutics. (Second Rev. Ed.) New York: Putnam, 1880.

Binet, A., and Féré, C. Animal magnetism. New York: Appleton, 1888.

Bogo, N., Winget, C., and Gleser, G. C. Ego defenses and perceptual styles. Perceptual and Motor Skills, 1970, 30, 599-605.

Bowers, K. S. Sex and susceptibility as moderator variables in the relationship of creativity and hypnotic susceptibility. Journal of Abnormal Psychology, 1971, 78, 93-100.

Brenman, M., and Gill, M. M. Hypnotherapy: A survey of the literature. New York: International Universities Press, 1947.

Brenman, M., Gill, M. M., and Hacker, F. Alterations in the state of the ego in hypnosis. Menninger Clinic Bulletin, 1947, 11, 60-66.

Clark, S. L. Authoritarian attitudes and field dependence. Psychological Reports, 1968, 22, 309-310.

Cooper, J. R. The need for approval and reaction to failure. Unpublished doctoral dissertation, Northwestern University, 1964.

Cooper, L. F., and Erickson, M. H. Time distortion in hypnosis: An experimental and clinical investigation. (2nd ed.) Baltimore: Williams and Wilkins, 1959.

Crandall, V. J., and Sinkeldam, C. Children's dependent and achievement behaviors in social situations and their perceptual field dependence. Journal of Personality, 1964, 32, 1-22.

Duvall, N. S. Field articulation and the repression-sensitization scale in perception and memory. Unpublished doctoral dissertation, University of North Carolina at Chapel Hill, 1969.

Elliot, R. Interrelationships among measures of field dependence, ability and personality traits. Journal of Abnormal and Social Psychology, 1961, 63, 27-36.

Erickson, M. The induction of color blindness by a technique of hypnotic suggestion. Journal of General Psychology, 1939, 20, 61-89.

Erickson, M. Deep hypnosis and its induction, Experimental hypnosis. L. LeCron, editor. New York: Macmillan, 1952, 70-114.

Erickson, M. Experiential knowledge of hypnotic phenomena employed for hypnotherapy. American Journal of Clinical Hypnosis, 1966, 8, 299-309.

Erickson, M., Rossi, E., Erickson, E., and Rossi, S. Hypnotherapeutic training volume I: Indirect induction and suggestion, 1974. Unpublished manuscript.

Ferenczi, S. Sex and psychoanalysis. New York: Basic Books, 1950.

Field, P. An inventory scale of hypnotic depth. The International Journal of Clinical and Experimental Hypnosis, 1965, 13, 238-249.

Field, P. Personality and styles of hypnotic responses. American Journal of Clinical Hypnosis, 1973, 15, 234-238.

Field, P., and Palmer, R. Factor analysis: Hypnosis inventory. The International Journal of Clinical and Experimental Hypnosis, 1969, 17, 50-61.

Field, P., and Scott, E. Experiences of alcoholics during hypnosis. American Journal of Clinical Hypnosis, 1969, 12, 86-90.

Fisher, S. Body image and hypnotic response. The International Journal of Clinical and Experimental Hypnosis, 1963, 11, 152-162.

Freundlich, B., and Fisher, S. The role of body experience in hypnotic behavior. The International Journal of Clinical and Experimental Hypnosis, 1974, 22, 68-83.

Fromm, E., and Shor, R. Underlying theoretical issues: An introduction. Hypnosis research developments and perspectives. Chicago: Aldine Publishing Co., 1972, 3-12.

Gill, M. M., and Brenman, M. Hypnosis and related states: Psychoanalytic studies in regression. New York: International Universities Press, 1959.

Gubel, I. Hallucinogenic drugs and hypnosis in psychotherapy. American Journal of Clinical Hypnosis, 1962, 4, 160-173.

Haley, J. An interactional explanation of hypnosis. American Journal of Clinical Hypnosis, 1958, 1, 41-57.

Haley, J. (ed.). Advanced techniques of hypnosis and therapy: Selected papers of Milton H. Erickson. New York: Grune and Stratton, 1967.

Haley, J. Strategies of Psychotherapy. New York: Grune and Stratton, 1963, 20-40.

Handler, L. Handler hypnotic deepening steps. Unpublished document. 1975.

Heidenhain, R. Der sogenannte tierische Magnetismus. Leipsiz: Breitkopf and Hartel, 1890. Summarized in Brenman, M., and Gill, M. Hypnotherapy: A survey of the literature. New York: International Universities Press, 1947, 91-113.

Hilgard, E. Hypnotic susceptibility. New York: Harcourt, Brace & World, 1965.

