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DONNA D. PISTOLE

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A MULTIVARIATE ASSESSMENT  
OF HYPNOTIC SUSCEPTIBILITY AS A FUNCTION  
OF LOCUS OF CONTROL, METHOD OF INDUCTION,  
AND SEX OF SUBJECT

BY

DONNA D. PISTOLE

M.A., University of New Hampshire, 1975  
B.A., Wayne State University, 1965

A DISSERTATION

Submitted to the University of New Hampshire  
In Partial Fulfillment of  
The Requirements for the Degree of

Doctor of Philosophy  
Graduate School  
Department of Psychology  
December 1978

This thesis has been examined and approved.



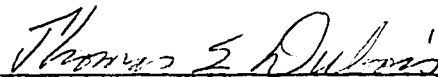
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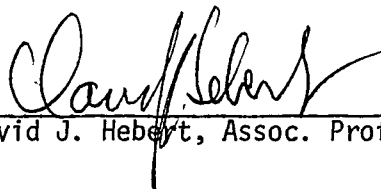
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### ACKNOWLEDGEMENTS

To Ronald Shor, whose patience has been thoroughly tested and not found wanting.

To Dollie Straw, to whom this represents much, including weeks of unanswered correspondence.

To Thomas Pistole, who provided the "hypnotist's voice" for the research and a strong shoulder for the researcher.

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## ABSTRACT

### A MULTIVARIATE ASSESSMENT OF HYPNOTIC SUSCEPTIBILITY AS A FUNCTION OF LOCUS OF CONTROL, METHOD OF INDUCTION, AND SEX OF SUBJECT

by

DONNA D. PISTOLE

The primary purpose of this research was the investigation of the roles of locus of control, method of hypnotic induction, and sex of subject in hypnotic susceptibility. Susceptibility was measured by both objective and subjective total and factor scores, using the factors identified by Peters *et al.* (1974).

On the basis of Rotter locus of control scores, 367 subjects were classified as holding internal or external locus of control beliefs and were administered one of three inductions, including a consonant preinduction statement: (1) other-directed, emphasizing the hypnotist as the controller; (2) self-directed, emphasizing the subject as the controller; (3) cooperative, emphasizing the combined roles of hypnotist and subject. All inductions were variants of HGSHS:A (Shor & Orne, 1962). Item-by-item measures were taken of objective performance, subjective experience, feelings of involuntariness, desire to have the experience, resistance to suggestions, and vividness of imagery; global measures were taken of estimates of hypnotic depth, perceived source of hypnotic control, conformity of experiences to expectations, and degree of dissociation.

Locus of control was not statistically significant either as a main effect or in any interactions. Induction condition showed significant main effects on both objective and subjective total scores and on all

factor scores except subjective Factor II (direct suggestion items) and on vividness of imagery, involuntariness, estimate depth, and perception of hypnotic control source. In all cases, the cooperative and self-directed conditions did not differ; scores in the other-directed condition were significantly lower than those in the cooperative condition on all the above measures, and significantly lower than those in the self-directed condition on all the above except objective Factors II and III (direct suggestions and cognitive items). Females obtained significantly higher scores than males on both subjective and objective total scores, on all factor scores except objective Factor III, and on vividness of imagery, feelings of involuntariness, and estimated depth. Also reported are data on subjects' beliefs and expectations concerning hypnosis prior to the induction session and the results of several analyses subsidiary to the study's main goal.

Discussion centers on implications for future hypnosis research on the locus of control variable. Various possible approaches to the concept of control are examined and the argument is presented that concepts of control applicable to the normal waking state may not be relevant to control within hypnosis, which is linked more closely to the concept of dissociation. Finally, possible reasons for the obtained differences between induction conditions and between males and females are discussed, with special attention to the dimensions on which the induction conditions varied.

