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THE UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

THE ROLE OF AMNESIA IN POST-HYPNOTIC BEHAVIOR

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

DOCTOR OF PHILOSOPHY

BY

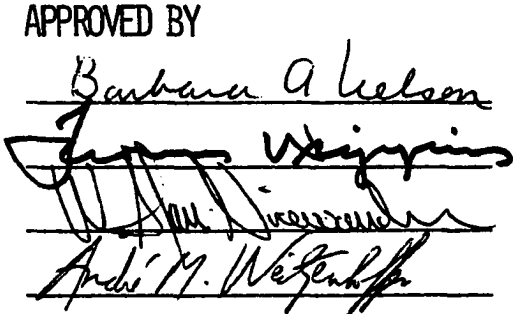
EDWARD SCOTT MEADOWS

Norman, Oklahoma

1974

THE ROLE OF AMNESIA IN POST-HYPNOTIC SUGGESTION

APPROVED BY



DISSERTATION COMMITTEE

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THE ROLE OF AMNESIA IN POST-HYPNOTIC BEHAVIOR

CHAPTER I

INTRODUCTION

Background of the Problem

It is readily apparent to the student of hypnotism that many remarkable changes, in both psychological and physiological processes, can be produced through the use of hypnosis. (Bernheim, 1887; Moll, 1890; Bramwell, 1908; Hull, 1933; Lecron, 1947; Wolberg, 1948; Weitzenhoffer, 1953, 1957; Estabrooks, 1957.)[1] The changes thus produced may manifest themselves in overt behavior, sensory processes, cognitive functioning and in various other ways. It is the maximal therapeutic use of suggestion, as used in connection with hypnosis, to which this research is devoted. It is not sufficient for the purposes of therapy to be able to bring about changes or improvements within the confines of the treatment room. To be of relevant value to the client the beneficial effects of the hypnotic procedure

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[1] Other reputable investigators, notably Sarbin (1950, 1963) and Barber (1958, 1962, 1966), advocate that identical changes can be brought about under conditions other than hypnosis. These theories are discussed on pages 7 and 8.

must have the capacity to transcend such boundaries and extrapolate to other areas. In other words, they must carry over into the client's daily life. In some cases, it is through the use of post-hypnotic suggestion, given during the hypnotic trance, that the hypnotherapist makes this important transition.

What then can the therapist do to maximize the effects of post-hypnotic suggestion in hypnotherapy and increase the liklihood of this crucial element being acted upon? There are a great many variables within the therapist, the client and the setting which influence the hypnotherapeutic process. Some of these can be controlled. Other variables cannot be controlled, even if understood, and still others are not understood. Indeed, even the precise nature of the phenomenon itself continues to evade researchers after nearly two centuries of investigation.

Amnesia, however, has been one consistent characteristic of hypnosis, (Bernheim, 1887; Moll, 1890; Bramwell, 1908; Hull, 1933; LeCron, 1947; Wolberg, 1948; Weitzenhoffer, 1953, 1957; Estabrooks, 1957). Early investigators were aware that many hypnotized persons exhibited a spontaneous amnesia for events that took place during the hypnotic trance and upon awakening were unable to remember them. Subsequently, it was discovered that persons who did not exhibit spontaneous amnesia would often be amnesic if amnesia suggestions were given during the trance itself. Amnesia in hypnosis has since be-

come the topic of numerous writings and prompted yet another question. Are post-hypnotic suggestions for which the person is amnesic more likely to be carried out than those which are remembered? The influence of the person's conscious knowledge of the content of a post-hypnotic suggestion on carrying out the suggestion is possibly an important issue which may have relevance to hypnotherapy.

Consequently, this research was designed to investigate further the relationship between suggested amnesia and post-hypnotic behavior. This investigator's purpose was to further study and define the relationship and to interpret and discuss the findings with respect to their therapeutic implications.

Aside from the conceptual implications of this research, it is anticipated that the study will have practical value in the treatment of various problems through hypnosis and post-hypnotic suggestion by further delineating the role of amnesia in the treatment process.

Statement of the Problem

The problem for this research is: What is the nature of the relationship between suggested amnesia and the carrying out of post-hypnotic suggestions?

This investigator is aware of the distinctions made between spontaneous and suggested amnesia but did not attempt to treat the former as a distinct or separate variable for the purpose of this research inasmuch as they produce id-

entical results. The experimental design, however, was constructed so as to determine the presence or absence of spontaneous amnesia as was relevant to the study. It is also recognized that there is disagreement among researchers with respect to the phenomena of suggested and spontaneous hypnotic amnesia and what is involved in each. For the purposes of this study, however, the subject's verbal report that he cannot remember or has forgotten, as defined in the interview (Appendix D), satisfied the criteria for amnesia.

Another important aspect of post-hypnotic suggestion is the duration of it's effectiveness. Duration, while not to be subject to experimental consideration in the present study, is thought to be of such related importance that it is briefly discussed (Appendix H).

Finally, it is recognized that post-hypnotic responses can be manifested in several different physiological and psychological forms such as cognitive thought processes, sensory responses and motor activity. The present study was limited to testing only motoric responses due to their ready observability and the ease of data collection.

Definition of Terms

The below listed terms are defined as follows for the purposes of this study.

Hypnosis: An artifically induced state, sometimes resembling sleep, but physiologically distinct from it, which is characterized by a heightened suggesti-

bility, as a result of which various changes may usually be induced in the subject more readily than in the normal state. Hypnosis is often measured in terms of depth depending upon the degree of susceptibility present.

Trance: Synonomous with hypnosis.

Waking state: A person's state who is non-hypnotized/ not in a state of hypnosis but rather in his normal mental state of awareness.

Hypnotism: The art and science of producing and utilizing hypnosis as distinguished from hypnosis which is the phenomenon itself.

Motoric response: Response involving observable action or movement.

Post-hypnotic response: A response which occurs in the waking state as a result of a previous hypnotic suggestion intentionally aimed at it's elicitation.

Suggestion: The communication of an idea, usually verbal, from one person to another designed so as to elicit or bring about non-voluntary changes in behavior or mental processes.

Post-hypnotic suggestion: A suggestion given to a hypnotized person to behave (respond) in a specified manner upon presentation of a predetermined signal which occurs after and does not become effective until after termination of the trance.

Post-hypnotic signal: A specific stimulus, predetermined during the hypnotic state, given after waking, and designed so as to activate a post-hypnotic suggestion which elicits a desired response. The stimulus (signal) may be any sensory input, a specified time, or a specified time interval. The post-hypnotic signal for this study is verbal in the form of the word "okay/now".

Suggestibility: The capacity of an individual to be affected by such influences as may be called suggestions.

Somnambulism: A deep state of hypnosis characterized by a very high suggestibility and spontaneous amnesia.

Spontaneous amnesia: A state of amnesia, upon awakening from hypnosis, for the events having taken place during the hypnotic state without intervention on the part of the hypnotist to produce it.

Suggested amnesia: A state of amnesia, upon awakening from hypnosis, for the events having taken place during the hypnotic state which comes about as a result of a specific suggestion by the hypnotist that it will occur.

Theoretical Framework

There is yet no single established comprehensive theory of hypnosis. Despite the vast amount of inquiry and research that has been conducted and numerous works on the subject that have been published, the true nature of hypnosis

remains a mystery. Nevertheless, research and clinical investigations have yielded enough information to enable various attempts at constructing such a theory.

Generally speaking, all such attempts at formulating a theory of hypnosis can be categorized as adhering to one of two viewpoints, skeptical or classical. Although the choice of words may be questionable, they serve as a point of departure toward understanding the different positions.

Those who hold a classical view of hypnosis feel that it involves a definite change in psychic state, often referred to as an altered state of consciousness, and that it is through the hypersuggestibility, characteristic of this induced state, that hypnotic phenomena are non-voluntarily produced.

The skeptical view denies the existence of such a hypnotic state and expounds that, rather than being in any way special, hypnotic phenomena can be explained in terms of voluntary waking behavior.

Two well known skeptical theories are those of Barber (1958, 1962, 1966) and Sarbin (1950, 1963). Sarbin's role theory advocates that there is no hypnosis or suggestion but rather that the subject, based upon his preconceptions of what hypnosis is and what it entails, assumes the role of a hypnotized person as he perceives it. This effect is enhanced by implicit and explicit cues regarding desired behavior which the hypnotist communicates in the process of trance induction. In effect, the actions of both hypnotist and subject are de-

termined by the situation in which both participants are enacting reciprocal roles which may be influenced at a subconscious level.

Barber states that an increase in motivation on the part of the subject can account for the occurence of phenomena traditionally associated with the trance state and that awake subjects are as responsive to suggestion as hypnotized subjects if properly motivated. The induction procedure serves not to establish trance but to motivate the subject to perform as expected.

Thus, for the skeptic, trance and induction are not considered necessary to bring about the increase in suggestibility or the behavior and experiences usually regarded as hypnotic phenomena. Hypnotic behavior is not unique or isolated from other waking forms of voluntary behavior. Since the skeptics see hypnotic and post-hypnotic behavior as being a voluntary function on the part of the subject for them amnesia plays no appreciable role in the execution of post-hypnotic behavior.

Those holding a classical view of hypnosis (White, 1941; Weitzenhoffer, 1953, 1957, 1963) adhere to the belief that a change in psychic state, which can be held to account for subsequent behavior and experience does, indeed, occur following an hypnotic induction procedure. While perhaps not in complete agreement, traditionalists place more emphasis on the role of amnesia as a real phenomenon and as such as hav-

ing a direct bearing on the facilitation of post-hypnotic responses.

The classical view of hypnosis, as defined above, provides the theoretical base for this study and generated the following hypotheses.

Hypotheses

General Hypothesis

There exists a significant relationship between amnesia and post-hypnotic suggestion as it pertains to the execution of a post-hypnotic suggestion.

Specific Hypotheses

Hypothesis I. Subjects who are amnesic for the post-hypnotic suggestion will perform the suggested behavior and experience their post-hypnotic response as being of a non-voluntary nature with greater frequency than those who remember it.

Hypothesis II. Subjects who are amnesic for the post-hypnotic suggestion will exhibit a more rapid post-hypnotic response reaction time, measured in seconds, than those who remember it.

Hypothesis III. The amnesic subjects who respond to the post-hypnotic signal will exhibit a more complete response than those who respond and are non-amnesic.

CHAPTER II

RELATED LITERATURE

In reviewing the literature two concepts of hypnotism relevant to the present study were examined, amnesia and post-hypnotic suggestion.

It becomes readily apparent from what follows that the existence of spontaneous amnesia was known very early in the history of hypnotism, as was post-hypnotic suggestion, but that suggested amnesia was unknown until nearly a century after Mesmer introduced animal magnetism (later called Mesmerism, then hypnotism) in 1774. Since that time the relationship between the two has generated considerable debate and study yet remains unresolved today.

As early as 1784 the Marquis de Puysègur wrote about spontaneous amnesia (Moll, 1890). Moll also quotes the following instance of post-hypnotic suggestion from Du Prel. "In 1787, Mouillesaux ordered a lady in the hypnotic state to pay a visit to a certain person the next day. The command was exactly obeyed." Thus, we can conclude that within thirteen years of Mesmer's discovery both spontaneous amnesia and post-hypnotic suggestion were well known.

Ninety nine years later Gurney (1886) published an article which was primarily concerned with defining the psychological state of the individual in the act of carrying out a post-hypnotic suggestion and, although he never addressed the effect of the subject's recollection of the post-hypnotic command on it's execution, he was extremely interested in the importance of subsequent memory for the post-hypnotic action executed. A careful examination of the experiment reported reveals that such a rememberance for the suggestion can have a bearing on it's execution, however, as is evident in the following example. Miss S. was hypnotized and given a simple post-hypnotic suggestion. Upon awakening she said, "I know what you want me to do but I don't want to do it. It is too absurd." Subsequently she did not carry out the suggestion. This is the only such instance reported by Gurney and it would seem from reading his other reports that the majority of his subjects experienced amnesia, probably of a spontaneous nature since no mention is made of suggested amnesia. The relevance of this particular example is quite clear. The subject's conscious memory of the post-hypnotic suggestion obviously played a part in inhibiting her carrying it out.

A year later Bernheim (1887) published his now classic book, De la Suggestion et de ses Applications a la Therapeutique (English translation entitled Suggestive Therapeutics.). In it he does not address the subject of suggested amnesia

or the effect of memory for the suggestion in relation to it's execution. Pursuing Bernheim's account, however, leads to certain considerations. He found that some subjects resisted post-hypnotic suggestions, often evidencing an internal struggle. It is this investigator's contention that the internal struggle and resistance was contributed to by a partial or complete recollection of the post-hypnotic suggestion. Bernheim never mentioned suggested amnesia but the following quotes from his work are evidence of his subjects experience of amnesia. "I put him into a deep sleep with loss of memory on waking." And, with reference to another subject, "Since then, I have put him in a profound sleep with loss of memory on waking."

One of two conclusions might be drawn from these accounts. Either Bernheim was suggesting amnesia and simply didn't report it or he was merely describing incidents of spontaneous amnesia. The latter seems more plausible inasmuch as Bernheim was a competent researcher and not likely to omit describing the use of suggested amnesia which, as of that time, was yet unreported in the literature.

Bernheim's contemporary, Björnström (1887), was aware of the hypnotist's ability to induce amnesia by suggestion, however, as is evident in reading the following quote from his book also published in 1887. "Moreover the memory can become the object of a negative suggestion, and total or partial loss of memory-amnesia-with reference to certain

things and circumstances can be produced this way." Thus, we have one of the first, if not the first, recorded instance of the use of suggested amnesia.

It fell to Moll (1890) to first consider post-hypnotic suggestion and amnesia in relation to one another. He was concerned as to whether the execution of a post-hypnotic suggestion was influenced by the memory of having been given the suggestion while hypnotized. Moll concluded that the suggestions themselves could be divided into two groups. In the first group are those post-hypnotic suggestions which are forgotten upon awakening. The second group is comprised of those post-hypnotic suggestions which, upon awakening, are remembered. According to Moll, loss of memory for the suggestion given enhances the probability that it will be carried out. He believed that if the suggestion is remembered upon waking, reasoning is possible and thus the suggestion more likely to be negated. Subjects who remember the suggestion are always more conscious of the compulsion which it exercised upon them than those who do not remember. The latter often believe they have acted of their own accord. Sometimes remembered suggestions succeed only with difficulty and after a long struggle with the subject's resistance as a consequence of this conscious awareness. It is not possible to ascertain whether Moll's remarks pertain to suggested or spontaneous amnesia since he makes no distinction nor is it necessarily important. The main point is, whether suggested

or spontaneous, amnesia would seem to have a bearing on compliance with post-hypnotic suggestion.

It is evident that Bramwell (1908) was well aware of the distinction between suggested and spontaneous amnesia as is evidenced by his statement that, "Suggestion may partly or entirely suspend or destroy memory and so create an artificial amnesia. The memories of hypnosis which might have arisen are prevented from doing so by the suggestion of the operator. This power of suggesting post-hypnotic amnesia is often of therapeutic as well as experimental value." From the above it is certain that Bramwell was familiar with the concept of suggested amnesia. Equally important and not previously defined, even though perhaps understood, is his recognition of suggested amnesia as an artificially created phenomenon. Unfortunately, Bramwell cites no examples in support of his remarks nor does he expound further upon the matter.