Hilgard, E., and Lauer, L. Lack of correlation between the California Psychological Inventory and hypnotic susceptibility. Journal of Counsulting Psychology, 1962, 26, 331-335.

Hilgard, J. Personality and hypnosis: A study of imaginative involvement. Chicago: University of Chicago Press, 1970.

Ihilevich, D., and Gleser, G. Relationship of defense mechanisms to field dependence-independence. Journal of Abnormal Psychology, 1971, 77, 296-302.

Janet, P. Psychological healing. (Trans. by E. and C. Paul.) (2 vols.) London: Allen and Unwin, 1925.

Justice, M. T. Field dependency, intimacy of topic and interpersonal distance. Unpublished doctoral dissertation, University of Florida, 1969.

Klein, G. Perception, Motives, and Personality. New York: Alfred A. Knopf, 1970.

Klemperer, E. Changes of the body image in hypnoanalysis. Journal of Clinical and Experimental Hypnosis, 1954, 2, 157-162.

Kris, E. Psychoanalytic explorations in art. New York: International Universities Press, 1952.

Lang, P., and Lazovik, A. Personality and hypnotic susceptibility. Journal of Consulting Psychology, 1962, 26, 317-322.

LeCron, L., and Bordeaux, J. Hypnotism today. New York: Grune and Stratton, 1947.

LeCron, L. A method of measuring the depth of hypnosis. Journal of Clinical and Experimental Hypnosis, 1953, 1, 4-7.

Linton, H., and Langs, R. Subjective reactions to lysergic acid diethylamide (LSD-25). Archives of General Psychiatry, 1962, 6, 352-368.

Ludwig, A., and Levine, J. Alteration in consciousness produced by hypnosis. Journal of Nervous and Mental Disease, 1965, 140, 146-153.

Mausner, B., and Graham, J. Field dependence and prior reinforcement as determinants of social interaction in judgement. Journal of Personality and Social Psychology, 1970, 16, 486-493.

McCord, H. The "image" of the trance. International Journal of Clinical and Experimental Hypnosis, 1961, 9, 305-307.

Minard, J., and Mooney, W. Psychological differentiation and perceptual defense; Studies of the separation of perception from emotion. Journal of Abnormal Psychology, 1969, 74, 131-140.

Moll, A. Hypnotism (4th ed.) (Trans. by A. F. Hopkirk) London: Walter Scott; New York: Scribner, 1909.

Newey A. Psychological differentiation and personality style. Unpublished doctoral dissertation proposal, University of Tennessee, 1975.

Orne, M. The nature of hypnosis: Artifact and essence. Journal of Abnormal and Social Psychology, 1959, 58, 277-299.

Orne, M. Hypnosis, motivation and compliance. American Journal of Psychiatry, 1966, 122, 721-726.

Palmer, R., and Field, P. Visual imagery and susceptibility to hypnosis. Journal of Consulting and Clinical Psychology, 1968, 32, 456-461.

Palmer, R., and Field, P. Cognitive factors in hypnotic susceptibility. Journal of Consulting and Clinical Psychology, 1971, 37, 165.

Pavlov, I. Inhibition, hypnosis, and sleep. British Medical Journal, 1923, 256-257.

Pottinger, P. The relationship of perceptual field dependence-independence to a measure of the active-passive dimension of personality. Unpublished doctoral dissertation, University of North Carolina, Chapel Hill, 1971.

Randolph, L. A study of the effects of praise, criticism and failure on the problem solving performance of field-dependent and field-independent individuals. Unpublished doctoral dissertation, New York University, 1971.

Rapaport, D. Toward a theory of thinking. In Organization and pathology of thought. New York: Columbia University Press, 1951, 689-730.

Rosen, G. History of medical hypnosis: From animal magnetism to medical hypnosis. Hypnosis in modern medicine (3rd Ed.). J. Schneck, editor. Springfield, Ill.: Charles C. Thomas Publisher, 1963, 3-28.

Rotter, J. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 1966, 80 (1, Whole No. 609).

Ruble, D., and Nakamura, C. Task orientation vs. social orientation in young children and their attention to relevant social cues. Child Development, 1972, 43, 471-480.

Rudin, S., and Stagner, R. Figure-ground phenomena in the perception of physical and social stimuli. Journal of Psychology, 1958, 45, 213-225.

Sarbin, T. Contributions to role taking theory: I. Hypnotic behavior. Psychological Review, 1950, 57, 255-270.

Sarbin, T., and Anderson, M. Role theoretical analysis of hypnotic behavior, Handbook of clinical and experimental hypnosis. J. Gordon, editor. New York: Macmillan, 1967, 319-344.

Sarbin, T., and Slagle, R. Hypnosis and psychophysiological outcomes, Hypnosis research developments and perspectives. E. Fromm, and R. Shor, editors. Chicago: Aldine, 1972, 185-214.