## INTRODUCTION

Throughout the history of hypnosis, two of the most consistently observed phenomena have been variability and stability: variability among individuals in hypnotic susceptibility and relative stability of susceptibility on an individual level. Variability in susceptibility is so well-recognized in both clinical and experimental settings that it scarcely needs reference, though a survey of norms on the much-used Harvard Group Scale of Hypnotic Susceptibility, Form A (HGSHS:A; Shor & Orne, 1962) provides ample evidence (Shor & Orne, 1962, 1963; Coe, 1964). The relative stability of individual susceptibility, barring (and sometimes even in spite of) attempts to modify it, is attested to by both test-retest results and longitudinal studies (Hilgard, 1965; Diamond, 1974).

These two phenomena, variability among individuals and stability within the individual, have led many researchers to a search for some personality factor(s) in susceptibility. Efforts to determine personality correlates of susceptibility, however, have not thus far met with much success (Deckert & West, 1963; Hilgard, 1965; Barber, 1964, 1969). An intensive program of research undertaken by Hilgard (1970), for example, yielded a correlation of .53 between various subject characteristics and hypnotic performance. While this correlation is higher than has been achieved by many other investigators, it still accounts for only about 28% of the variance in hypnotic performance.

Not only are the correlations between personality variables and susceptibility undesirably low, but there are also many contradictory results obtained by different researchers working with the same conceptual variables. A review of such conflicting results has led Barber

(1969) to conclude that:

Differences among individuals in suggestibility or "hypnotizability" are more closely related to inter-individual differences in situationally-variable characteristics (such as attitudes, expectations, and motivations with respect to the immediate test situation) rather than to differences among individuals in enduring personality traits. (p. 95)

Barber's conclusion notwithstanding, it still seems premature to abandon the search for personality factors in susceptibility in favor of situationally-variable characteristics. While attitudes, expectations and motivations have been shown to be relevant, correlations between these factors and susceptibility have not in general been much more encouraging than those based on personality variables. Diamond et al. (1974) found a correlation of .47 between subjects' beliefs in the desirability of hypnosis and initial susceptibility; Melei & Hilgard (1964) found correlations from .06 to .37 between attitudes toward hypnosis and initial susceptibility. Such variables do not appear, then, to provide a much better accounting of individual differences in susceptibility than do personality variables. It would seem more profitable to consider situationally-variable characteristics as supplementing rather than supplanting personality variables as determinants of susceptibility.

The question remains as to why the search for more strongly predictive correlates, either general personality or situationally-specific variables, has not been very fruitful. It may be, as Hilgard (1970) suggests, that researchers have simply not yet happened upon the most relevant variables or that present tests do not tap such variables as deeply or as subtly as is needed.

Three alternative directions for the assessment of the role of personality variables are proposed here, each of which is addressed by

the present study.

1. Interaction between personality and situational variables.

Researchers investigating personality correlates of susceptibility have typically used one of the standardized induction and testing procedures such as the HGSHS (Shor & Orne, 1962) or one of the Stanford Hypnotic Susceptibility Scales (SHSS; Weitzenhoffer & Hilgard, 1959, 1962). While these standardized procedures have proved very useful in many research situations, the exclusive use of a single such procedure in a given study precludes any assessment of interactions between subject characteristics and the form of hypnotic induction. Specifically, it is suggested here that subjects who differ on some characteristics may respond differentially depending upon the method of induction used.

The possibility of an interaction between subject characteristics and form of induction was suggested long ago by Ferenczi's description (1909, cited in Hilgard, 1970) of two types of induction, an authoritarian "father hypnosis" and a gentler "mother hypnosis", and his belief that some people were more ready for the former and others more ready for the latter. The need to include environmental variables in studying susceptibility has been emphasized more recently as well and its value demonstrated by studies showing that susceptibility varies with the definition of the situation provided to subject (e.g., Barber, 1969; Diamond, 1974).