Wynn (1939) while mentioning the interest Liébeault, Richet, Bernheim and Delboeuf had in the study of post-hypnotic amnesia, makes a broad statement attributing to them the use of suggested amnesia. "Soon they found also that an appropriate suggestion during the trance will produce the same effect (amnesia), even if the state was not very deep." The importance of this statement lies not in the attempt to attribute the phenomena to four researchers simultaneously, but in recognizing the very important fact that, whereas

spontaneous amnesia is generally believed to be the result of a deep hypnosis, suggested amnesia, producing the same result, requires a lesser degree or depth of hypnosis. Wynn also quotes Schilder and Kauder (1929) with respect to the importance of amnesia as a facilitator of post-hypnotic response. "Post-hypnotic commands are as a rule better executed if amnesia is present." Wynn concludes by defining the two types of amnesia as an automatic result of deep trance (spontaneous) or as an intentional inhibition of memory (suggested).

Erikson's (1941) statement that the "Post-hypnotic act is...marked by an absence of any demonstrable conscious awareness in the subject of the underlying causes and motive for this act" and that there is "usually evidence of an amnesia, either partial or complete, for both the post-hypnotic act and the concurrent events arising out of the immediate situation" is not completely valid as has been pointed out by Barber (1962) and Sheehan and Orne (1968). Their criticism is based upon the fact that Erikson fails to acknowledge that many subjects do remember the post-hypnotic suggestion and yet carry it out thus verifying that post-hypnotic amnesia is not necessary for post-hypnotic behavior to occur. Barber further states that the experimenter can alter the effect of amnesia or recall with specific suggestions to the desired effect or by manipulating the situation so that the subject believes he can remember or is unable to do so. It would

seem then that Erikson's remarks would, therefore, be more appropriately applied to the occasionally encountered occurrence of spontaneous amnesia. Additional remarks about Barber's findings, as well as those of Sheehan and Orne, will follow.

LeCron (1947) states, "If there is no amnesia subsequent to trance and the subject, therefore, is aware of the post-hypnotic suggestion, the force isn't lessened." This investigator questions the validity of this statement. The force of the post-hypnotic suggestion may be lessened by a conscious awareness.

This investigator agrees with Wolberg (1948), who makes the very important point that reasonable "commands" (suggestions), in keeping with the subject's personality, are more likely to be carried out than those that aren't. Others may be carried out but might create conflict. Wolberg continues by saying that in some cases post-hypnotic suggestions will be carried out subsequent to light trance and with the subject remembering the suggestion but that, in most cases, post-hypnotic suggestions are more effective after deep trance followed by amnesia.

Weitzenhoffer (1950) comes to essentially the same conclusions as Wolberg by writing that the nature of the task suggested is a determinant of it's effectiveness and that light trance subjects are usually aware of the post-hypnotic suggestion before and after carrying it out.

Fisher (1954) introduced a variable other than amnesia into the determination of post-hypnotic compliance. On the basis of his experiment he concluded that the effectiveness of post-hypnotic compliance is contingent upon the setting, the subject's expectancy, the subject's interpretation of the experimenter's expectation, and is limited to a specific setting which is perceived as part of the experiment by the subject. Weitzenhoffer (1957) calls into question Fisher's findings on the basis of procedural issues which he believes confound the results. Orne, Sheehan and Evans (1968) also disagree with Fisher and relate that their findings indicate that a post-hypnotic suggestion may yield behavioral responses outside of and perceived as unrelated to the setting in which it was given and that it is not dependent on the subject's perceptions of the expectations of the hypnotist.

Weitzenhoffer (1957) summarizes this investigator's position on the matter quite succinctly as follows: "Although it is certainly not essential, post-hypnotic suggestions are believed to be more effective if amnesia for them is present. Consequently, it is usual to emphasize before dehypnotizing the subject that he will have such an amnesia. If the subject is not aware of the post-hypnotic suggestion he will not be able to influence it at the conscious level through such factors as attitudes, expectations and will, hence, any possible resistance is minimized."

Barber (1959) in testing post-hypnotic behavior gave

seven somnambulistic (deep trance) subjects post-hypnotic suggestions with concomitant amnesia suggestions. Upon awakening and receiving the post-hypnotic signal from the experimenter, each subject performed the post-hypnotic act. Even though the subjects made the association between the post-hypnotic signal and the post-hypnotic act they didn't know why it effected their behavior. In another series of experiments three somnambulistic subjects were given the same post-hypnotic suggestion but with instructions for amnesia being omitted. Barber states that "although these subjects were able to remember, they carried out the post-hypnotic behavior in essentially the same way as the subjects who had amnesia for the hypnosis." The use of the word "essentially" is important and will be referred to again later. Barber continues, "The only difference between the behavior of the subjects who couldn't remember the post-hypnotic suggestion and the subjects who remembered was that the subjects who remembered commented on why they felt compelled to carry out the post-hypnotic suggestion." Examples were, "I know why but it still persists and I guess I'm trying to think of an excuse to do it." and "I think I'll feel better if I do what you said." From these experiments Barber concludes, "Whether the subject does or does not have amnesia for the post-hypnotic suggestion is relatively unimportant. Amnesic and non-amnesic subjects carry out the post-hypnotic suggestions in essentially the same way." As mentioned pre-

viously, the use of the word essentially is not exact and implies that there were indeed differences in the post-hypnotic behavior of the two groups. In other words, the results were almost, but not quite, the same. The difference is obvious. The subjects who remembered the post-hypnotic suggestion displayed resistance and hesitancy in carrying out the post-hypnotic act. This behavior was not in evidence in those who were amnesic for the hypnotic experience. This hesitancy and resistance, seen to occur in an innocuous experimental setting, could be complicated considerably in the setting of a clinical practice. The post-hypnotic suggestions given are frequently superimposed on strong pre-existing conscious and subconscious tendancies which may run counter to the acceptance of the suggestion.

Damaser (1965) states that while she found no invariant association between amnesia and other post-hypnotic behavior some subjects with recall demonstrated less persistence of post-hypnotic behavior than those without it.

Edwards (1965) found, as a result of his experiments, that "on the basis of 'average' behavior the efficacy of a post-hypnotic suggestion will not be impaired by simply telling the waking subject the content of the suggestion. There will be exceptions, however, and telling these subjects the content of the suggestion might decrease the liklihood of hypnotherapy being successful." If such is the case, why take the chance?

As a result of their review of the literature on the nature of post-hypnotic behavior and the replication of several studies, Sheehan and Orne (1968) made the following comments. First, amnesia is not a necessary or sufficient condition for post-hypnotic behavior to occur. Secondly, post-hypnotic suggestions can be effective if amnesia is not present but the best responders generally are amnesic for their experiences. Thirdly, fewer instances of defensive reactions occur when amnesia is present. Finally, under circumstances of awareness, subjects tend to resist rather than accept the post-hypnotic suggestion when they know that their behavior has been influenced by the hypnotist.

The preponderance of the reports cited substantiate the position that amnesia does, indeed, have a direct relationship to post-hypnotic behavior. The dissenting research, however, is of concern and dictates further study in the area in order to clarify the exact nature of the relationship. It was out of this disagreement that this research was generated and toward it's further understanding that it is dedicated.

CHAPTER III

METHODOLOGY

Selection of Subjects

The sample for this study was drawn from graduate and undergraduate students of all ages and both sexes enrolled in summer school courses at the University of Oklahoma.

Group pre-test screening sessions were held during which the subjects were given the Harvard Group Susceptibility Scale (Shor and Orne, 1962) (Appendix A), which is a revision of the Stanford Hypnotic Susceptibility Scale (Weitzenhoffer and Hilgard, 1959) adapted for group administration and self report scoring. The screening sessions continued until thirty subjects were selected from a sample of 209 on the basis of meeting the criteria established for passing on both the post-hypnotic suggestion and post-hypnotic amnesia sections of the scale as defined in Appendix A.

Procedures for Collecting Data

All subjects who met the criteria of susceptibility as measured by the Harvard Group Susceptibility Scale discussed above were then randomly assigned to one of two experimental conditions; the post-hypnotic suggestion with

concomitant suggested amnesia, followed by the post-hypnotic suggestion without suggested amnesia or vice versa. Thus, half the subjects received post-hypnotic suggestions with concomitant suggestions of post-hypnotic amnesia first and on a subsequent induction did not received the suggestion of post-hypnotic amnesia while the other half were studied in reverse order. This counterbalanced design served to control any possible order effect.

Screened subjects were scheduled for a second session during which they were hypnotized using a modification of the induction procedure contained in the Stanford Hypnotic Susceptibility Scale, Form A (Appendix B).

Prior to induction, a preliminary introductory statement was given to the subject to establish rapport and alleviate anxiety. The precise wording of this statement and that of the remainder of the procedures herein described for the collection of data, as well as instructions for the experimenter, are contained in the protocol (appendix C) and the interview (Appendix D).

Subsequent to the induction the subject was given a specific motoric post-hypnotic suggestion to the effect that after he awakened he would rub his head the next time the experimenter said the word "okay/now". A different post-hypnotic signal was used during the two phases of the experiment in order to avoid the possibility of stimulus generalization. Depending upon order, concomitant

suggestions regarding post-hypnotic amnesia were given or omitted as required. The subject was then dehypnotized using the format contained in the Stanford Hypnotic Susceptibility Scale, modified as necessary to accomodate the different post-hypnotic suggestion and to include or omit items pertaining to suggested amnesia. The entire procedure outlined above, from preliminary statement through dehypnotization, was pre-recorded on tape and played back to the subject to control for experimenter bias.

Following dehypnotization the post-hypnotic signal was given and the response measured. If a response occurred it was so recorded on a standardized form (Appendix E), the latency timed with a stopwatch, and the degree of the response, as indicated on the scoring form, recorded. The subject was then instructed to rub his head once more. This second act of rubbing the head served as a control in that it established a second movement, not in response to the post-hypnotic signal, against which the subject could compare the post-hypnotic response during the interview phase (Weitzenhoffer, 1974). Subjects who failed to respond to the post-hypnotic signal were also instructed to rub their heads so as not to leave them with a potentially unresolved post-hypnotic suggestion.

The subject was then tested for the presence or absence of post-hypnotic amnesia, regardless of order, as determined by the interview data accumulated in the administrtion of Appendix D. This was done to insure that subjects

who were given amnesia suggestions were truly amnesic for the events during hypnosis and to preclude confounding in the event that subjects not receiving amnesia suggestions manifested spontaneous amnesia.

At this point the suggested amnesia was removed and a structured standardized interview (Ary, et al, 1972; Kerlinger, 1973) (Appendix D) of the funnel type (Engelhart, 1972), beginning with broad and general inquiries and becoming more specific as required, was administered by the experimenter. This instrument was constructed so as to determine the voluntary/non-voluntary aspect of the subject's experience of responding to the post-hypnotic suggestion (Weitzenhoffer, 1974). This final point is considered of vital importance in determining the true nature of the post-hypnotic response. This investigator concurs with Weitzenhoffer (1974) that a suggestion effect involves for the subject a subjective experience of non-voluntariness in his compliance with the post-hypnotic suggestion

After concluding the interview the subject was administered the Field Inventory of Hypnotic Depth (Field, 1965) (Appendix F), a paper and pencil self report, to serve as a separation between successive conditions of the experiment and thus minimize interaction between them. This particular separation task was selected because of the possibility that it might provide additional data pertinent to future studies in hypnosis.

Upon completion of the inventory the subject received another informational statement, as contained in the protocol, and was then re-hypnotized using a tape recorded modification of the induction procedure contained in the Stanford Hypnotic Susceptbility Scale, Form B (Appendix G). Subsequent to the second induction the subject was given the same motoric post-hypnotic suggestion. If the subject received concomitant amnesia suggestions during the first trance they were omitted in this instance or vice versa. As previously, the subject was de-hypnotized, the post-hypnotic signal given, amnesia tested and identical response data recorded for this condition. Amnesia was then removed and the interview material recorded as before.

A pilot study was conducted to verify the feasibility of the study and to determine the applicability of the above procedures.

Design of the Study

The independent variable was the presence or absence of post-hypnotic amnesia suggestions. The dependent variables were the execution or failure to execute the post-hypnotic suggestion, the response time required in the event the suggestion was executed, the completeness of the executed suggestion and the subject's report of the act as voluntary or non-voluntary.

The basic design is one of repeated measures using the subject as his own control. All subjects were assigned to

both experimental conditions with the order of conditions counterbalanced. The experimental treatment consisted of selected values of the independent variable (amnesia/no amnesia).

Expressed in the symbolic code introduced by Campbell and Stanley (1966), the design would appear as:

R X_1 O_1 X_2 O_2

R X_2 O_1 X_1 O_2

Thus, each row represents a single group, O refers to a measurement or observation, R indicates random assignment to groups, and X represents exposure of the group to an experimental treatment.

Kerlinger (1973) states, "If the same subjects are used with different experimental treatments, called repeated measures or randomized blocks designs, we have a powerful control of variance. How match better /sic/ on all possible variables than by matching the subject with himself."

A comparison of the data was made between the two conditions so as to assess the relationship between suggested amnesia and post-hypnotic behavior.

The unit of analysis for this study was the individual subject.

Treatment of the Data

Hypotheses one and three yield binary data which were assigned values of one or zero. Hypothesis two yields continuous data measured in lapsed time (seconds).

The distribution of the binary data generated by hypotheses one and three met the requirements established by Mandeville (1971) for robustness, and the assumptions of the model were met, therefore, a repeated measures analysis of variance was used to analyze the data. Inasmuch as the continuous data generated by testing hypothesis two was not contingent upon the distribution of the data, a repeated measures analysis of variance was also used to analyze this data.

A separate analysis was performed on each independent variable.

CHAPTER IV

RESULTS AND DISCUSSION

The present study has made use of one group of thirty subjects in a repeated measures design in order to compare response differences as a result of including or omitting suggested amnesia instructions in conjunction with a specific motoric post-hypnotic suggestion. One half of the subjects were tested in the amnesia-no amnesia order and the remaining half were tested in the no amnesia-amnesia order.

The hypotheses for which this study was designed were tested by means of a repeated measures analysis of variance and a Z test for significance of differences between two proportions. The .05 level of significance was designated. The responses in each of the two experimental conditions were compared and the results of the analysis of these data are reported below.

The Results of the Tests of Hypotheses I and IA

Hypothesis I: Subjects who are amnesic for the post-hypnotic suggestions will perform the suggested behavior with greater frequency and IA: experience their post-hypmotic response as being of a non-voluntary nature more often than those who remember it.

Scoring for Hypothesis I was assessed on the basis of whether the subjects performed the suggested post-hypnotic task. Those subjects who performed the suggested behavior were assigned response values of one. Subjects not responding to the post-hypnotic signal were assigned response values of zero.

A repeated measures analysis of variance for Hypothesis I was significant beyond the .05 level thus indicating that there were significant differences between the two experimental conditions in this respect. Twenty-five of thirty subjects responded to the post-hypnotic suggestion in the amnesia condition whereas eighteen of thirty subjects responded to the post-hypnotic suggestion in the non-amnesic condition. The analysis of these data support the hypothesis that subjects who experience amnesia for the post-hypnotic suggestion respond more often than subjects who remember the suggestion. Hypothesis I is not rejected.

The results of the statistical analysis are summarized in Table 1 and graphicly depicted in Figure 1.