Schilder, P. The relationship between clinging and equilibrium. International Journal of Psychoanalysis, 1939, 20, 58-63.

Schimek, J. Cognitive style and defenses: A longitudinal study of intellectualization and field independence. Journal of Abnormal Psychology, 1968, 73, 575-580.

Segal, E., and Lachman, R. Complex behavior or higher mental processes: Is there a paradigm shift? American Psychologist, 1972, 27, 46-55.

Shapiro, D. Neurotic Styles. New York: Basic Books, 1965.

Shor, R. Hypnosis and the concept of the generalized reality-orientation. American Journal of Psychotherapy, 1959, 13, 582-602.

Shor, R. Three dimensions of hypnotic depth. International Journal of Clinical and Experimental Hypnosis, 1962, 10, 23-38.

Shor, R., and Orne, E. The Harvard Group Scale of Hypnotic Susceptibility, Form A. Palo Alto, Calif.: Consulting Psychologists Press, 1962.

Shor, R., Orne, M., and O'Connell, D. Psychological correlates of plateau hypnotizability in a special volunteer sample. Journal of Personality and Social Psychology, 1966, 3, 80-95.

Solar, D., Davenport, G., and Breuhl, D. Social compliance as a function of field dependence. Perceptual and Motor Skills, 1969, 29, 299-306.

Sutcliffe, J. "Credulous" and "Skeptical" views of hypnotic phenomena: A review of certain evidence and methodology. International Journal of Clinical and Experimental Hypnosis, 1969, 8, 73-101.

Sutcliffe, J. "Credulous" and "Skeptical" views on hypnotic phenomena: Experiments on esthesia, hallucination and delusion. Journal of Abnormal and Social Psychology, 1961, 62, 189-200.

Tart, C. Psychedelic experiences associated with a novel hypnotic procedure, mutual hypnosis. American Journal of Clinical Hypnosis, 1967, 10, 65-78.

Tart, C. Measuring the depth of an altered state of consciousness, with particular reference to self-report scales of hypnotic depth. Hypnosis research developments and perspectives. E. Fromm, and R. Shor, editors. Chicago: Aldine Publishing Co., 1972, 445-477.

Trego, R. An investigation of the rod-and-frame test in relation to emotional dependence and social cue attentiveness. Unpublished doctoral dissertation, Texas Christian University, 1971.

Uhlman, F., and Saltz, E. Retention of anxiety material as a function of cognitive differentiation. Journal of Personality and Social Psychology, 1965, 1, 55-62.

van der Walde, P. Trance states and ego psychology. International Journal of Clinical and Experimental Hypnosis, 1967, 15, 95-105.

Verworn, M. Allgem-Physiologie. Jena: Gustav Fisher, 1901.

Weitzenhoffer, A. General techniques of hypnotism. New York: Grune and Stratton, Inc., 1957.

Weitzenhoffer, A. Some speculations regarding the nature and character of hypnotic behavior. American Journal of Clinical Hypnosis, 1961, 4, 69-89.

Weitzenhoffer, A. The nature of hypnosis part II. American Journal of Clinical Hypnosis, 1963, 6, 40-72.

Weitzenhoffer, A., and Hilgard, E. Stanford Hypnotic Susceptibility Scale, Forms A & B. Palo Alto, Calif.: Consulting Psychologists Press, 1959.

Weitzenhoffer, A., and Hilgard, E. Stanford Hypnotic Susceptibility Scale, Form C. Palo Alto, Calif.: Consulting Psychologists Press, 1962.

Weitzenhoffer, A., and Sjoberg, B. Suggestibility with and without "induction of hypnosis." Journal of Nervous and Mental Disease, 1961, 132, 204-220.

White, R. Two types of hypnotic trance and their personality correlates. The Journal of Psychology, 1937, 3, 279-289.

White, R. A preface to the theory of hypnotism. Journal of Abnormal and Social Psychology, 1941, 36, 477-505.

Willoughby, R. Field-dependence and locus of control. Perceptual and Motor Skills, 1967, 24, 671-672.

Witkin, H., Lewis, H., Hertzman, M., Machover, K., Meissner, P., and Wapner, S. Personality through perception. New York: Harper and Brothers, 1954.

Witkin, H., Dyk, R., Faterson, H., Goodenough, D., and Karp, S. Psychological differentiation. New York: John Wiley and Sons, 1962.