Hilgard (1967) suggests that choosing a technique appropriate to a particular individual may be very important, especially in clinical work. Certainly clinicians, working in a one-to-one relationship with individuals with the specific goal of maximizing hypnotic performance to a particular end (as contrasted with the usual research goal of systemati-



cally assessing the normative distribution of susceptibility), tend to adjust their methods to the individual (e.g., Wölberg, 1948). Their choice of a particular technique in a given case must originate in part from some intuitive and/or experience based assessment of the individual's needs, traits, and expectancies. To the extent that these factors are relatively stable and can be measured adequately by instruments currently available, it should be possible to determine experimentally their interaction with method of induction. The primary purpose of the present study is to investigate such an interaction, using locus of control as the main subject variable and utilizing three induction techniques that vary along a dimension to be described.

2. Multidimensional assessment of susceptibility. Hypnotic susceptibility is commonly measured as if it were a unidimensional phenomenon, each subject's score being a composite of performance on a series of individual items. If susceptibility is not unidimensional, treating it as if it were may well cloud the influence of individual differences (Hammer et al., 1963; Gardner, 1976), whether they be situationally-variable characteristics or enduring personality traits. This is particularly true for subjects whose total scores are in the middle range, for as Evans (1968) notes, moderate scores may be the result of moderate scores on all clusters of items tested or of high scores on some clusters and low scores on others.

Several authors have used factor analysis to determine whether such clusters of items do exist within the standardized induction scales, and their results are quite consistent. Peters et al. (1974) identified three factors within the items of HGSHS:A. The post-hypnotic

amnesia item was not included in analysis and the factor placement of the eye closure item was ambiguous, but the remaining ten items fell into three clusters: a factor best described as challenge items, a factor concerned with direct suggestions (possibly a difficulty factor, since easier items loaded here), and a factor described as cognitive (comprised on hallucination and post-hypnotic suggestion items). Hilgard (1965) reported a similar factor structure for SHSS:A (upon which HGSHS:A is based) as did Burns (1977) for Orne & O'Connell's (1967) Diagnostic Rating Scales following intervention intended to raise hypnotic performance to asymptotic levels.

Little research has yet been done using factor scores, though one study by Evans and Thorn (1964) using factors identified by Hammer *et al.* (1963) confirms the potential of this approach. It may be that susceptibility on particular factors will correlate with individual differences where global scores do not, a possibility which is explored in the present study.

3. Subjective measures of susceptibility. To date, researchers using HGSHS:A, upon which the inductions used in this study are based, have relied almost exclusively upon objective scores as the dependent measure. Even when hypnotic test items are subject-rated, as is the case in most research where subjects are tested in groups, the criteria for passing or failing items are in terms of overt responses: subjects are asked to rate their performance in terms of what an onlooker would have observed.

There is growing sentiment, particularly among state theorists, that reliance upon only overt performance misses something important

in the essence of hypnosis (Orne, 1959; O'Connell, 1964; Shor, 1977). Non-state theorists, too, have begun to focus on various subjective measures as important dependent variables (e.g., Barber & Calverly, 1969). The Barber Suggestibility Scale (BSS; Barber & Calverly, 1966) assesses subjective responses on individual items, and Orne and O'Connell's (1967) Diagnostic Rating Scale uses post-hypnotic interviews on subjective experiences along with objective criteria to arrive at a global depth score. Other researchers have most often expanded measures to the subjective realm by assessing experiences on particular aspects such as perceived involuntariness or reports of goal-directed fantasy (e.g., Spanos & McPeake, 1974; Spanos et al., 1976) or by obtaining global depth estimates from subjects either during or following hypnosis (e.g., O'Connell, 1964; Tart, 1970), leaving depth criteria open to individual definition.

Field and Palmer (1969) performed a factor analysis on 12 objective items of SHSS:A along with 38 items describing subject's experiences during hypnosis. The loadings of the resulting seven factors led these researchers to conclude that "behavioral and subjective features of hypnosis have something in common, but at the same time have separate, distinct aspects," each one only partially predicting the other.