TABLE 1

F-VALUES OF MEAN DIFFERENCES FOR HYPOTHESIS I

Source	Mean Square	D.F.	F-Ratio	P
Total	0.2065	59.		
Trials	0.8167	1.	4.167	0.0478
Error (T)	0.1960	29.		
T Mean	1 0.8333	2 0.6000		

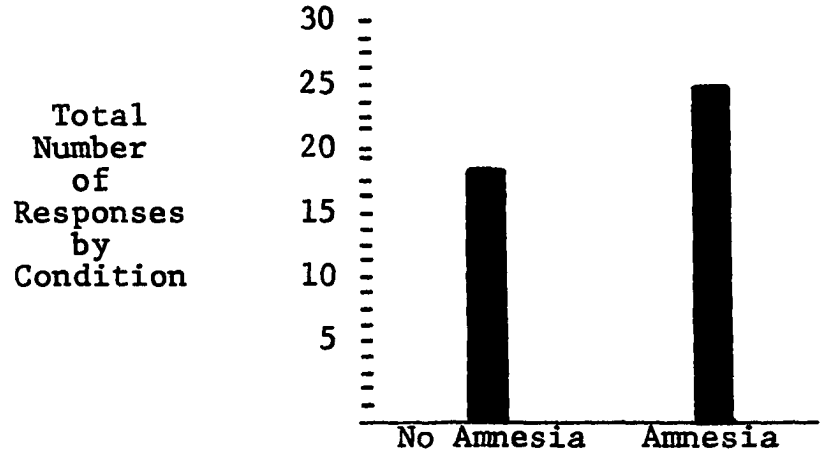


FIGURE 1

FREQUENCY OF RESPONSES IN THE TWO EXPERIMENTAL CONDITIONS, AMNESIA AND NO AMNESIA

Hypothesis IA, the voluntary/non-voluntary aspect of the post-hypnotic response was assessed on the basis of the interview data accumulated for each subject. Subjects who

perceived their experience of the post-hypnotic response as non-voluntary were assigned response values of one. Subjects who experienced their responses as voluntary were assigned response values of zero.

Hypothesis IA was tested by means of a one tailed Z test for significance of differences between proportions. The critical value (Z crit.) for the purposes of rejecting the null hypothesis was 1.64. The observed value (Zp) was 1.59 (P-.055). The difference was not significant. Twenty-five subjects responded to the post-hypnotic signal in the amnesia condition and twenty-five reported their responses as non-voluntary. Eighteen subjects responded to the post-hypnotic signal in the no amnesia condition and seventeen reported their responses as non-voluntary. This finding does not support the hypothesis that amnesic subjects who respond to the post-hypnotic suggestion will experience their response as non-voluntary more often than those responding who are not amnesic. Hypothesis IA is not supported.

The results of the statistical analysis are summarized below in Table 2.

TABLE 2

Zp FOR PERCEIVED VOLUNTARINESS OF RESPONSE

$P_1 = 1.0$	$Z_p = 1.597$	$p = .055$
$P_2 = .944$	$Z_{crit.} = 1.64$	

The Results of the Test of Hypothesis 11

Hypothesis 11. Subjects who are amnesic for the post-hypnotic suggestion will exhibit a more rapid post-hypnotic response reaction time, measured in seconds, than those who remember it.

The latency of response in executing the post-hypnotic suggestion was timed with a 1/10th second stop-watch. The lapsed time, from presentation of post-hypnotic signal to completion of response, was recorded for each subject who responded.

A repeated measures analysis of variance for Hypothesis 11 was significant at the .02 level thus indicating that there were significant differences between the two experimental conditions with respect to latency of response. Subjects experiencing amnesia for the post-hypnotic suggestion exhibited a more rapid post-hypnotic response reaction time than those who remembered the suggestion. A total of twenty-five subjects (N=30) responded to the post-hypnotic suggestion in the amnesia condition. The sum total of their reaction times was 84.1 seconds with a mean reaction time of 2.80 seconds. A total of 18 subjects (N=30) responded to post-hypnotic suggestion in the non-amnesia condition. The sum total of their reaction time was 152.9 seconds with a mean reaction time of 5.10 seconds. The results of this analysis indicate that amnesic subjects respond more rapidly than non-amnesic subjects. Hypothesis 11 is supported.

The results of the statistical analysis are re-

ported below in Table 3 and depicted graphicaly in Figure 2.

TABLE 3

F-VALUES OF MEAN DIFFERENCES FOR HYPOTHESIS 11

Source	Mean Square	D.F.	F-Ratio	P
Total	15.2835	59.		
Trails	78.8906	1.	5.781	0.0216
Error (T)	13.6455	29.		
T Mean	1 2.8033	2 5.0967		

The Results of the Test of Hypothesis 111

Hypothesis 111: The amnesic subjects who respond to the post-hypnotic signal will exhibit a more complete response than those who respond and are non-amnesic.

The completeness of the post hypnotic response was assessed by experimenter observation. Those subjects who executed a complete response were assigned response values of one. Subjects who failed to execute a complete response were assigned a response value of zero.

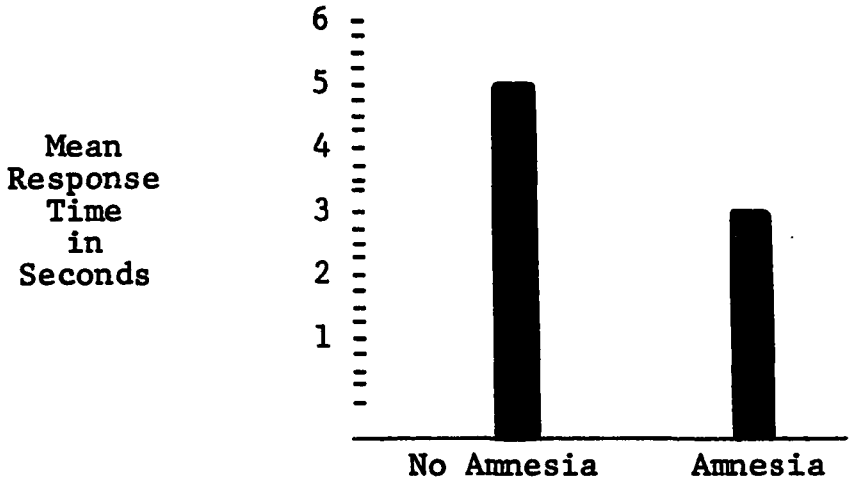


FIGURE 2

MEAN RESPONSE TIME FOR EXPERIMENTAL CONDITIONS, AMNESIA/NO AMNESIA

Of the thirty subjects tested, twenty-five responded to the post-hypnotic suggestion in the amnesia condition and eighteen responded in the non-amnesia condition. All responses in both conditions were complete. There were no incomplete responses. In view of the raw data accumulated a statistical evaluation of the results is unnecessary. There are no significant differences in the degree or completeness of response as determined by the presence or absence of suggested amnesia. Non-amnesic subjects do not exhibit incomplete responses more often than amnesic subjects. Hypothesis III is not supported.

A summary of hypotheses rejected and not rejected is presented in Table 4.

TABLE 4

HYPOTHESES REJECTED AND NOT REJECTED

	Hypotheses	Results
I	R/A > R/NA	Supported
IA	NVR/A > NVR/NA	Not Supported
II	RT/A < RT/NA	Supported
III	CR/A > CR/NA	Not Supported

Discussion

Present findings support the general hypothesis that there is a significant relationship between suggested amnesia and post-hypnotic behavior.

It has been demonstrated that subjects who are amnesic for the post-hypnotic suggestion respond more often than those subjects who are not amnesic. This result was anticipated and in keeping with other reports in the literature. In the current study the difference between those responding in amnisia and those responding in the non-amensic state was not a large one. It was statistically significant, however, and warrants the attention and consideration of those using hypnosis who seek to enhance the possibility of deriving a desired behavior in response to a post-hypnotic suggestion. Had the seven subjects who failed to respond in the no amnesia condition not subsequently been exposed to the amnesia condition as well, they may have been dismissed as poor subjects, at least so far as post-hypnotic responses were concerned. In amnesia all seven became responsive to the post-hypnotic suggestion, an increase in effectiveness of nearly 25%. It would seem then, that in an effort to extract full measure from the effect of a post-hypnotic suggestion, hypnotherapists would further insure the chances of success in the use of same by routinely suggesting amnesia. It has been shown that suggesting amnesia can serve to increase the desired post-hypnotic effect, while omitting such suggestions can result in

complete omission thereof.

Why suggested amnesia seems to facilitate post-hypnotic behavior remains to be adequately explained and warrants further study. It is quite possible that the deletion of such suggestions, thus leaving the content of the suggestion in conscious memory, serves as an inhibiting factor. The nature of the suggestion seems of importance here and could be one explanation as to why some subjects who remember the suggestion respond and others do not. Even though it is in memory, an innocuous suggestion which poses no threat to the subject may be carried out, whereas suggestions more directly bearing on and personally related to the subject are negated at some level of functioning. If the subject is amnesic, these forces are not brought into play but are by-passed in a stimulus-response fashion without the intervention of conscious, cognitive processes. In essence, through suggested amnesia, the subject's defenses and resistances are temporarily overridden, thus rendering him susceptible to therapeutic intervention. In any event, suggested amnesia would seem an inexpensive form of therapeutic insurance in the practice of therapy involving hypnosis and post-hypnotic suggestion.

A word of caution may be in order. Continued use of amnesia suggestions with a subject who does not experience the amnesia may lessen the subject's confidence in the process as a whole and therefore undermine therapy. It would be well to ascertain that the client is in fact achieving am-

nesia. Failure to achieve amnesia, however, does not necessarily contraindicate an attempt to use post-hypnotic suggestion. This study shows that a substantial percentage of people do carry out post-hypnotic suggestions even in the absence of amnesia. Concomitant amnesia suggestions only serve to maximize their potential.

With respect to the issue of the voluntary/non-voluntary aspect of the subject's response, it would seem that the majority of those responding to the post-hypnotic suggestion experience that response as being of a non-voluntary nature regardless of the presence or absence of amnesia. Although this finding is contrary to the original hypothesis it is now readily clear to this investigator that, while the suggested amnesia may serve as a determining factor in the post-hypnotic response itself, it has little or no bearing on the nature of the response or the subject's subjective experience of same. If the subject responds to the post-hypnotic signal and experiences a classical suggestion effect, the response must, by definition, be non-voluntary. To be experienced as otherwise would indicate that the post-hypnotic behavior was not in response to the suggestion per se, in the classical sense but attributable to other processes such as role playing or the effect of motivation.

The subjective aspect of hypnosis is difficult to study because the nature of the material is not easily quantifiable. It is, nevertheless, an area that has often been

neglected and should be subjected to further research.

The latency of the post-hypnotic response or reaction time revealed a significant difference in favor of the amnesic subjects. Non-amnesic subjects demonstrated a mean reaction time nearly twice as great as that of the amnesic subjects. It is this investigator's position that the difference can, again, be explained in terms of the subject's conscious awareness of the post-hypnotic suggestion. The amnesic subjects responded much more automatically and spontaneously, with less delay than the non-amesic subjects. The intervention of cognitive thought processes, integration, decision, attitude, will and expectation all interact to inhibit the subject's response to a post-hypnotic suggestion. In some subjects this hesitancy or resistance only delays the response, in others it completely negates it.

Several factors might be operating to influence whether the response is negated or only delayed. One such factor could involve the depth of hypnosis at the time the suggestion was given, thus, in some way, perhaps, determining the "strength" of the suggestion and the subsequent influence it exerts on the subject. The nature of the suggestion, as already discussed above, is pertinent here as well. It is also possible that repetition of the suggestion may serve in a reinforcement capacity and give impetus to compliance. Underlying all these factors, and at the very root of the matter, are the personality dynamics of the individual. All things within

the person and without constantly interact in affecting the result.

As was reported, all subjects who responded to the post-hypnotic suggestion exhibited a complete response. It was predicted that some non-amnesic subjects would make only partial responses, again due to the inhibitory action of conscious cognitive processes. Such was not the case. One explanation might be that if the inhibition is sufficiently strong it negates the response completely, but if not of sufficient strength the influence exerted on the individual by the suggestion takes precedent over whatever inhibiting factors are in operation and allows completion of the response. In this conception there is a point of no return, fixed on a continuum, a point up to which the inhibiting factors can control the impulse to react. Beyond that point these factors give way and allow expression of the suggested behavior. There may be a struggle for supremacy before the stronger power wins out over the weaker of the two and thus we see the wavering about this imaginary point given overt expression in the resistance, hesitancy and indecision about compliance often seen in individuals who recall the suggestion.

The interview data revealed that all amnesic subjects who responded to the post-hypnotic suggestion did not know why they did so, nor were they aware of the suggestion having been given. The non-amnesic subjects who responded were consciously aware of the suggestion but, with one exception, re-

ported that they were unable to say why they carried out the suggested behavior. The non-amnesic subjects who failed to respond all stated that they consciously inhibited the response or decided not to comply. This, of course, does not take into consideration those subjects who failed to respond in either condition after having been pre-screened. This is a topic for further research.

The results of this study are of special interest to those psychologists and counselors working in a educational setting with students inasmuch as hypnosis has been used as an adjunctive tool in furthering the goals of education in several areas.

A lack of concentration or a short attention span often present a serious block to a student's academic achievement. Hypnosis can sometimes be utilized in the development of more effective study habits (Hull, 1933; Sears, 1955; Fowler, 1961; Krippner, 1963, 1966; Estabrooks, 1965). Hull (1933) reported that learning was 36% better under hypnosis than in the waking state.

Test anxiety or examination panic is also a common student problem and, as a result thereof, many people, although prepared, forget essential information, make unnecessary mistakes and in other ways find their nervousness stifling their academic performance. Hypnotic suggestions can be given to counter these reactions (Eisele & Higgins, 1962; Lodato, 1964).

Further, hypnosis can make a valuable contribution to the learning process in the area of motivation. Motivation is often as crucial as intelligence and interest in determining whether a student will attain his academic potential. Hypnosis has been used in this respect to appraise, strengthen and reinforce the students commitment to his education (Fowler, 1961; Krippner, 1963; Estabrooks, 1965).

Other academic areas in which hypnosis has been found effective include speed of reading and comprehension (Young, 1925; Cooper & Rodgin, 1952; Hammer, 1954; Mutke, 1967; Donk, 1968), retention of learned material (Young, 1925; Nagge, 1935; Cooper & Rodgin, 1952), increased recall (Gray, 1934; White, Fox & Harris, 1940; Rosenthal, 1944; Sears, 1956), remedial training (Sears, 1955; Estabrooks, 1965) and special education with learning disabilites and retardation (McCord, 1956; Ambrose, 1961).

McCord and Sherrill (1961) for example, reported the efficiency of a professor of mathematics in doing calculus was improved six-fold. He was able to complete a two hour series of computations in only twenty minutes. Cooper and Rodgin (1952) made a comparison of learning methods and concluded that study in the trance state was 450% more effective than learning in the waking state. More of what was learned in hypnosis was retained and forgotten material was re-learned in less time. Nagge (1935) obtained 50% better results on retention of material learned in hypnosis in comparison with

retention of material learned in the waking state. Mutke (1967) found that a group under hypnosis was able to learn material in one-fourth the time required for the control group to learn the same material.

Not all studies, however, report positive results. Egan and Egan (1968) reported finding no differences between a control group of college students and an experimental group who had been to two hypnotic sessions and taught self hypnosis. Edmonston and Marks failed to find hypnosis useful in a kinesthetic learning task. Edmonston and Stanek (1966) found, similarly, that hypnosis was of no value in a verbal learning task.