APPENDICES

APPENDIX A

EYE FIXATION INDUCTION PROCEDURE

The subject will sit in a comfortable chair with arm rests and a head rest. The chair will be placed approximately 4 feet from a wall. A tack will be placed on the wall in front of the chair in such a manner that the subject, with her head kept level, must focus her eyes upward in order to see the tack. The subject will be asked to take a seat in the chair. The hypnotist will sit to the side and slightly behind the subject. The following will be spoken in a soft soothing, semi-monotone, syncopation. The induction will proceed as follows with minor variation:

"Now get as comfortable as possible. Rest your head on the back of the chair and put your feet firmly and comfortably on the ground. Lean back in the chair and relax. Try and relax as much as you can."

Suggestions for relaxation will be mentioned as much as necessary as the hypnotist continues talking with the subject.

"Look straight ahead, but raise your eyes so that you are looking up at the tack. Fix your eyes on the tack. Very good."

The object is to have the subject strain her eyes by looking up. The resulting strain on the eyelids generally produces muscle strain, tearing or watering, blinking, and a "heavy" feeling about the eyelids with the accompanying sensation of a desire to close the eyes.

> Looking up at the tack, after awhile your eyelids will begin to get heavier. More and more tired. Eventually your eyes will close. As you look up at the tack your eyes are getting heavier and heavier. They will get heavier and heavier, heavier and heavier. Your eyelids are getting heavier and heavier, wanting to close. The heavier your eyelids get, the better. Relax your eyelids.

If the eyelids have not begun to blink by this time, the hypnotist will say: "Soon your eyelids will begin to blink. That is a good sign that they are getting heavier and heavier . . . tired and more tired."

The hypnotist will keep up a relaxed "patter," calling attention to the usual bodily feelings people do not normally think about. For example: "Feel the weight of your feet. Feel the weight of your legs (arms) against the chair. Feel the weight and pull on your eyelids."

The hypnotist will carefully watch the eyes of the subject and will comment each time the eyes blink. Suggestions will be made that the eyes will blink again in the future and the frequency of the blinking will increase. Comments will also be made regarding the subject's breathing. These comments will be synchronized with the subject's inhalations and exhalations. "Breathing in and out . . . in and out." "Blinking more and more."

The hypnotist's voice will become slower and slower, softer and softer, and will be used to emphasize the desired phenomena which he observes in the subject. The hypnotist

will say regarding the eye blinking: "Soon the blinking will increase. Your eyes will blink more and more. More and more. It's getting harder and harder to keep them open. Feel the eyelids tear." (If tears appear.) As the eyes blink more frequently, the hypnotist will say:

> There, they blinked again, and again. And blinking more and more frequently now. Ah, there they go again, blinking more and more. It's harder and harder to keep them open. Soon they will get so heavy you'll close them.

If the subject still is fighting to keep his eyes open the hypnotist will say: "You're trying very hard to keep them open, but it's becoming harder and harder to do so." If the eyes still remain open, the hypnotist will say:

> If you wish to go into a deeper state of relaxation, all you have to do is let your eyes close tightly . . . very tightly. At the count of three you will close your eyes not because you have to, but because you really wish to go deeper and deeper relaxed. (1) Your eyelids are getting even heavier. (2) Much heavier. (3) Now close your eyes tight. Very good . . . resting and relaxing now, deeper and deeper . . . falling into a restful, sleep-like state.

If the subject closes his eyes without the above direct suggestion, the hypnotist will say: "Very good! The eyes are closed now, as you sink into a restful sleeplike state. Resting and relaxing; deeper and deeper; sinking deeper and deeper . . ." etc.

This "patter" (deeper and deeper) will be continued for two minutes or more. The "patter" will be synchronized with the subject's breathing and the words of the "patter" will

be elongated and stretched in an effort to have the subject's inhalations and exhalations match the hypnotist's "patter."

After the two minutes or so have elapsed, the hypnotist will ask the subject to imagine a long winding staircase with the subject at the top. The subject should raise her right hand when she has such an image. Then the hypnotist will say:

> Good. Lower your hand. (Pause.) Now I want you to slowly begin to descend the staircase one step at a time. With each step you will sink deeper into hypnosis. Raise your right hand to let me know when you have reached the bottom of the staircase.

Following this procedure, the hypnotist will continue his "patter" of sinking deeper and deeper, etc. for another minute. The hypnotic deepening steps of Handler (1975) will then be used. They are as follows:

> 1. Arm Heaviness. The hypnotist says: "I am going to hold your right arm out in front of you and when I let go you'll find that you'll be able to hold it in front of you yourself without any trouble. Now I am going to count from one to ten and as I count, it will become heavier and heavier until by the time I count ten it will be as heavy as a chunk of lead." The hypnotist will count to ten and if the arm drops progressively downward the subject will have passed the item. The hypnotist then says: "Very good. Your arm will now return to normal and you will sink deeper into restful, relaxing hypnosis." (This suggestion will be made after each step and will not be repeated in the text to follow.)
>
> 2. Hand Lock: The hypnotist says: "Now I am going to hold both of your arms out in front of you so that your hands clasp together. Then you will find as before that when I release your arms you will be able to continue to hold them in front of yourself without any difficulty. I am going to count from one to ten

and as I count your hands will lock tighter and tighter together as though they were in the jaws of a vise. As I count it will be as though the screw in the vise is tightening, forcing your hands closer and closer together." (After counting, a challenge follows.)