The difference could be attributable to individual differences or the procedure involved. In any event, hypnosis has been reported as useful in education for many years and in many ways and should not be overlooked as a learning tool when deemed appropriate.

Suggestions for Future Research

Additional research under varied clinical and experimental conditions would give greater scope to an investigation of the kind made in this study. Furthermore, it would be enlightening to investigate the characteristics of individual subjects who responded in one or the other conditions, both, or neither, in order to discover whether there is a similarity in types of people falling into each category. This is, of course, the often sought question of personality

correlates which, although fruitless to date, should not be abandoned. Ideally, larger N's would be desirable as well as long term follow up to test for duration of effect.

Finally, additional studies need to be conducted to investigate the relationship of suggested amnesia and post-hypnotic behavior as it applies to other than motoric acts such as cognitive functioning and sensory processes.

CHAPTER V

SUMMARY

The use of hypnosis as a form of therapy or as an adjunct thereto has been practiced for two centuries. During that time many theories regarding it's nature have been postulated. As study in the area progressed, some of the theories have been cast aside for those of a newer vintage. This process has continued to the present yet the true nature of the phenomenon remains a mystery. Present theories are based upon the accumulation of more scientific data and show the influence of study in related areas such as psychology, learning, motivation and personality but still fail to provide an answer mutually acceptable to everyone in the field. Perhaps the future will provide such an answer as researchers continue to study and learn more about the various aspects of the phenomenon and the individual personality.

Even though we cannot as yet explain the nature of hypnosis, the abundance of information which has come about as a result of two centuries of investigation enable us to define and categorize certain of it's properties. One of these is amnesia.

Spontaneous amnesia was recognized very early in the history of hypnotism, as was post-hypnotic suggestion. It was not until the late 1880's, however, that suggested amnesia was recognized and reported. Since that time amnesia has been extensively studied. The relationship between post-hypnotic suggestion and amnesia has also been the subject of study but the results are inconclusive. The predominant theme seems to have been that there is a relationship between amnesia and the effectiveness of a post-hypnotic suggestion (Schilder & Kauder, 1929; Weitzenjoffer, 1957; Sheehan & Orne, 1968) but other reputable investigators have concluded otherwise (LeCron, 1947; Barber, 1957).

Since the use of post-hypnotic suggestion is a commonly employed technique in hypnotherapy, the issue of whether amnesia has a bearing on the effectiveness thereof is of prime importance. If the purposes of therapy can be enhanced by routinely suggesting post-hypnotic amnesia concomitant with the therapeutic suggestion, this needs to be brought out and emphasized. The disagreement present in the literature on this point dictated that further study in the area be conducted in order to further clarify the nature of the relationship. It was the purpose of this study, therefore, to fulfill that dictum by designing a study to test the effect of amnesia on the execution of a post-hypnotic suggestion.

This study used a repeated measures design with the subject as his own control. Two hundred and nine college

students of all ages and both sexes enrolled in summer school classes at the University of Oklahoma were administered the Harvard Group Scale of Hypnotic Susceptibility (Shor & Orne, 1962) in order to select subjects who were capable of experiencing suggested amnesia and who responded to post-hypnotic suggestion. Thirty subjects who met these criteria were selected for the experiment and randomly assigned to one of two experimental conditions; post-hypnotic suggestion with concomitant amnesia suggestions followed by post-hypnotic suggestion without concomitant amnesia suggestions or vice versa. Thus, half the subjects received the suggestions in one order and the other half in the reverse order to control for order effect.

Subjects were hypnotized using a pre-recorded modification of the induction procedure contained in the Stanford Hypnotic Susceptibility Scale, Form A (Weitzenhoffer, & Hilgard, 1959). Suggestions were then given with or without amnesia, depending upon order. The subject was de-hypnotized and tested for response to the post-hypnotic suggestion, latency of the response, the degree of completeness of the response and the voluntary/non-voluntary subjective experience of making the response. Upon completion of the interview the subject was re-hypnotized using a pre-recorded modification of the induction procedure contained in the Stanford Hypnotic Susceptibility Scale, Form B referenced above. Subjects were again given suggestions, with amnesia suggested or omitted as

required by order, and then de-hypnotized. After de-hypnotization, response data and interview information were again recorded as before.

It was hypothesized that amnesic subjects would respond to the post-hypnotic suggestion more often and more rapidly, exhibiting more complete responses and reporting them as being of a non-voluntary nature with greater frequency than the non-amnesic subjects.

The data were submitted to a repeated measures analysis of variance for significant differences between means or a Z-test for significant differences between proportions as required by the data.

The results of the analysis of variance indicate that there is a relationship between suggested amnesia and post-hypnotic behavior, significant at the .05 level.

Similarly, amnesic subjects respond more rapidly to the post-hypnotic suggestion than do non-amnesic subjects. The mean reaction time for amnesic subjects was 2.80 seconds as compared to 5.10 seconds for the non-amnesic subjects. This was significant at the .02 level.

The Z-test for significant differences between proportions, used to test the significance of the voluntary/non-voluntary aspect of the response, yielded an observed value of 1.597 (P.=.055) with a critical value of 1.64 and was, therefore, not statistically significant with respect to the presence or absence of amnesia.

The degree of completeness of the response was not submitted to statistical analysis inasmuch as there were no differences in this respect between the two groups.

The findings resulting from this study support the general hypothesis that there is a relationship between suggested amnesia and post-hypnotic behavior. More study is needed, however, in both clinical and experimental situations, using larger N's and testing for post-hypnotic effects other than motoric behavior.

REFERENCES

Ambrose, G. Hypnotherapy with Children. London: Staples Press, 1961.

Ary, D., Jacobs, L.D., Razavieh. Introduction to Research in Education. New York: Holt, Rinehart & Winston, Inc., 1972.

Barber, T.X. Hypnosis as perceptual-cognitive restructuring: Post-hypnotic behavior. Journal of Clinical and Experimental Hypnosis, 1958, 6(1), 10-20.

Barber, T.X. Toward a theory of hypnosis: Post-hypnotic behavior. Archives of General Psychiatry, 1962, 64, 321-342.

Barber, T.X., Glass, B.B. Significant factors in hypnotic behavior. Journal of Abnormal and Social Psychology, 1962, 64, 222-228.

Barber, T.X., Calverley, D.S. Hypnotic behavior as a function of task motivation. Journal of Psychology, 1962, 54, 363-389.

Barrios, A.A. Posthypnotic suggestion as higher order conditioning: A methodological and experimental analysis. The International Journal of Clinical and Experimental Hypnosis, 1973, 21(1), 32-50.

Bernheim, H. Suggestive Therapeutics. Westport, Ct., Associated Booksellers, 1957(1887).

Bjornstrom, F. Hypnotism: It's History and Present Development. New York: Humboldt Publishing Co., 1887.

Bramwell, J.M. Hypnotism: It's History, Practice and Theory. Philadelphia: J.B. Lippincott Co., 1930(1908).

Campbell, D.T., Stanley, J.C. Experimental and Quasi-Experimental Designs for Research. Chicago: Rand McNally & Co., 1966.

Cooper, L.M. Spontaneous and suggested posthypnotic source amnesia. The International Journal of Clinical and Experimental Hypnosis. 1966, 14(2), 180-193.

Cooper, L.F., Rodgin, D.W. Time distortion in hypnosis and non-motor learning. Science, 1952, 115, 500-502.

Damaser, E. An experimental study of long term posthypnotic suggestion. Unpublished doctoral dissertation, Harvard University, 1964.

Dittborn, J.M., Aristeguieta, A. Expectation and spontaneous post-hypnotic amnesia: An experimental note. American Journal of Clinical Hypnosis, 1968, 16(2), 101-110.

Edmonston, W.E., Stanek, F.J. The effects of hypnosis and meaningfulness of material on verbal learning. American Journal of Clinical Hypnosis, 1966, 8, 257-260.

Edmonston, W.E., Stanek, F.J. The effects of hypnosis and motivational instructions on kinesthetic learning. American Journal of Clinical Hypnosis, 1967, 9, 252-255.

Edmunds, S. Hypnotism and Psychic Phenomena. Hollywood: Wilshire Book Co., 1972(1961).

Edwards, G. Duration of post-hypnotic effect. British Journal of Psychiatry, 1963, 109, 259-266.

Edwards, G. Post-hypnotic amnesia and post-hypnotic effect. British Journal of Psychiatry, 1965, 3, 216-325.

Egan, R.M., Egan, W.P. The effect of hypnosis on academic performance. American Journal of Clinical Hypnosis, 1968, 11, 30-34.

Eisele, G., Higgins, J.J. Hypnosis in educational and moral problems. American Journal of Clinical Hypnosis, 1962, 4, 259-263.

Engelhart, M.D. Methods in Educational Research. Chicago: Rand McNally & Co., 1972.

Erickson, M.H., Erickson, E.M. Concerning the nature and character of post-hypnotic behavior. Journal of General Psychology, 1941, 24, 95-133.

Estabrooks, G.H. Hypnotism, New York: E.P. Dutton & Co. Inc., 1957.

Estabrooks, G.H., May, J.R. Hypnosis in integrative motivation. American Journal of Clinical Hypnosis, 1965, 7, 346-352.

Field, P.B. An interview scale of hypnotic depth. International Journal of Clinical and Experimental Hypnosis, 1965, 13, 224-238.

Fisher, S. The role of expectancy in the performance of post-hypnotic behavior. Journal of Abnormal and Social Psychology, 1954, 49, 503-507.

Fowler, W.L. Hypnosis and Learning. International Journal of Clinical and Experimental Hypnosis, 1961, 9, 223-232.

Furst, A. Post-hypnotic Instructions. Hollywood: Wilshire Book Co., 1970.

Gurney, E. Peculiarities of certain post-hypnotic states. Proceedings of the Society of Psychical Research, 1886-7, 4, 268-323.

Guze, H. Posthypnotic behavior and personality. Personality, 1951, 1, 231-238.

Gray, W.H. The effects of hypnosis on learning to spell. Journal of Educational Psychology, 1934, 25, 471-473.

Hammer, E.F. Post-hypnotic suggestion and test performance. Journal of Clinical and Experimental Hypnosis, 1954, 2, 178-185.

Hilgard, E.R., Cooper, L.M. Spontaneous and suggested post-hypnotic amnesia. International Journal of Clinical and Experimental Hypnosis, 1965, 13(4), 261-273.

Hull, C.L. Hypnosis and Suggestibility. New York: Appleton-Century, 1933.

Kahn, L., Russo, S. Modern Hypnosis. Hollywood: Wilshire Book Co., 1970(1947).

Kellogg, E.R. Duration of the effects of post-hypnotic suggestions. Journal of Experimental Psychology, 1929, 12, 502-514.

Kerlinger, F.M. Foundations of Behavioral Research. New York: Holt, Rinehart & Winston, Inc., 1973(1962).

Kline, M.V. Hypnotic amnesia in psychotherapy. International Journal of Clinical and Experimental Hypnosis, 1966, 14(2), 112-119.

Krippner, S. Hypnosis and reading improvement among university students. American Journal of Clinical Hypnosis, 1963, 5, 187-193.

Krippner, S. The use of hypnosis with elementary and secondary school children in a summer reading clinic. American Journal of Clinical Hypnosis, 1966, 8, 261-266.

LeCron, L.M., Bordeaux, J. Hypnotism Today. New York: Grune & Stratton, 1947.

Levitsky, A. Techniques of giving posthypnotic suggestion. American Journal of Clinical Hypnosis, 1962, 4(3), 158-161.

Lodato, F.J. Hypnosis as an adjunct to test performance. American Journal of Clinical Hypnosis, 1964, 6, 271-273.

Mandeville, G.K. A new look at treatment differences. American Educational Research Journal, 1972, 9(2)

Marcuse, F.L. Hill, A., Keegan, M. Identification of post-hypnotic signal and responses. Journal of Experimental Psychology, 1945, 35(2), 163-166.

McCord, H. Hypnosis as an aid to teaching a severely mentally retarded teenage boy. Journal of Clinical and Experimental Hypnosis, 1956, 4, 21-24.

McCord, H., Sherrill, C.I. A note on increased ability to do calculus posthypnotically. American Journal of Clinical Hypnosis, 1961, 4, 124.

McNemar, Q. Psychological Statistics. New York: John Wiley & Sons, Inc., 1962.

Moll, A. Hypnotism. London: Walter Scott, 1890.

Mutke, P.H. Increased reading comprehension through hypnosis. American Journal of Clinical Hypnosis, 1966, 9(2), 109-113.

Nace, E.P., Martin, O.T. Fate of an uncompleted posthypnotic suggestion. Journal of Abnormal and Social Psychology, 1970, 75(3), 278-285.

Nagge, J.W. An experimental test of the theory of associative interference. Journal of Experimental Psychology, 1935, 25, 319-334.

Orne, M.T. The nature of hypnosis: Artifact and essence. Journal of Abnormal and Social Psychology, 1959, 58(3), 277-299.

Orne, M.T. On the mechanisms of posthypnotic amnesia. International Journal of Clinical and Experimental Hypnosis, 1966, 14(2), 121-134.

Orne, M.T., Sheehan, P.W., Evans, F.J. Occurrence of post-hypnotic behavior outside the experimental setting. Journal of Personality and Social Psychology, 1968, 9(2), 189-196.

Patten, E.F. The duration of post-hypnotic suggestion. Journal of Abnormal and Social Psychology, 1930, 25, 319-334.

Rosenberg, M.J., Gardner, C.W. Case report. Some dynamic aspects of posthypnotic compliance. Journal of Abnormal and Social Psychology, 1958, 57(3), 351-366.

Rosenthal, B.G. Hypnotic recall of material learned under anxiety and non-anxiety producing conditions. Journal of Experimental Psychology, 1944, 34, 369-389.

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

Sarbin, T.R. Some evidence in support of the role taking hypothesis in hypnosis. International Journal of Clinical and Experimental Hypnosis, 1963, 11, 98-103.

Sarbin, T.R., Anderson, M.L. Role theoretical analysis of hypnotic behavior.

Sears, B. A comparison of hypnotic and waking learning of the international Morse code. Journal of Clinical and Experimental Hypnosis, 1955, 3(4), 215-221.

Sears, B. Hypnosis and recall. Journal of Clinical and Experimental Hypnosis, 1956, 4, 165-171.

Sheehan, P.W., Orne, M.T. Some comments on the nature of post-hypnotic behavior. Journal of Nervous and Mental Disease, 1968, 146(3), 209-220.

Shor, R.E., Orne, E.C. Harvard Group Scale of Hypnotic Susceptibility. Pala Alto: Consulting Psychologists Press, Inc., 1962.

Stokvis, B. Medical Psychology of the post-hypnotic state. British Journal of Medical Hypnosis, 1955, 7(3), 13-18.

Strickler, C.B. A quantitative study of posthypnotic amnesia. Journal of Abnormal and Social Psychology, 1929, 24, 109-119.

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

Treloar, W.W. Review of recent research on hypnotic learning. Psychological Reports, 1967, 20, 723-732.

Unestahl, L.E. Posthypnotic suggestions. Department of Psychology, University of Uppsala, Sweden, Report 95, 1970.

Unestahl, L.E. Investigations concerning spontaneous trance and posthypnotic suggestions. Department of Psychology, University of Uppsala, Sweden, Report 110, 1971.

Uhr, L. Learning under hypnosis: What do we know? What should we know? Journal of Clinical and Experimental Hypnosis, 1958, 4(3), 121-135.

Watkins, J.G. Symposium on posthypnotic amnesia: Discussion. International Journal of Clinical and Experimental Hypnosis, 1966, 14(2), 139-149.

Weitzenhoffer, A.M. Hypnotism: An Objective Study in Suggestibility. New York: John Wiley & Sons, Inc., 1953.

Weitzenhoffer, A.M. General Techniques of Hypnotism. New York: Grune & Stratton, Inc., 1957.

Weitzenhoffer, A.M. A note on the persistence of hypnotic suggestion. Journal of Abnormal and Social Psychology, 1950, 45(1), 160-162.

Weitzenhoffer, A.M. Posthypnotic behavior and the recall of the hypnotic suggestion. Journal of Clinical and Experimental Hypnosis, 1957, 5(2), 41-58.

Weitzenhoffer, A.M., Hilgard, E.R. The Stanford Scale of Hypnotic Suggestibility. Palo Alto: Consulting Psychologists Press, Inc., 1959.

Weitzenhoffer, A.M. "Creduality" and "skepticism" in hypnotic research: A critical examination of Sutcliffe's thesis and evidence. American Journal of Clinical Hypnosis, 1963, 6(2-3), 137-162, 241-389.

Weitzenhoffer, A.M. When is a "suggestion" a "suggestion"? International Journal of Clinical and Experimental Hypnosis, In Press, 1974.

Wells, W.R. The extent and duration of post-hypnotic amnesia. Journal of Psychology, 1940, 9, 137-151.

White, R.W. A preface to a theory of hypnotism. Journal of Abnormal and Social Psychology, 1941, 36, 477-506.

White, R.W., Fox, G.F., Harris, W.W. Hypnotic hypermesia for recently learned material. Journal of Abnormal and Social Psychology, 1940, 35, 88-103.

Williamsen, J.S., Johnson, H.J., Eriksen, C.W. Some characteristics of posthypnotic amnesia. Journal of Abnormal Psychology, 1965, 70(2), 123-131.

Wolberg, L.R. Medical Hypnosis, New York: Grune & Stratton, Inc., 1948.

Wright, M.E. Symposium on posthypnotic amnesia: Discussion. International Journal of Clinical and Experimental Hypnosis, 1966, 14(2), 135-138.

Wynn, R. Scientific Hypnotism. New York: Cristopher Publishing Co., 1939.

Young, P.C. An experimental study of mental and physical functions in the normal and hypnotic state. American Journal of Psychology, 1925, 36, 214-232.

APPENDICES

RESPONSE BOOKLET – FORM A

HARVARD GROUP SCALE
OF
HYPNOTIC SUSCEPTIBILITY

by Ronald E. Shor and Emily Carota Orne

The Scale is a standard procedure for estimating susceptibility to hypnosis. An individual's susceptibility to hypnosis may change, however, over time and with differing circumstances. An individual who appears relatively unsusceptible at this time by these standard procedures will not necessarily still be relatively unsusceptible at a later time or under different circumstances.

PLEASE SUPPLY THE INFORMATION REQUESTED BELOW

Name: _____ **Date:** _____

Age: _____ **Sex:** _____ **School:** _____ **Class:** _____

Occupation: _____

Present Address: _____

_____ **Phone:** _____

Permanent Address: _____

_____ **Phone:** _____

Have you ever been hypnotized? Circle: Yes No
If so, please cite the circumstances and describe your experiences. Please be brief:

DO NOT OPEN THIS BOOKLET until the examiner specifically instructs you to do so

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Please write down now briefly in your own words a *list* of the things that happened since you began looking at the target. Do *not* go into detail. Spend three minutes, no longer, in writing your reply.

Please **DO NOT TURN THIS PAGE** *until the examiner specifically instructs you to do so*

PLEASE DO NOT RETURN TO PAGE 2

On this page write down a list of anything else that you now remember that you did not remember previously. Please do *not* go into detail. Spend two minutes, no longer, in writing out your reply.

Please **DO NOT TURN THIS PAGE** *until the examiner specifically instructs you to do so*

SECTION ON OBJECTIVE, OUTWARD RESPONSES

Listed below in chronological order are the eleven specific happenings which were suggested to you during the standard hypnotic procedure. We wish you to estimate whether or not you *objectively* responded to these eleven suggestions, that is, whether or not *an onlooker* would have observed that you did or did not make certain definite responses by certain specific, predefined criteria. In this section we are thus interested in your estimates of your *outward behavior* and *not* in what your *inner, subjective experience* of it was like. Later on you will be given an opportunity to describe your inner, subjective experience, but in this section refer only to the outward behavioral responses irrespective of what the experience may have been like subjectively.

It is understood that your estimates may in some cases not be as accurate as you might wish them to be and that you might even have to guess. But we want you to make whatever you feel to be your *best estimates* regardless.

Beneath a description of each of the eleven suggestions are sets of two responses, labeled A and B. Please *circle* either A or B for each question, whichever you judge to be the more accurate. Please answer *every* question. Failure to give a definite answer to every question may lead to disqualification of your record.

I. HEAD FALLING

You were first told to sit up straight in your chair for 30 seconds and then to think of your head falling forward. Would you estimate that *an onlooker* would have observed that your head fell forward at least two inches during the time you were thinking about it happening?

Circle one: A. My head fell forward at least two inches.

B. My head fell forward less than two inches.

II. EYE CLOSURE

You were next told to rest your hands in your lap and pick out a spot on either hand as a target and concentrate on it. You were then told that your eyelids were becoming tired and heavy. Would you estimate that *an onlooker* would have observed that your eyelids had closed (before the time you were told to close them deliberately)?

Circle one: A. My eyelids had closed by then.

B. My eyelids had *not* closed by then.

III. HAND LOWERING (LEFT HAND)

You were next told to extend your left arm straight out and feel it becoming heavy as though a weight were pulling the hand and arm down. Would you estimate that *an onlooker* would have observed that your hand lowered at least six inches (before the time you were told to let your hand down deliberately)?

Circle one: A. My hand had lowered at least six inches by then.

B. My hand had lowered less than six inches by then.

IV. ARM IMMOBILIZATION (RIGHT ARM)

You were next told how heavy your right hand and arm felt and then told to try to lift your hand up. Would you estimate that *an onlooker* would have observed that you did *not* lift your hand and arm up at least one inch (before you were told to stop trying)?

Circle one: A. I did *not* lift my hand and arm at least one inch by then.

B. I did lift my hand and arm an inch or more by then.

V. FINGER LOCK

You were next told to interlock your fingers, told how your fingers would become tightly interlocked, and then told to try to take your hands apart. Would you estimate that *an onlooker* would have observed that your fingers were incompletely separated (before you were told to stop trying to take them apart)?

Circle one: A. My fingers were still incompletely separated by then.

B. My fingers had completely separated by then.

VI. ARM RIGIDITY (LEFT)

You were next told to extend your left arm straight out and make a fist, told to notice it becoming stiff, and then told to try to bend it. Would you estimate that *an onlooker* would have observed that there was less than two inches of arm bending (before you were told to stop trying)?

Circle one: A. My arm was bent less than two inches by then.

B. My arm was bent two or more inches by then.

VII. MOVING HANDS TOGETHER

You were next told to hold your hands out in front of you about a foot apart and then told to imagine a force pulling your hands together. Would you estimate that *an onlooker* would have observed that your hands were not over six inches apart (before you were told to return your hands to their resting position)?

Circle one: A. My hands were not more than six inches apart by then.

B. My hands were still more than six inches apart by then.

VIII. COMMUNICATION INHIBITION

You were next told to think how hard it might be to shake your head to indicate "no", and then told to try. Would you estimate that *an onlooker* would have observed you to make a recognizable shake of the head "no"? (That is, before you were told to stop trying.)

Circle one: A. I did *not* recognizably shake my head "no".

B. I did recognizably shake my head "no".

IX. EXPERIENCING OF FLY

You were next told to become aware of the buzzing of a fly which was said to become annoying, and then you were told to shoo it away.Would you estimate that *an onlooker* would have observed you make any grimacing, any movement, any outward acknowledgement of an effect (regardless of what it was like subjectively)?

Circle one: A. I did make some outward acknowledgement.

B. I did *not* make any outward acknowledgement.

X. EYE CATALEPSY

You were next told that your eyelids were so tightly closed that you could not open them, and then you were told to try to do so. Would you estimate that *an onlooker* would have observed that your eyes remained closed (before you were told to stop trying)?

Circle one: A. My eyes remained closed.

B. My eyes had opened.

XI. POST-HYPNOTIC SUGGESTION (TOUCHING LEFT ANKLE)

You were next told that after you were awakened you would hear a tapping noise at which time you would reach down and touch your left ankle. You were further informed that you would do this but forget being told to do so. Would you estimate that *an onlooker* would have observed either that you reached down and touched your left ankle, or that you made any partial movement to do so?

Circle one: A. I made at least an observable partial movement to touch my left ankle.

B. I did *not* make even a partial movement to touch my left ankle, which would have been observable.

CONTINUE ON NEXT PAGE

YOU MAY NOW REFER TO EARLIER PAGES – BUT PLEASE DO NOT WRITE ANYTHING FURTHER ON THEM

SECTION ON INNER, SUBJECTIVE EXPERIENCES

(1) Regarding the suggestion of EXPERIENCING A FLY—how real was it to you? How vividly did you hear and feel it? Did you really believe at the time that it was there? Was there any doubt about its reality?

(2) Regarding the two suggestions of HAND LOWERING (LEFT) and HANDS MOVING TOGETHER—was it subjectively convincing each time that the effect was happening entirely by itself? Was there any feeling either time that you were helping it along?

(3) On the remainder of this page please describe any other of your inner, subjective experiences during the procedure which you feel to be of interest.

THANK YOU FOR YOUR COOPERATION

APPENDIX B

INTRODUCTION

The Harvard Group Scale of Hypnotic Susceptibility, Form A, is an adaptation for group administration with self-report scoring of the original, individually-administered and objectively-scored Stanford Hypnotic Susceptibility Scale, Form A (Weitzenhoffer & Hilgard, 1959).* The adapted scale was developed at our laboratory to eliminate the need for a trained examiner to devote an hour's time to the testing of each subject individually. This revised version can be administered to groups of unlimited size.

The Harvard Group Scale was prepared conservatively by making only those changes needed to preserve the characteristics of the original version under group conditions. Although many minor changes proved to be necessary, the only fundamental alteration was the provision for self-report scoring. In self-report scoring the subject judges afterwards whether or not he performed the requested behaviors, and then records his judgments in special Response Booklets.

The manual consists of a complete set of instructions for attempting the induction of hypnosis and for measuring susceptibility to the standard induction procedures on a 12-point scale. The instructions are prepared on the assumption that the adapted scale is being used with a group where at least one or more of the subjects is likely to be experiencing hypnotic procedures for the first time.

The instructions begin with some recommendations for establishing rapport through a preliminary conversation, and then go on through eleven specific instructions, each of which is eventually scored by the subject.** The final score of the 12-item scale is arrived at through a written interrogatory on amnesia. A specimen booklet for self-report scoring is included; these booklets are available separately and should be distributed to subjects with appropriate instructions prior to the hypnotic procedures.

The individual sections of the scale are timed to indicate an approximate reading rate. The induction and hypnotic testing should take about 50 minutes. The initial and final periods are flexible, depending upon the time available. With careful planning and efficient distribution of the Response Booklets, a 70-minute total time period should be adequate.***

* Form A is designed to be given either as the first or as a later hypnotic susceptibility testing procedure. It can be administered to the same individual more than once. Form B, its alternate, cannot be used for the first induction and is thus less general in its application. A group administration adaptation of Form B is, however, in preparation.

** In the original version alternative preliminary remarks were included so that the scale could be used in therapeutic situations. Because group hypnotic induction would probably have limited clinical application, similar alternative remarks have not been made here but could easily be devised if the need should arise.

*** Where time cannot be sufficiently regulated, a selection from the scale of fewer items may be found satisfactory, as has been suggested in preliminary work on a brief group form by Weitzenhoffer (1962).

Research findings to date indicate that norms derived from the adapted scale are congruent with norms derived from the individually-administered version (Bentler & Hilgard, 1963; Shor & E. Orne, 1963).

The same social and ethical responsibilities that apply in the individual administration of the scale also apply, of course, in a group administration. Because in a group administration the examiner has little direct contact with the individual reactions of his subjects, it behooves him to take extra precautions to be alert to the possibility of an occasional disturbance which may arise attendant to the hypnotic experience. Out of hundreds of subjects hypnotized with the individually-administered and group-administered versions of the scale, only two or three per cent felt in the least disturbed by the experience, but it is valuable to learn from these subjects. "In some cases a disturbance such as a headache resulted from the revival under hypnosis of bad childhood experiences under chemical anesthetics; in other cases the disturbance attributed to hypnosis could be shown to have been there prior to the hypnotic induction. While hypnosis is in general entirely harmless, and often helpful, the assumption must not be made that it is a trivial experience. For some subjects it is a deep intrusion into their private lives. Hence the person planning experiments on hypnosis should be prepared for the possibility of some unusual consequences" (Weitzenhoffer & Hilgard, 1959, p. 6).

ESTABLISHING RAPPORT PRIOR TO THE INITIAL INDUCTION (Time: 7 minutes)

It is assumed that subjects have been notified of the hypnotic testing and that their presence is an implicit agreement to be hypnotized. An effort should be made to discourage a lack of seriousness in subjects and to prevent the presence of casual onlookers. Provisions should also be made to prevent persons from entering the room once the examiner begins the introductory remarks. The gist of the following remarks should be memorized, but the conversation should flow naturally; hence these initial remarks should not be read from the printed page. (The main procedures that follow in later sections are intended to be read verbatim.)

Subjects are to be seated. Physical arrangements should be moderately comfortable and relatively non-disturbing. For example, subjects should not be seated so close to a table that they hit against it when carrying out the tasks. Similarly, smoking cannot be allowed during the test proper.

Preliminary Remarks by Examiner. In a few minutes I am going to administer a standard procedure for measuring susceptibility to hypnosis. At the end of the standard procedure you yourself will report on what the experience was like in the Response Booklet which has been distributed to you. Note that the booklet is sealed. Do not open the Response Booklet until I specifically tell you to do so at the end of the standard procedure. On the Cover Page of the Response Booklet are spaces for your name, address, and some other general information. Please fill in this information now. Again, please do not open the booklet now. Fill in the information on the Cover Page only. (Allow a minute or two for subjects to record this information.)

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

(In presenting the following remarks the examiner may find it useful in establishing rapport to elicit some questioning and participation from members of the group. Questions are to be answered by paraphrasing the points made below.)

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

Some people, however, have a tendency to allay their initial uneasiness in a new situation by laughing, giggling or whispering. We must request that you refrain from this type of response for the duration of the procedures here so as not to disrupt the concentration of the individuals around you.

To allow you to feel more fully at ease in the situation, let me reassure you on a few points. First of all, the experience, while a little unusual, may not seem so far removed from ordinary experience as you have been led to expect. Hypnosis is largely a question of your willingness to be receptive and responsive to ideas, and to allow these ideas to act upon you without interference. These ideas we call suggestions.