3. Arm Catalepsy: The hypnotist says: "I am going to hold your arm out in front of you and when I let go you can hold it up yourself as before with ease. I am now going to count to ten and as I count the muscles in your arm will become so rigid that your arm will be like an iron bar." The hypnotist will count and then challenge.

4. Automatic Movement. The hypnotist says: "Now I am going to take your arms out in front of you and rotate them one around the other." After this is done the hypnotist says: "I will now let go and you will find that you will be able to continue rotating them yourself." (Pause.) "Now I am going to count to five and as I do so your arms will rotate faster and faster so that by the count of five it will seem as if your arms are independent of your body." The hypnotist will count and then challenge.

5. Visualization. The hypnotist says: "I want you to visualize what you last had to eat and when you have done so signal me by raising your left hand."

6. Dream: The hypnotist says: "Now when I count to three you will have a dream or dreamlike thoughts. I want you to raise and lower your left hand to tell me when you've started, and raise and lower your left hand when it's reached some kind of conclusion."

7. Hyperasthesia: The hypnotist says: "I now want you to visualize yourself at one end of an empty corridor looking towards the other end. Raise your left hand when you see this. At the other end of the corridor you will see a pail. Raise your left hand when you see it." (Pause.) "I want you to walk down the corridor toward the pail. Tell me when you get there by raising your left hand." (Pause.) "In the pail you will see some water. Tell me when you see the water." (Pause.) "You'll get an urge to plunge your hand into the water--you do

plunge your hand into the water and you'll find the water is hot. Your hand is sore and tender. If you touch it it will hurt." (The hypnotist will touch the hand and observe reactions.)

8. Anesthesia: The hypnotist says: "I now want you to signal me by raising your left hand if you have ever experienced your arm going to sleep so that it might be a little bit tingly. I want you to signal me by raising your left hand if your arm, when it was going to sleep, not only became tingly but also somewhat numb. I am now going to hold your right arm and grasp it near the shoulder so that I partially close off the circulation to your arm which is just what happens when your arm has gone to sleep. When your arm and hand just feel tingly or numb signal me by raising your left hand." (The hypnotist will ask for a signal when the hand becomes very numb, as numb as it has been before, and number than it has been before.) After a few minutes the hypnotist will say: "I am going to take my hand away and the numbness will remain. I am going to press a pointed instrument on the back of your hand. The only thing you will feel, if anything, will be pressure. I will do the same to your other hand. Raise your left hand if you feel any difference." (The hypnotist will continue to do this until he observes a reflex from the left hand.) "Any time I stroke your hand three times you will experience the numbness you feel in your hand now. If I stroke your hand again three times the numbness will disappear and all normal feelings will return."

9. Amnesia: The hypnotist will say: "Have you ever awakened from a dream with a start? If so nod your head. Shortly after I count from one to three you will have a dream. Shortly thereafter you will awaken suddenly from this dream with a start and you'll be fully awake. Like with many dreams, you know you had a dream but can't remember it." (The hypnotist will check to see if they've had this experience.) "So you'll not be able to remember the dream and you won't be able to remember anything that's happened in this session. Furthermore, the harder you try to remember it, the more it will slip away. It will be just like having something on the tip of your tongue but you can't recall it. The harder you try, the less you can

remember. Everyone has had something like this happen to them. Whenever I say 'Okay you can remember,' you will be able to remember everything about it that you want to remember."

10. Hallucination: The hypnotist will say: "Visualize a small bottle partly filled with a transparent liquid.--Raise your left hand when you see it." (Pause.) "As you continue looking at it, it will gradually turn pinkish. Again raise your left hand when this happens." (Pause.) "As you continue to look at it further, it will turn from a pinkish color to red. Raise your left hand when this happens." (Pause.) "Now I am going to ask you to open your eyes and you can do so without awakening in the slightest. Open your eyes." (The hypnotist will hold out a bottle.) "You will see I am holding a bottle like the one you visualized. It will turn pinkish. Raise your left hand when it does." (Pause.) "Now it will turn reddish. Raise your left hand when it does." (Pause.) "Very good. Now close your eyes. Now I am going to ask you to open your eyes again and again you'll not awaken in the slightest. When you do open them, you'll see a candle on the table in front of you that is lit. I want you to blow it out for me. Open your eyes." After the subject blows it out the hypnotist will say: "Close your eyes again." (Pause.) "Now I am going to count backwards from ten to one. With each number you will become less and less hypnotized. By the time I reach one your eyes will be open and you will no longer be hypnotized." (The hypnotist will then count backwards from ten to one.)