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

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

You may wonder why we are doing these experiments. Hypnotism is being used more and more by physicians: for example, by dentists to relieve pain, by obstetricians to make childbirth easier, by psychiatrists to reduce anxiety. If we can understand the processes involved, we will know more about the relationship between ideas and action, more about the way in which personality operates. So in participating here you are contributing to scientific knowledge of a kind that can be used to help other human beings. We are trying here merely to understand hypnotism. Probably all people can be hypnotized, but some are much more readily hypnotized than others, even when each of them co-operates. We are studying some of these differences among people.

Have you any questions or comments before we go ahead? (Answer questions by paraphrasing the above points.)

Now please make yourself comfortable in your chair. Clear your lap of books and papers, and prepare to begin. Individuals who wear glasses should keep them on. If, however, you are wearing contact lenses, it might be more comfortable to remove them. (The examiner should also communicate the following if the main procedures are tape recorded.) In order to help keep our main procedures constant they have been put onto a tape recording. In a moment I shall turn on the tape recorder.

MAIN PROCEDURES

(The following instructions are to be presented verbatim.)

1a. HEAD FALLING (Total time: 3' 30")

To begin with, I want you to experience how it feels to respond to suggestions when you are not hypnotized. If you will now please sit up straight in your chair . . . . Close your eyes and relax; continue, however, to sit up straight. That's right. Eyes closed and sit up straight. Please stay in that position with your eyes closed, while at the same time letting yourself relax. (Allow 30" to pass.) Now just remain in the same position and keep your eyes closed. . . . sitting up straight in your chair. . . . with your eyes closed.

In a moment I shall ask you to think of your head falling forward. As you know, thinking of a movement and making a movement are closely related. Soon after you think of your

head falling forward you will experience a tendency to make the movement. You will find your head actually falling forward, more and more forward, until your head will fall so far forward that it will hang limply on your neck.

Listen carefully to what I say and think of your head falling forward, drooping forward. Think of your head falling forward, falling forward, more and more forward. Your head is falling forward, falling forward. More and more forward. Your head is falling more and more forward, falling more and more forward. Your head is going forward, drooping down, down, limp and relaxed. Your head is drooping, swaying, falling forward, falling forward, falling forward, falling, swaying, drooping, limp, relaxed, forward, forward, falling, falling, falling . . . . Now!

That's fine. Now please sit up and open your eyes. That's right. Sit up and open your eyes. You can see how thinking about a movement produces a tendency to make the movement. You learn to become hypnotized as you bring yourself to give expression to your action tendencies. But at this point you have the idea of what it means to accept and act upon suggestions.

2a. EYE CLOSURE (Total time: 15' 25")

Now I want you to seat yourself comfortably and rest your hands in your lap. That's right. Rest your hands in your lap. Now look at your hands and find a spot on either hand and just focus on it. It doesn't matter what spot you choose; just select some spot to focus on. I shall refer to the spot which you have chosen as the target. That's right . . . hands relaxed . . . look directly at the target. I am about to give you some instructions that will help you to relax and gradually to enter a state of hypnosis. Just relax and make yourself comfortable. I want you to look steadily at the target and while keeping your eyes upon it to listen to what I say. Your ability to be hypnotized depends partly on your willingness to cooperate and partly on your ability to concentrate upon the target and upon my words. You have already shown yourself to be cooperative by coming here today, and with your further cooperation I can help you to become hypnotized. You can be hypnotized only if you are willing. I assume that you are willing and that you are doing your best to cooperate by concentrating on the target and listening to my words, letting happen whatever you feel is going to take place. Just let it happen. If you pay close attention to what I tell you, and think of the things I tell you to think about, you can easily experience what it is like to be hypnotized. There is nothing fearful or mysterious about hypnosis. It is a perfectly normal consequence of certain psychological principles. It is merely a state of strong interest in some particular thing. In a sense you are hypnotized whenever you see a good show and forget you are part of the audience, but instead feel you are part of the story. Many people report that becoming hypnotized feels at first like falling asleep, but with the difference that somehow or other they keep hearing my voice as a sort of background to whatever other experience they may have. In some ways hypnosis is like sleepwalking; however, hypnosis is also an individual experience and is not just alike for everyone. In a sense the hypnotized person is like a sleepwalker, for he can carry out various and complex activities while remaining hypnotized. All I ask of you is that you keep up your attention and interest and continue to cooperate as you have been cooperating. Nothing will be done that will cause you any embarrassment. Most people find this a very interesting experience. (Time: 3' 35")

Just relax. Don't be tense. Keep your eyes on the target. Look at it as steadily as you can. Should your eyes wander away from it, that will be all right . . . just bring your eyes back to it. After a while you may find that the target gets blurry, or perhaps moves about, or again, changes color. That is all right. Should you get sleepy, that will be fine, too. Whatever happens, let it happen and keep staring at the target for a while. There will come a time, however, when your eyes will be so tired, will feel so heavy, that you will be unable to keep them open any longer and they will close, perhaps quite involuntarily. When this happens, just let it take place. (Time: 1' 10")

As I continue to talk, you will find that you will become more and more drowsy, but not all people respond at the same rate to what I have to say. Some people's eyes will close before others. When the time comes that your eyes have closed, just let them remain closed. You may find that I shall still give suggestions for your eyes to close. These suggestions will not bother you. They will be for other people. Giving these suggestions to other people will not disturb you but will simply allow you to relax more and more.

You will find that you can relax completely but at the same time sit up comfortably in your chair with little effort. You will be able to shift your position to make yourself comfortable as needed without it disturbing you. Now just allow yourself to relax completely. Relax every muscle of your body. Relax the muscles of your legs . . . Relax the muscles of your feet . . . Relax the muscles of your arms . . . Relax the muscles of your hands . . . of your fingers . . . Relax the muscles of your neck, of your chest . . . Relax all the muscles of your body . . . Let yourself be limp, limp, limp. Relax more and more, more and more. Relax completely. Relax completely. Relax completely. (Time: 2'15")

As you relax more and more, a feeling of heaviness perhaps comes over your body. A feeling of heaviness is coming into your legs and your arms . . . into your feet and your hands. . . into your whole body. Your legs feel heavy and limp, heavy and limp . . . Your arms are heavy, heavy . . . Your whole body feels heavy, heavier and heavier. Like lead. Your eyelids feel especially heavy. Heavy and tired. You are beginning to feel drowsy, drowsy and sleepy. Your breathing is becoming slow and regular, slow and regular. You are getting drowsy and sleepy, more and more drowsy and sleepy while your eyelids become heavier and heavier, more and more tired and heavy. (Time: 1' 25")

Your eyes are tired from staring. The heaviness in your eyelids is increasing. Soon you will not be able to keep your eyes open. Soon your eyes will close of themselves. Your eyelids will be too heavy to keep open. Your eyes are tired from staring. Your eyes are becoming wet from straining. You are becoming increasingly drowsy and sleepy. The strain in your eyes is getting greater and greater, greater and greater. It would be so nice to close your eyes, to relax completely, and just listen sleepily to my voice talking to you. You would like to close your eyes and relax completely, relax completely. You will soon reach your limit. The strain will be so great, your eyes will be so tired, your lids will become so heavy, your eyes will close of themselves, close of themselves. (Time: 1' 20")

Your eyelids are getting heavy, very heavy. You are relaxed, very relaxed. There is a pleasant feeling of warmth and heaviness all through your body. You are tired and drowsy. Tired and sleepy. Sleepy. Sleepy. Sleepy. Listen only to my voice. Pay attention

to nothing else but my voice. Your eyes are getting blurred. You are having difficulty seeing. Your eyes are strained. The strain is getting greater and greater, greater and greater. (Time: 50")

Your lids are heavy. Heavy as lead. Getting heavier and heavier, heavier and heavier. They are pushing down, down, down. Your eyelids seem weighted, weighted with lead, heavy as lead . . . Your eyes are blinking, blinking, blinking . . . closing . . . closing . . . (Time: 35")

Your eyes may have closed by now, and if they have not, they would soon close of themselves. But there is no need to strain them more. Even if your eyes have not closed fully as yet, you have concentrated well upon the target, and have become relaxed and drowsy. At this time you may just let your eyes close. That's it, eyes completely closed. Close your eyes now. (Time: 35")

You are now comfortably relaxed, but you are going to relax even more, much more. Your eyes are now closed. You will keep your eyes closed until I tell you otherwise, or I tell you to awaken . . . . You feel drowsy and sleepy. Just keep listening to my voice. Pay close attention to it. Keep your thoughts on what I am saying --just listen. You are going to get much more drowsy and sleepy. Soon you will be deep asleep but you will continue to hear me. You will not awaken until I tell you to do so. I shall now begin to count. At each count you will feel yourself going down, down, into a deep, comfortable, a deep restful sleep. A sleep in which you will be able to do all sorts of things I ask you to do. One--you are going to go deeply asleep . . . Two--down, down into a deep, sound sleep . . . Three--four--more and more, more and more asleep . . . Five--six--seven--you are sinking, sinking into a deep, deep sleep. Nothing will disturb you. Pay attention only to my voice and only to such things as I may call to your attention. I would like you to keep on paying attention to my voice and the things I tell you . . . Eight--nine--ten--eleven--twelve--deeper and deeper, always deeper asleep--thirteen--fourteen--fifteen--although deep asleep you can clearly hear me. You will always hear me no matter how deeply asleep you may feel yourself to be . . . Sixteen--seventeen--eighteen--deep asleep, fast asleep. Nothing will disturb you. You are going to experience many things that I will tell you to experience . . . Nineteen, twenty. Deep asleep! You will not awaken until I tell you to do so. You will wish to sleep and will have the experiences I shall presently describe. (Time: 3' 40")

3a. HAND LOWERING (LEFT HAND) (Total time: 5' 05")

Introduction. As you become even more drowsy and sleepy, it will not disturb you to make yourself comfortable in your chair and put your head in a comfortable position.

Now that you are very relaxed and sleepy, listening without effort to my voice, I am going to help you to learn more about how your thoughts affect your actions in this state. Not all people experience just the same things in this state, and perhaps you will not have all the experiences I will describe to you. That will be all right. But you will have at least some of the experiences and you will find these interesting. You just experience whatever you can. Pay close attention to what I tell you and watch what happens. Just let happen whatever you find is happening, even if it is not what you expect.

Instruction Proper. Please extend your left arm straight out in front of you, up in the air, with the palm of your hand down. Left arm straight out in front of you . . . straight out, up in the air, with the palm of your hand down. That's it. Left arm straight out in front of you . . . palm down. I want you now to pay close attention to this hand, the feelings in it, and what is happening to it. As you pay attention to it you are more aware of it than you have been--you notice whether it is warm or cool, whether there is a little tingling in it, whether there is a tendency for your fingers to twitch ever so slightly . . . That's right, I want you to pay close attention to this hand because something very interesting is about to happen to it. It is beginning to get heavy . . . heavier and heavier . . . as though a weight were pulling the hand and the arm down . . . you can picture a weight pulling on it . . . and as it feels heavier and heavier it begins to move . . . as if something were forcing it down . . . a little bit down . . . more and more down . . . down . . . and as I count it gets heavier and heavier and goes down more and more . . . one, down . . . two, down . . . three, down . . . four, down, more and more down . . . five, down . . . six, down . . . seven . . . eight . . . heavier and heavier, down and more and more . . . nine . . . down . . . ten . . . heavier and heavier . . . down more and more. (Allow 10")

That's fine . . . just let your hand now go back to its original resting position and relax. Your hand back to its original resting position and relax. You must have noticed how heavy and tired the arm and hand felt; much more so than it ordinarily would if you were to hold it out that way for a little while; you probably noticed how something seemed to be pulling it down. Now just relax . . . your hand and arm are quite comfortable again . . . quite comfortable again. There . . . just relax. Relax.

4a. ARM IMMOBILIZATION (RIGHT ARM) (Total time: 2'55")

You are very relaxed. The general heaviness you have felt from time to time you now feel all over your body. Now I want you to pay close attention to your right arm and hand . . . Your right arm and hand share in the feeling of heaviness . . . how heavy your right hand feels . . . and note how as you think about this heaviness in your hand and arm the heaviness seems to grow even more . . . Now your arm is getting heavy . . . very heavy. Now your hand is getting heavy . . . so heavy . . . like lead . . . perhaps a little later you would like to see how heavy your hand is . . . it seems much too heavy to lift . . . but perhaps in spite of being so heavy you could lift it a little, although it may now be too heavy even for that . . . Why don't you see how heavy it is . . . Just try to lift your hand up, just try. Just try to lift your hand up, just try. (Allow 10")

That's fine . . . stop trying . . . just relax. You notice that when you tried to lift it, there was some resistance because of the relaxed state you are in. But now you can just rest your hand again. Your hand and arm now feel normal again. They are no longer heavy. You could lift them now if you wanted to, but don't try now. Just relax . . . relax completely. Relax. Just relax.

5a. FINGER LOCK (Total time: 1'40")

Now let us try something else. Put your fingers together. Interlock your fingers together. Interlock your fingers and press your hands tightly together. That's it. Put your

fingers together. Interlock your fingers and press your hands tightly together. Interlock tightly . . . hands pressed tightly together. Notice how your fingers are becoming tightly interlocked together, more and more tightly interlocked together . . . so tightly interlocked together that you wonder very much if you could take your fingers and hands apart . . . Your fingers are interlocked, tightly interlocked . . . and I want you to try to take your hands apart . . . just try . . . (Allow 10")

That's right. Stop trying and relax. You notice how hard it was to get started to take them apart. Your hands are no longer tightly clasped together . . . You can take them apart. Now return your hands to their resting position and relax. Hands to their resting position and relax . . . just relax.

6a. ARM RIGIDITY (LEFT) (Total time: 2' 25")

Please extend your left arm straight out in front of you, up in the air, and make a fist. Arm straight out in front of you. That's right. Straight out, and make a fist. Arm straight out, a tight fist . . . make a tight fist. I want you to pay attention to this arm and imagine that it is becoming stiff . . . stiffer and stiffer . . . very stiff . . . and now you notice that something is happening to your arm . . . you notice a feeling of stiffness coming into it . . . It is becoming stiff . . . more and more stiff . . . rigid . . . like a bar of iron . . . and you know how difficult . . . how impossible it is to bend a bar of iron like your arm . . . See how much your arm is like a bar of iron . . . test how stiff and rigid it is . . . try to bend it . . . try. (Allow 10")

That's good. Now just stop trying to bend your arm and relax. Stop trying to bend your arm and relax. I want you to experience many things. You felt the creeping stiffness . . . that you had to exert a good deal of effort to do something that would normally be very easy. But your arm is not stiff any longer. Just place your arm back in resting position . . . back in resting position. Just relax and as your arm relaxes, let your whole body relax. As your arm relaxes, let your whole body relax.

7a. HANDS MOVING (TOGETHER) (Total time: 1' 45")

Please hold both hands up in the air, straight out in front of you, palms facing inward--palms facing toward each other. Hold your hands about a foot apart . . . about a foot apart. Both arms straight out in front of you, hands about a foot apart . . . palms facing inward . . . about a foot apart.

Now I want you to imagine a force attracting your hands toward each other, pulling them together. As you think of this force pulling your hands together, they will move together, slowly at first, but they will move closer together, closer and closer together as though a force were acting on them . . . moving . . . moving . . . closer, closer . . . (Allow 10" without further suggestion.)

That's fine. You see again how thinking about a movement causes a tendency to make it. Now place your hands back in their resting position and relax . . . your hands back in their resting position and relax.