APPENDIX B

The questionnaire given to all subjects is included in this appendix. The first thirty-eight items are taken from Field (1965). Item 45 is adapted from Field (1965). Items 39-45, 47, 51 and 56 are adapted from Ås and Østvold (1968). Items 48-50 and 52-55 are adapted from Brenman, Gill and Hacker (1947). Items 46 and 57 are adapted from Sutcliffe (1961). Items 58-61 are adapted from Weitzenhoffer (1963).

QUESTIONNAIRE

The following statements deal with how you may have felt and what you may have experienced during hypnosis. In the space before each item put a number which corresponds to the following code:

4: This is very much like my experience while I was hypnotized.

3: This is somewhat like my experience while I was hypnotized.

2: This is a little bit like my experience while I was hypnotized.

1: This is not at all like my experience while I was hypnotized.

It is crucial that the answers you give are truthful and accurately reflect your experience of hypnosis. Answer all items. Please take as much time as you like.

_____ 1. Time stood still.

_____ 2. My arm trembled or shook when I tried to move it.

_____ 3. I felt dazed.

_____ 4. I felt aware of my body only where it touched the chair.

_____ 5. I felt I could have tolerated pain.

_____ 6. I could have awakened any time I wanted to.

_____ 7. I was delighted with the experience.

_____ 8. The experimenter's voice seemed to come from very far away.

_____ 9. I tried to resist but could not.

_____ 10. Everything happened automatically.

_____ 11. Sometimes I did not know where I was.

_____ 12. It was like the feeling I have just before waking up.

_____ 13. When I came out, I was surprised at how much time had gone by.

_____ 14. I came out of the trance before I was told to.

_____ 15. During the experiment I felt I understood things better or more deeply.

_____ 16. I was able to overcome some or all of the suggestions.

_____ 17. At times I was deeply hypnotized and at other times I was only lightly hypnotized.

_____ 18. During the final "countdown" to wake me up I became more deeply hypnotized for a moment.

_____ 19. At times I felt completely unaware of being in an experiment.

_____ 20. I did not lose all sense of time.

_____ 21. It seemed completely different from ordinary experience.

_____ 22. I was in a medium hypnotic state but no deeper.

_____ 23. Things seemed unreal.

_____ 24. Parts of my body moved without my conscious assistance.

_____ 25. I felt apart from everything else.

_____ 26. It seems as if it happened a long time ago.

_____ 27. I felt inhibited.

_____ 28. At times I felt as if I had gone to sleep momentarily.

_____ 29. I felt quite conscious of my surroundings all the time.

_____ 30. Everything I did while hypnotized I can also do while I am not hypnotized.

_____ 31. I could not have stopped doing the things the experimenter suggested even if I tried.

_____ 32. It was a very strange experience.

_____ 33. I felt amazed.

_____ 34. From time to time I opened my eyes.

_____ 35. I couldn't stop movements after they got started.

_____ 36. I had trouble keeping my head up all during the experiment.

_____ 37. My mind seemed empty.

_____ 38. It seemed mysterious.

_____ 39. I felt like I wanted to totally relax.

_____ 40. I wanted to just let myself go.

_____ 41. I felt a wish to surrender.

_____ 42. My inner thoughts interfered with the experiment.

_____ 43. It seemed as if I were observing myself during the experiment.

_____ 44. I trusted the hypnotist.

_____ 45. I was afraid I might reveal private matters while under hypnosis.

_____ 46. Things in the outside world seemed to be just like the hypnotist said they were.

_____ 47. I experienced the sensation of falling or floating or sinking.

_____ 48. I felt a change in my skin temperature.

_____ 49. My skin seemed sensitive at times.

_____ 50. I suddenly felt cold or warm.

_____ 51. My attention was very narrow and restricted.

_____ 52. During the experiment there were times when I suddenly felt dizzy.

_____ 53. I had a feeling of numbness.

_____ 54. Some parts of my body or my whole body seemed to change size.

_____ 55. My bodily sensations (feeling warm, cold, big, etc.) seemed to rapidly fluctuate or change.

_____ 56. My body or parts of my body felt very heavy.

_____ 57. I felt like I was playing a role and still had control over myself.

_____ 58. The hypnotist was in complete control.

_____ 59. At first I voluntarily went along with the hypnotist, but then I discovered that I couldn't assert my own will.

_____ 60. Despite my response to the suggestions I was not hypnotized.

_____ 61. I felt very resigned and detached.

APPENDIX C

Table 5

Means and Probability Values for Significance among Groups on the Individual Items of the Hypnosis Inventory

Question	FI	FD	F	P	FIL	FIM	FID	FDL	FDM	FDD	F	P
Q1	2.76	3.20	2.618	.108	2.2	2.9	3.2	3.4	3.0	3.2	2.060	.135
Q2	3.20	2.94	.832	.999	3.0	3.3	3.3	2.7	3.5	2.6	.793	.999
Q3	3.30	3.40	.190	.999	3.5	3.0	3.4	3.3	3.7	3.2	1.707	.189
Q4	2.13	2.87	6.135	.016	2.1	2.0	2.3	2.4	3.0	3.2	.545	.999
Q5	2.64	2.90	1.385	.243	1.8	2.9	3.3	2.4	2.8	3.5	1.060	.355
Q6	2.64	3.00	1.794	.183	1.9	2.6	3.4	2.5	3.5	2.7	2.061	.135
Q7	3.13	3.27	.343	.999	2.6	3.4	3.4	3.4	2.7	3.4	2.400	.098
Q8	2.90	2.80	2.006	.159	2.5	2.9	2.6	3.2	2.9	3.0	.613	.999
Q9	2.80	2.70	.141	.999	1.9	3.3	3.2	2.5	2.6	3.0	2.019	.141
Q10	2.77	3.13	2.481	.117	2.3	3.1	2.9	2.8	3.0	3.6	1.066	.352
Q11	2.00	2.44	2.182	.142	1.2	2.2	2.6	2.0	2.8	2.5	.865	.999
Q12	2.57	2.67	.128	.999	2.7	2.8	2.2	2.3	3.0	2.7	.893	.999
Q13	2.96	3.30	1.724	.192	2.2	3.2	3.5	3.3	3.6	3.0	3.328	.042
Q14	3.40	3.54	.235	.999	3.3	3.2	3.7	3.2	3.8	3.6	.718	.999
Q15	2.30	2.74	2.336	.128	2.1	2.4	2.4	2.7	2.6	2.9	.180	.999
Q16	2.86	3.20	2.184	.142	2.1	3.3	2.9	3.2	2.9	3.7	5.265	.008
Q17	3.10	3.14	.021	.999	3.1	2.9	3.3	3.4	2.9	3.1	.406	.999
Q18	2.36	2.80	1.853	.176	2.5	2.3	2.3	2.7	2.6	3.1	.340	.999
Q19	2.70	3.24	3.752	.055	2.2	2.5	3.4	3.2	3.1	3.4	1.114	.336
Q20	2.47	3.03	3.995	.048	1.6	2.7	3.1	3.6	2.8	3.0	4.037	.023
Q21	3.00	3.44	3.701	.057	2.9	3.0	3.1	3.5	3.4	3.4	.153	.999
Q22	2.77	2.67	.121	.999	3.0	2.9	2.4	2.9	2.9	2.2	.040	.999
Q23	2.56	2.70	.218	.999	2.1	3.0	2.6	3.0	2.6	2.5	1.890	.159
Q24	3.03	3.27	.772	.999	2.6	3.4	3.1	2.9	3.3	3.6	.441	.999
Q25	3.43	3.33	.251	.999	3.0	3.6	3.7	3.5	3.4	3.1	2.591	.082
Q26	2.17	2.57	2.365	.126	1.7	2.5	2.3	2.8	2.6	2.3	1.823	.169
Q27	3.00	2.76	.800	.999	2.7	3.1	3.2	3.0	2.6	3.0	.310	.999
Q28	2.80	2.80	0.0	.999	2.7	3.0	2.5	3.2	2.3	2.9	1.487	.234

Table 5 (continued)