8a. COMMUNICATION INHIBITION (Total time: 1' 25")

You are very relaxed now . . . deeply relaxed . . . think how hard it might be to communicate while so deeply relaxed . . . perhaps as hard as when asleep . . . I wonder if you could shake your head to indicate "no." I really don't think you could . . . You might try a little later to shake your head "no" when I tell you to . . . but I think you will find it quite difficult . . . Why don't you try to shake your head "no" now . . . just try to shake it. (Allow 10")

That's all right . . . stop trying and relax. You see again how you have to make an effort to do something normally as easy as shaking your head. You can shake it to indicate "no" much more easily now. Shake your head easily now . . . That's right, now relax. Just relax.

9a. HALLUCINATION (FLY) (Total time: 1' 30")

I am sure that you have paid so close attention to what we have been doing that you have not noticed the fly which has been buzzing about you . . . But now that I call your attention to it you become increasingly aware of this fly which is going round and round about your head . . . nearer and nearer to you . . . buzzing annoyingly . . . hear the buzz getting louder as it keeps darting at you . . . You don't care much for this fly . . . You would like to shoo it away . . . get rid of it . . . It annoys you. Go ahead and get rid of it if you want to . . . (Allow 10")

There, it's going away . . . it's gone . . . and you are no longer annoyed . . . no more fly. Just relax, relax completely. Relax . . . just relax.

10a. EYE CATALEPSY (Total time: 2')

You have had your eyes closed for a long time while you have remained relaxed. They are by now tightly closed, tightly shut . . . In a few moments I shall ask you to try to open your eyes. When you are told to try, most likely your eyes will feel as if they were glued together . . . tightly glued shut. Even if you were able to open your eyes, you would, of course, only do so momentarily and then immediately close them again and relax, so as not to disturb your concentration. But I doubt that you will be able--even momentarily--to open your eyes. They are so tightly closed that you could not open them. Perhaps you would soon like to try to open your eyes momentarily in spite of their feeling so heavy and so completely . . . so tightly closed. Just try . . . try--to open your eyes. (Allow 10")

All right. Stop trying. Now again allow your eyes to become tightly shut. Your eyes, tightly shut. You've had a chance to feel your eyes tightly shut. Now relax. Your eyes are normal again, but just keep them closed and relax. Normal again . . . just keep them closed and relaxed . . . relaxed and shut.

11a. POST-HYPNOTIC SUGGESTION (TOUCHING LEFT ANKLE); AMNESIA (Total time: 3' 35")

Remain deeply relaxed and pay close attention to what I am going to tell you next. In a moment I shall begin counting backwards from twenty to one. You will gradually wake up, but for most of the count you will still remain in the state you are now in. By the time I reach "five" you will open your eyes, but you will not be fully aroused. When I get to "one" you will be fully alert, in your normal state of wakefulness. You probably will have the impression that you have slept because you will have difficulty in remembering all the things I have told you and all the things you did or felt. In fact, you will find it to be so much of an effort to recall any of these things that you will have no wish to do so. It will be much easier simply to forget everything until I tell you that you can remember. You will remember nothing of what has happened until I say to you: "Now you can remember everything!" You will not remember anything until then. After you open your eyes, you will feel fine. You will have no headache or other after-effects. I shall now count backwards from twenty, and at "five," not sooner, you will open your eyes but not be fully aroused until I say "one." At "one" you will be awake . . . A little later you will hear a tapping noise like this. (Demonstrate.) When you hear the tapping noise, you will reach down and touch your left ankle. You will touch your left ankle, but forget that I told you to do so, just as you will forget the other things, until I tell you "Now you can remember everything." Ready, now: 20--19--18--17--16--15--14--13--12--11--10, half-way--9--8--7--6--5--4--3--2--1. Wake up! Wide awake! Any remaining drowsiness which you may feel will quickly pass.

(A distinct tapping noise is now to be made. Then allow 10" before continuing.)

TESTING

Now please take your Response Booklet, break the seal and turn to the second page of the Booklet. Do not turn to the third page until I specifically instruct you to do so later. On the second page please write down briefly in your own words a list of the things that happened since you began looking at the target. You should not go into much detail here on the particular ways in which you responded, but please try to mention all of the different things that you were asked to do. You will now be given three minutes to write out this information. At the end of three minutes you will be asked a number of more specific questions regarding your experiences. (Allow 2') Please complete your list in one more minute. If you have already completed your list, spend the next minute trying to recall if there was anything else which you may have neglected to mention. (Allow 1' more.)

All right, now listen carefully to my words. Now you can remember everything. Please turn to page three and write down a list of anything else that you remember now that you did not remember previously. You will be given two minutes more to write out this information. (Allow 2')

Now please turn to page four, and answer the questions in the remainder of the booklet. Use your own judgment where questions are ambiguous.

(Collect booklets at the end of the session. If necessary, instruct subjects to answer only as much of the last section on subjective experiences as time permits.)

APPENDIX C

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

Let me reassure you on a few points.

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

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

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

You may wonder why we are doing these experiments. Hypnotism is being used more and more by professional people: for example, by dentists to relieve pain, by obstetricians to make childbirth easier, by psychiatrists and psychologists to

reduce anxiety and in dealing with emotional disorders. If we can understand the processes involved, we will know more about the relationship between ideas and action, more about the way in which personality operates. So in participating here you are contributing to scientific knowledge of a kind that can be used to help other human beings. We are trying here merely to understand hypnotism. Probably all people can be hypnotized, but some are much more readily hypnotized than others, even when each of them cooperates. We are studying some of these differences among people.

Now I want you to seat yourself comfortably: a hand on each arm of the chair and close your eyes. I am about to give you some instructions that will help you to relax and gradually to enter a state of hypnosis. Just relax and make yourself comfortable. I want you to just take it easy and listen to what I say. Your ability to be hypnotized depends partly on your williness to cooperate and partly on your ability to concentrate upon my words. You have already shown yourself to be cooperative by coming here, and with your further cooperation I can help you to become hypnotized. You can be hypnotized only if you are willing. I assume that you are willing and that you are doing your best to cooperate by listening to my words, letting happen whatever you feel is going to take place. Just let it happen. If you pay close attention to what I tell you, and think about the things I tell you to think about, you can easily experience what it is like to be

hypnotized. There is nothing fearful or mysterious about hypnosis. It is a perfectly normal consequence of certain psychological principles. It is merely a state of strong interest in some particular thing. In a sense you are hypnotized whenever you see a good movie and forget you are part of the audience, but instead feel you are part of the story. Many people report that becoming hypnotized feels at first like falling asleep, but with the difference that somehow or other they keep hearing my voice as a sort of background to whatever other experience they may have. In some ways hypnosis is like sleepwalking; however, hypnosis is also an individual experience and is not just alike for everyone. In a sense the hypnotized person is like a sleepwalker for he can carry out various and complex activities while remaining hypnotized. All I ask of you is that you keep up your attention and interest and continue to cooperate as you have been cooperating. Nothing will be done that will cause you any embarrassment. Most people find this a very interesting experience.

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

Just relax. Don't be tense. Pay close attention to my voice. Try to pay attention to is as much as you can. Should your attention wander away from it, that will be all right...just bring your attention back to it. After a while you may find that my voice seems to become faint or to recede

from you or again changes in quality. That is all right. Should you get sleepy, that will be fine too. Whatever happens, let it happen and just keep listening to my voice while you become more and more relaxed. More and more relaxed. Just listen and relax. Whatever you feel is happening, just let it happen.

Relax completely. Relax every muscle of your body. Relax the muscles of your legs...Relax the muscles of your feet...Relax the muscles of your hands, of your fingers... Relax the muscles of your neck, of your chest...Relax all the muscles of your body. Let yourself be limp, limp, limp. Relax more and more, more and more. Relax completely. Relax completely. Relax completely.

As you relax more and more, a feeling of heaviness comes over your body. A feeling of heaviness is coming into your legs and your arms...into your feet and your hands...into your whole body. Your legs feel heavy and limp, heavy and limp...Your arms are heavy, heavy...Your whole body feels heavy, heavier and heavier. Like lead. You are beginning to feel drowsy, drowsy and sleepy. Your breathing is becoming slow and regular. You are getting drowsy and sleep, more and more drowsy and sleepy while your entire body becomes more and more relaxed, more and more relaxed.

You are relaxed, quite relaxed. But you can relax even more if you allow yourself to do so. You will soon attain a state of deep, of complete relaxation. You are becoming in-

creasingly drowsy and sleepy. There is a pleasant feeling of warmth and heaviness throughout your body. You feel so relaxed, so sleepy. You are losing interest in everything else but my voice to which you listen sleepily. Soon there will be nothing else to attend to but my voice. All the while you keep becoming more and more deeply relaxed.

You are relaxed, very relaxed. There is a pleasant feeling of warmth and heaviness, of lethargy, all through your body. You are tired and drowsy. Tired and sleepy. Sleepy. Sleepy. You want only to listen to my voice. Pay attention to nothing else but my voice. You have no cares or worries now. You are pleasantly, deeply relaxed, getting more deeply relaxed all the time. Everything else but my voice is becoming remote, quite remote. Nothing else but my voice and what I have to say to you now seems of interest. And even my voice may come to you as in a dream as you relax more and more, as you sink deeper into this lethargy, this state of relaxation. Relax, relax...deeply relaxed. Deeper and deeper all the time.

You feel drowsy and sleepy. Just keep listening to my voice. Pay close attention to it. Keep your thoughts on what I am saying--just listen. You are going to get much more drowsy and sleepy. Soon you will be deep asleep but you will continue to hear me. You will not awaken until I tell you to do so. I shall now begin to count. At each count you will feel yourself going down, down, into a deep comfor-

table, a deep restful sleep. You are going to go deeply asleep. One...You are going to go deeply sleep...Two... down, down into a deep, sound sleep...Three...Four...more and more, more and more asleep...Five...Six...Seven...you are sinking, sinking into a deep, deep sleep. Nothing will disturb you. Pay attention only to my voice and only to such things as I may call to your attention. I would like you to keep on paying attention to my voice and the things that I tell you...Eight...Nine...Ten...Eleven...Twelve...deeper and deeper, always deeper asleep...Thirteen...Fourteen...Fifteen ...although deep asleep you can hear me. You will always hear me no matter how deeply asleep you may feel yourself to be...Sixteen...Seventeen...Eighteen...deep asleep, fast asleep. Nothing will disturb you. Nineteen...Twenty...Deep asleep! You will not awaken until I tell you to do so. You will wish to remain asleep as you are now until I tell you to awaken.

Now that you are very relaxed and sleepy, listening without effort to my voice, I am going to help you to learn more about how your thoughts affect your actions in this state. Not all people experience just the same things in this state, and perhaps you will not have all the experiences I will describe to you. That will be all right. But you will have at least some of the experiences and you will find these interesting. You just experience whatever you can. Pay close attention to what I tell you and watch what happens. Just

let happen whatever you find is happening even if it is not what you expect.

(At this point three items from the Stanford Hypnotic Susceptibility Scale were interjected for purposes of providing data to test for amnesia. Hands moving together, arm rigidity, and verbal inhibition were arbitrarily selected for this purpose.)

Remain relaxed and pay close attention to what I am going to tell you next. In a moment I shall begin counting backwards from twenty to one. You will gradually wake up, but for most of the count you will remain in the state you are now in. By the time I reach five you will open your eyes, but you will not be fully aroused. When I get to one you will be fully alert, in your normal state of wakefulness. You probably will have the impression that you have slept because you will have difficulty in remembering all the things that you did or felt. In fact, you will find it to be so much of an effort to recall any of these things that you will have no wish to do so. It will be much easier simply to forget everything until I tell you that you can remember. You will remember nothing of what has happened until I say to you: Now you can remember everything! You will not remember anything until then. After you open your eyes, you will feel fine. You will have no headache or other after effects. I shall now count backwards from twenty and at five, not sooner, you will open your eyes but not be fully aroused until I say one. At

one you will be awake. A little later, after you have awakened, I will say the word okay. As soon as I say the work okay, which I will do after you awaken, you will rub your head. You will do this but not know why. You will forget that I told you to do so, just as you will forget everything until I say to you, Now you can remember everything. Ready now: 20 - 19 - 18 - 17 - 16 - 15 - 14 - 13 - 12 - 11 - 10 (halfway) 9 - 8 - 7 - 6 - 5 - 4 - 3 - 2 - 1. Wake up! Wide awake!"

APPENDIX D

1. Ask the subject to be seated in the subject chair. As soon as the subject appears to be settled say:

   "There are actually several parts to this experiment. During the part we shall do in a moment you will first be hypnotized by listening to a recorded induction procedure. After we are finished with the first part, I will explain to you what is to follow next. All right?"

2. Turn on recorder. (Tape contains introductory statement, induction, post-hypnotic suggestion and de-hypnotization. Use order tape applicable, that is, amnesia first followed by no amnesia or vice versa as required to control for order effect.)

3. A. After pre-recorded de-hypnotization ends and if subject has eyes open say:

   "How do you feel? Do you feel wide awake?" (If drowsy:) "The feeling will go away soon. You feel wide awake now."

   B. If subject keeps eyes closed say:

   "Wake up! Wide awake! How do you feel?" (If drowsy:) "The feeling will go away soon. You feel wide awake now."

4. Proceed with interrogatory interview and record data.

5. When interview is completed say to the subject:

   "I would now like for you to complete this short questionnaire. The instructions are printed at the top of the page."

6. Administer Field Inventory of Hypnotic Depth.

7. When subject finishes say:

   "Before we begin the next part of the experiment I think you ought to know that a few of the instructions I will give in the course of this phase will sound like those you were given earlier. In carrying out these instructions try not to let yourself be influenced by what you did or did not do then. That is, don't feel you are expected to perform or not to perform the same way you did earlier. Just do what seems most natural for you to do at the time the instructions are given. Any questions at this point?" (If so, answer by paraphrasing above information.) Continue:

"You will now be re-hypnotized, again using a pre-recorded induction. Ready?"

8. Turn on recorder and proceed with second pre-recorded induction.

9. A. After pre-recorded de-hypnotization ends and if subject has eyes open say:

"How do you feel? Do you feel wide awake?" (If drowsy:) "The feeling will go away soon. You feel wide awake now."

B. If subject keeps eyes closed say:

"Wake up! Wide awake! How do you feel?" (If drowsy:) "The feeling will go away soon. You feel wide awake now."

10. Proceed with second interrogatory interview and record data.

11. Thank subject for participating and terminate experiment.

APPENDIX E

1. As soon as you are satisfied the subject is awake say: Do you feel OKAY/How do you feel NOW? If subject responds to first OKAY/NOW, wait until response is completed then say: Well, you just did what I was going to ask you to do next. Do you have any idea why you rubbed your head before I had a chance to instruct you further? Record subject's remarks then continue, if necessary, by saying: "Well, that's all right, just bring your arm down and relax."

2. If no response to the first post-hypnotic signal wait until subject finishes speaking then say: OKAY/NOW let's try something else. If subject responds to the second OKAY/NOW, wait until response is completed then say: Well, you just did what I was going to ask you to do next. Do you have any idea why you rubbed your head before I had a chance to instruct you further? Record subject's remarks then continue, if necessary, by saying: Well, that's all right, just bring your arm down and relax.

3. Regardless of whether the subject responds to the OKAY/NOW or not say: Now please rub your head (again). When action is completed say: Fine, you may bring your arm down and relax.

4. A. If the subject raised his arm in response to the 1st or 2nd presentation of the post-hypnotic signal say: You have just experienced rubbing your head twice. Please compare your experience of this action on each of the two occassions and tell me in your own words what you experienced each time. Did you notice any differences between them?

B. Well, did you do anything differently either time in bringing about the action?

C. Well, did they seem different in any way?

D. Did your hand and arm feel the same way each time?

E. If the subject has given insufficient information on any one of the comparisions to make a voluntary/non-voluntary judgment, ask him directly at this point if at any time he felt an effect occurred on its own or by itself without him making it happen or without him feeling he was controlling it.

5. Next, say to the subject: Please tell me in your own words everything that happened while you were hypnotized. Record subject's remarks.

6. Remove amnesia if amnesia suggestions were given.

7. If subject does not respond to the post-hypnotic signal say: Just before I woke you up I told you that the next time I used the word OKAY/NOW you would rub your head. Can you recall when it was I used the work OKAY/NOW after you woke up? Help subject to answer if necessary, then proceed. Do you have any idea why you didn't do so? Record subject's remarks.

8. Terminate interview.

APPENDIX F

INDIVIDUAL SCORING FORM
POST-HYPNOTIC RESPONSE

Name of Subject_____

Name of Experimenter_____

Date_____

Order_____

Responded: Yes_____ No_____

1st_____ 2nd_____ Post-hypnotic Signal.

Reaction Time: _____ seconds.

Response: Partial_____ Complete_____

Response: Voluntary_____ Non-voluntary_____

Other Responses:

APPENDIX G

Name_____ Date_____

Listed below are a number of statements describing experiences you may have had in hypnosis. Please read the first statement carefully and decide whether it is true (or mostly true) as applied to you, or whether it is false (or mostly false) as applied to you. Merely circle "T" (true) or "F" (false), whichever applies... Then go on to the rest of the statement... It is essential that every statement be answered, even though some may seem difficult or unclear.

1.	Time stood still.	T	F
2.	My arm trembled or shook when I tried to move it.	T	F
3.	I felt dazed.	T	F
4.	I felt aware of my body only where it touched the chair.	T	F
5.	I felt I could have tolerated pain more easily during the experiment.	T	F
6.	I could have awakened any time I wanted to.	T	F
7.	I was delighted with the experience.	T	F
8.	The experimenter's voice seemed to come from very far away.	T	F
9.	I tried to resist but I could not.	T	F
10.	Everything happened automatically.	T	F
11.	Sometimes I did not know where I was.	T	F
12.	It was like the feeling I have just before waking up.	T	F
13.	When I came out I was surprised at how much time had gone by.	T	F

GO ON TO NEXT PAGE

14.	I came out of the trance before I was told to.	T	F
15.	During the experiment I felt I understood things better or more deeply.	T	F
16.	I was able to overcome some or all of the suggestions.	T	F
17.	At times I was deeply hypnotized and at other times I was only lightly hypnotized.	T	F
18.	During the final "countdown" to wake me up I became more deeply hypnotized for a moment.	T	F
19.	At times I felt completely unaware of being in an experiment.	T	F
20.	I did not lose all sense of time.	T	F
21.	It seemed completely different from ordinary experience.	T	F
22.	I was in a medium hypnotic state, but no deeper.	T	F
23.	Things seemed unreal.	T	F
24.	Parts of my body moved without my conscious assistance.	T	F
25.	I felt apart from everything else.	T	F
26.	It seems as if it happened a long time ago.	T	F
27.	I felt uninhibited.	T	F
28.	At times I felt as if I had gone to sleep momentarily.	T	F
29.	I felt quite conscious of my surroundings all the time.	T	F

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30.	Everything I did while hypnotized I can also do while I am not hypnotized.	T	F
31.	I could not have stopped doing the things the experimenter suggested even if I tried.	T	F
32.	It was a very strange experience.	T	F
33.	I felt amazed.	T	F
34.	From time to time I opened my eyes.	T	F
35.	I couldn't stop movements after they got started.	T	F
36.	I had trouble keeping my head up all during the experiment.	T	F
37.	My mind seemed empty.	T	F
38.	It seemed mysterious.	T	F

APPENDIX H

Now please seat yourself comfortably just as you did last time, placing a hand on each arm of the chair and close you· eyes. I am about to help you to relax, and meanwhile I shall give you some instructions that will help you to gradually re-enter a state of hypnosis. Now relax and keep listening to my words. You can become hypnotized again if you are willing to do what I tell you to, and if you concentrate on what I say. You can be hypnotized only if you want to be. There would be no point in participating if you were resisting being hypnotized. Just do your best to concentrate on and to pay close attention to my words, and let happen whatever you feel is going to take place. Just let yourself go. Pay close attention to what I tell you to think about; if your mind wanders, bring your thoughts back to my voice, and you can easily experience more of what it is like to be hypnotized. Hypnosis is not something supernatural or frightening. It is perfectly normal and natural, and follows from the conditions of attention and suggestion we are using together. It is chiefly a matter of focusing your attention sharply on some particular thing. Sometimes you experience something very much like hypnosis when driving along a straight highway and you are oblivious to the landmarks along the road. The relaxation in hypnosis is very much like the first stages of falling asleep, but you will not be asleep in the ordinary sense of the word because you will continue to hear my voice and will be able to direct your thoughts to the topics I suggest. Hypnosis is a little

like sleepwalking, because the person is not quite awake, and can still do many of the things that people do when they are awake. What I want from you is merely your willingness to go along and to let happen whatever is about to happen. Nothing will be done to embarrass you. Most people find their second experience more interesting than the first.

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

Now take it easy and just let yourself relax. Don't be tense. Just listen carefully to my voice. If your thoughts wander away from it, that is all right, but bring your attention back to it. Sometimes my voice may seem to change a little, or sound as if it were coming from far off. That is all right. If you begin to get sleepier, that will be fine too. Whatever happens, accept it, and just keep listening to my voice as you become more and more relaxed. More and more relaxed. Just listen and relax. Whatever you feel is happening, just let it happen.

Relax completely. Relax every muscle of your body. Relax the muscles of your legs.... Relax the muscles of your feet.... Relax the muscles of your arms.... Relax the muscles of your hands, of your fingers.... Relax the muscles of your neck, of your chest... Relax all the muscles of your body.... Let yourself be limp, limp, limp. Relax more and more, more and more. Relax completely. Relax completely.

As you relax more and more, a feeling of heaviness comes over your body. A feeling of heaviness is coming into your legs and your arms...into your feet and your hands...into your whole body. Your legs feel heavy and limp, heavy and limp.... Your arms are heavy, heavy.... Your whole body feels heavy, heavier and heavier. Like lead. You are beginning to feel drowsy, drowsy and sleepy. Your breathing is becoming slow and regular. You are getting drowsy and sleepy, more and more drowsy and sleepy while your entire body becomes more and more relaxed, more and more relaxed.

You are relaxed, quite relaxed. But you can relax even more if you allow yourself to do so. You will soon attain a state of deep, of complete relaxation. You are becoming increasingly drowsy and sleepy. There is a pleasant feeling of warmth and heaviness throughout your body. You feel so relaxed, so sleepy. You are losing interest in everything else but my voice, to which you listen sleepily. Soon there will be nothing else to attend to but my voice. All the while you keep becoming more and more deeply relaxed.

You are relaxed, very relaxed. There is a pleasant feeling of warmth and heaviness, of lethargy, all through your body. You are tired and drowsy. Tired and sleepy. Sleepy. Sleepy. You want only to listen to my voice. Pay attention to nothing else but my voice. You have no cares, no worries now. You are pleasantly, deeply relaxed, getting more deeply relaxed all the time. Everything else but my voice is becoming

remote, quite remote. Nothing else but my voice seems important, nothing else is important. Nothing else but my voice and what I have to say to you now seems of interest. And even my voice may come to you as in a dream as you relax more and more, as you sink deeper into this lethargy, this deep state of relaxation. Relax, relax...deeply relaxed. Deeper and deeper all the time.

You feel drowsy and sleepy. Just keep listening to my voice. Pay close attention to it. Keep your thoughts on what I am saying...just listen. You are going to get much more drowsy and sleepy. Soon you will be deep asleep but you will continue to hear me. You will not awaken until I tell you to do so. I shall now begin to count. At each count you will feel yourself going down, down, into a deep, comfortable, a deep restful sleep. A sleep in which you will be able to do all sorts of things I ask you to do. One....You are going to go deeply asleep.... Two...down, down into a deep sound sleep .... Three...four...more and more, more and more asleep.... Five...six...seven...you are sinking, sinking into a deep, deep, deep sleep. Nothing will disturb you. Pay attention only to my voice and only to such things as I may call to your attention. I would like you to keep on paying attention to my voice and the things I tell you.... Eight...nine...ten...eleven... twelve...deeper and deeper, always deeper asleep.... Thirteen... fourteen...fifteen...although deep asleep you can clearly hear me. You will always hear me no matter how deeply asleep you may feel yourself to be.... Sixteen...seventeen...eighteen...

deep asleep, fast asleep. Nothing will disturb you....Nineteen ...twenty. Deep asleep! You will not awaken until I tell you to do so. You will wish to sleep just as you are now.

Now that you are very relaxed and sleepy, listening without effort to my voice, I am going to help you to learn more about how your thoughts affect your actions in this state. Not all people experience just the same things in this state, and perhaps you will not have all the experiences I will describe to you. That will be all right. But you will have at least some of the experiences and you will find these interesting. You just experience whatever you can. Pay close attention to what I tell you and watch what happens. Just let happen whatever you find is happening, even if it is not what you expect.

(At this point three items from the Stanford Scale of Hypnotic Susceptibility were interjected for purposes of providing data to test for amnesia. Hands moving apart, verbal inhibition and eye catelepsy were arbitrarily selected for this purpose.)

Remain deeply relaxed and pay close attention to what I am going to tell you next. In a moment I shall begin counting backwards from twenty to one. You will gradually wake up, but for most of the count you will still remain in the state you are now in. By the time I reach "five" you will open your eyes, but you will not be fully aroused. When I get to "one" you will be fully alert, in your normal state of wakefulness. After you open your eyes, you will feel fine. You will have

no headaches or other after effects. I shall now count backwards from twenty, and at "five," not sooner, you will open your eyes but not be fully aroused until I say "one." At "one" you will be awake.... A little later, after you have awakened, I will say the word "okay". As soon as I next say the word "okay", which I will do after you awaken, you will touch your head. Ready, now: 20 - 19 - 18 - 17 - 16 - 15 - 14 - 13 - 12 - 11 - 10 (halfway) 9 - 8 - 7 - 6 - 5 - 4 - 3 - 2 - 1.

APPENDIX I

DURATION OF POST-HYPNOTIC EFFECT

The duration of post-hypnotic effect is a matter of only peripheral interest to the present study and one which was not tested. Nevertheless, it impinges upon it to such an extent that it commands brief discussion. It is important in that many therapeutic post-hypnotic suggestions are structured to take effect only at designated times or on future occurrences of specific symptoms. Being knowledgable, therefore, about the expected duration of post-hypnotic suggestions expands the therapist's proficiency and should be taken into consideration during the treatment planning phase of therapy.

The literature from early days to present is resplendent with accounts of hypnotic suggestions lasting over periods of time up to twenty years. The majority of these, while interesting and informative, are inconclusive, not having been subject to experimental controls and often only casually referred to. Controlled studies have been run with respect to the duration of post-hypnotic suggestions and, while it must be recognized that there are different types of post-hypnotic suggestions and caution must be taken in attempting to extrapolate from one to the other, the data is of value.

Kellogg (1929) found a decrease in the force of the suggestion over time with a sharp fall during the first three weeks then leveling off to last perhaps indefinitely.

Patten (1930) showed the effects of a post-hypnotic suggestion to last for at least a month and up to eight months

with intervening hypnotic sessions. As a result of his study Patten hypothesized that continued repetitions of a suggestion tend to lead to its indefinite persistence, a conditioned reflex having been established.

Wells (1940) gave four subjects amnesia suggestions for recall and recognition of nonsense syllables learned in hypnosis. The amnesia was tested at one month and one year and found to be 100% effective for all subjects on both occassions.

Edwards (1963) reported finding the effects of post-hypnotic suggestions persisting for up to eight months without reinforcement.

Weitzenhoffer (1950) tested the effects of post-hypnotic suggestion with intervening hypnosis and found a sustained effect for up to 134 days.

There are several possible explanations as to the ramifications involved in determining the effective duration of a post-hypnotic suggestion. At this point in our understanding of the nature of hypnosis and its phenomenon, all such attempts at formulating an explanation are speculative, based upon theory derived from accumulated experimentation and experience.

Several factors which appear to be relevant in this respect are the depth of hypnosis at the time the suggestion is given, the nature of the suggestion itself and the amount and type of reinforcement.

It would seem that the depth of hypnosis at the time the post-hypnotic suggestion is given has a definite bearing

upon its effectiveness. Persons who are deeply hypnotized are generally able to experience hypnotic phenomena unexperienced by those in lighter stages. Presumably they are able to integrate the suggestion more fully and thus respond more often and for longer periods.

The nature of the suggestion itself is of considerable importance. Innocuous suggestions which are seldom brought forth or called upon may lie dormant yet remain effective for years. On the other hand, suggestions which constantly assail the subject's conscious or subconscious awareness, as is often the case in therapy, may find themselves weakened or extinguished in the exchange.

Reinforcement will usually lengthen the duration of a post-hypnotic suggestion and is especially indicated in cases involving counter-conditioning as previously mentioned.

Underlying all these factors are the idiosyncratic personality dynamics of the individual. All variables within the person and the procedures are constantly in interaction and invariably effect the outcome of the undertaking. Until we have a clear understanding of hypnosis and a firm grasp of the dynamics of personality, absolutes cannot exist and we must, for the present, rely upon what our experience, as discussed, leads us to assume.

APPENDIX J

RAW DATA

	Amnesia Condition				No Amnesia Condition			
Subject	Resp.	Time	P/C	V/NV	Resp.	Time	P/C	V/NV
1	1	.9	1	1	1	2.1	1	1
2	1	.6	1	1	0	0	0	0
3	1	5.1	1	1	0	0	0	0
4	1	.9	1	1	1	4.0	1	1
5	0	0	0	0	0	0	0	0
6	1	1.1	1	1	0	0	0	0
7	1	2.2	1	1	0	0	0	0
8	0	0	0	0	1	1.4	1	1
9	1	1.6	1	1	0	0	0	0
10	1	1.2	1	1	1	2.9	1	1
11	1	2.2	1	1	0	0	0	0
12	0	0	0	0	0	0	0	0
13	1	1.4	1	1	1	1.5	1	1
14	1	.5	1	1	1	1.2	1	1
15	0	0	0	0	1	1.0	1	1
16	1	1.5	1	1	1	1.1	1	1
17	0	0	0	0	1	1.7	1	1
18	1	1.0	1	1	1	2.1	1	1
19	1	.6	1	1	0	0	0	0
20	1	.7	1	1	1	.9	1	1
21	1	1.6	1	1	0	0	0	0
22	1	.9	1	1	0	0	0	0
23	1	1.4	1	1	1	2.3	1	1
24	1	1.2	1	1	1	1.1	1	1
25	1	1.1	1	1	0	0	0	0
26	1	1.3	1	1	1	1.5	1	1
27	1	2.0	1	1	1	1.9	1	1
28	1	.8	1	1	1	1.4	1	1
29	1	.9	1	1	1	1.7	1	1
30	1	1.4	1	1	1	3.1	1	0
Total	25	84.1	25	25	18	152.9	18	17