Question	FI	FD	F	P	FIL	FIM	FID	FDL	FDM	FDD	F	P
Q29	2.80	2.44	1.800	.182	2.7	2.7	3.0	2.6	2.7	2.3	.550	.999
Q30	2.47	2.83	1.349	.249	2.3	2.0	3.1	3.1	2.7	3.0	.580	.999
Q31	2.70	2.86	.947	.999	1.7	3.2	3.2	2.5	3.3	3.1	.992	.999
Q32	2.90	3.10	.511	.999	2.8	2.9	3.0	2.8	3.4	3.1	.298	.999
Q33	2.83	3.03	.535	.999	2.6	2.8	3.1	2.8	3.3	3.0	.401	.999
Q34	3.60	3.66	.120	.999	3.5	3.9	3.4	3.4	3.8	3.5	.210	.999
Q35	2.93	3.17	.870	.999	2.4	3.5	2.9	2.8	3.6	3.1	.124	.999
Q36	3.47	3.33	.324	.999	3.7	3.6	3.1	2.5	3.5	4.0	6.709	.003
Q37	2.86	3.10	.762	.999	2.8	2.7	3.1	2.8	3.3	3.2	.482	.999
Q38	2.43	2.67	.663	.999	1.9	2.5	2.9	2.8	2.7	2.5	1.719	.187
Q39	3.76	3.80	.070	.999	3.5	3.9	3.9	3.7	3.8	3.9	.488	.999
Q40	3.40	3.64	1.382	.243	3.2	3.5	3.5	3.3	3.8	3.8	.113	.999
Q41	3.10	3.46	2.637	.106	3.0	3.0	3.3	3.4	3.4	3.6	.022	.999
Q42	2.53	2.73	.633	.999	2.1	2.4	3.1	2.4	3.2	2.5	3.006	.056
Q43	2.46	2.40	.049	.999	1.8	2.6	3.0	2.7	2.7	1.9	3.691	.031
Q44	3.97	3.93	.333	.999	4.0	4.0	3.9	4.0	3.9	3.9	.333	.999
Q45	3.50	3.46	.020	.999	3.9	3.5	3.4	3.4	3.4	3.6	1.503	.230
Q46	3.50	3.50	0.0	.999	3.4	3.6	3.5	3.3	3.5	3.7	.270	.999
Q47	3.30	3.44	.341	.999	3.0	3.5	3.4	3.4	3.4	3.5	.405	.999
Q48	2.43	2.93	2.402	.123	1.3	2.7	3.3	3.0	3.2	2.6	4.612	.014
Q49	2.83	2.53	1.086	.302	2.4	2.8	3.3	2.0	2.9	2.7	.523	.999
Q50	2.13	2.57	2.015	.158	1.3	2.2	2.9	2.9	2.2	2.6	3.731	.029
Q51	2.56	3.00	5.143	.026	2.5	2.3	2.6	3.0	2.9	3.1	.020	.999
Q52	2.47	2.33	.145	.999	2.6	2.1	2.7	2.0	2.5	2.3	1.120	.334
Q53	3.60	3.60	0.0	.999	3.8	3.4	3.6	3.7	3.7	3.4	.995	.999
Q54	2.04	2.40	1.268	.264	2.1	2.2	1.8	2.5	2.6	2.1	.010	.999
Q55	1.93	2.27	1.275	.263	1.4	2.0	2.4	2.2	2.3	2.3	.778	.999
Q56	3.77	3.83	.250	.999	3.9	3.7	3.7	3.6	4.0	3.9	1.938	.152
Q57	2.40	2.46	.057	.999	1.7	2.3	3.2	2.5	2.3	2.5	1.992	.144
Q58	2.50	3.04	6.000	.017	1.6	3.0	2.9	2.7	3.1	3.3	1.852	.165

Table 5 (continued)

Question	FI	FD	F	P	FIL	FIM	FID	FDL	FDM	FDD	F	P
Q59	2.70	3.14	3.358	.069	1.7	3.3	3.1	3.1	3.4	2.9	4.311	.018
Q60	3.50	3.60	.290	.999	3.0	3.5	4.0	3.3	3.6	3.9	.387	.999
Q61	2.56	2.50	.057	.999	2.3	2.7	2.7	2.4	2.6	2.5	.099	.999

Note: FI stands for field-independent subjects; FD stands for field-dependent subjects; L, M, and D, respectively, designate light, medium, and deep levels of hypnosis.

VITA

Robert Jeff Slavin was born in Wilkes-Barre, Pennsylvania, on December 26, 1948. He attended Franklin Street School in that city and graduated from Meyers High School in 1966. In September 1966 he entered Syracuse University and received a Bachelor of Arts degree in Psychology in June 1970. From September 1970 to June 1971 he was employed as a child care worker at Judge Baker Guidance Center in Boston, Massachusetts. In September 1971 he began graduate study in Clinical Psychology at The University of Tennessee. During his period of graduate study, he did one year of practicum work with Dr. Wahler on his research grant involving children in the Knoxville City Schools, and one year of practicum work at each of the following agencies: Daniel Arthur Rehabilitation Center, Oak Ridge Mental Health Center and The Helen Ross McNabb Center. In September 1975 he began a one-year internship in Clinical Psychology at Michael Reese Hospital in Chicago, Illinois. Upon completion of this internship he received the Doctor of Philosophy degree with a major in Psychology from The University of Tennessee in August 1976.