The present study uses a variety of subjective measures, all collected following completion of the hypnotic session. Included are variables which other researchers have measured: an overall assessment of depth and, for individual test items, perceived involuntariness and vividness of imagery. There is in addition assessment of other particular aspects of experience which do not appear to have been measured on

an item-by-item basis by previous researchers: desire to have each experience and active resistance to each suggestion. Given the aim of exploring the role of subject characteristics in new ways, one step will be determination of whether differences among subjects relate to experiences on some of these aspects even if objective scores are not affected.

There is one other important subjective measure used here, the subjective score. This is an item-by-item measure not of a single aspect of experience (cf. resistance, involuntariness) but more directly comparable, on the subjective dimension, to objective performance scores, the covert equivalent of overt reaction. Where, for example, the objective scoring calls for a report on whether an onlooker would have observed the subject's head to fall forward at least two inches, the subjective score asks "Regardless of whether an onlooker would have observed your head falling, did you feel a sensation of its getting heavier or of its "trying" to fall?"

While there is some suggestion of involuntariness in the latter part of this sample question, it differs from the involuntariness measure in that the latter is restricted to items where some overt response has been made. Thus, a subject may respond positively to this question without having made any overt response. A positive answer suggests that the subject was probably responding internally to the suggestion and might have responded overtly if given more time or better imagery or if resistance, if present, could have been overcome. As such, it may be a more sensitive measure of hypnotic susceptibility than objective scores and may reveal differences among subjects which

objective scores do not.

Further, if it is the covert equivalent of objective scores, we may be confident enough in its having a comparable factor structure to analyze effects in terms of both global subjective score and subjective factor scores. This type of subjective score does not appear to have been used before in connection with HGSHS (though it is very similar to the subjective measure on the Barber Suggestibility Scale; Barber & Calverly, 1966) nor considered anywhere in its factorial complexity, and thus represents a new contribution to the literature. The usefulness of such a subjective measure was demonstrated in a study by Spanos *et al.* (1973) in which vividness of imagery (assessed prior to induction) was positively correlated with subjective scores on BSS but not with objective scores and control of imagery correlated negatively with subjective scores but not with objective scores.

The preceding section was intended to outline the general approach of this research. The more specific nature of the study is presented below in a discussion of the variables which are investigated.

### Variables

#### Locus of Control

Though researchers and theorists today have generally discarded the conception of hypnosis as a situation in which an all-powerful hypnotist gains control over another, this view, promulgated still by stage "hypnotists", persists among laymen, and the issue of control appears to be a very important one for many potential subjects (Fromm, 1972; Zimbardo *et al.*, 1972; Spanos *et al.*, 1977). In pre-induction conversation or classroom discussion of hypnosis one encounters again and again expressions of fear of losing control, of being controlled,

or of demonstrating a "weak will". In the hypnotic session itself, subjects are most often impressed by those instances in which they feel things just "happened", that some force outside themselves is involved. This feeling is expressive of depth along the dimension of nonconscious involvement described by Shor (1962, 1977), in which responses take on a compulsive involuntary quality.

Given both the perennial concern of many subjects with the issue of control and the theoretical relevance of subjective perceptions of loss of control, it has been suggested (e.g., Gardner, 1976) that Rotter's (1966) locus of control scale might tap a personality variable importantly related to hypnotic susceptibility.

Rotter's scale (see Appendix A) is a 29-item forced-choice questionnaire (6 items are fillers) in which subjects choose between items reflecting beliefs that the events in their lives are controlled either by external forces or by one's own actions. Five studies have used Rotter's scale to investigate the relationship between locus of control and hypnotic susceptibility, with mixed results.

Using SHSS:A with male subjects, Diamond et al. (1974) found a correlation of only .09 (not significant) between locus of control and susceptibility. Using HGSHS, Klemm (1969) found a significant correlation for females ( $r = .36$ ), with greater susceptibility for internals, but no significant correlation for males ( $r = .007$ ). Austrin and Pereira (1978), using BSS, also found a significant correlation for females ( $r = .35$ ), but with greater susceptibility for externals, and no significant correlation for males ( $r = .06$ ).

Both Young et al. (1973) and Leva (1975) gave different pre-induction instructions to subjects, stressing success dependent upon either

the subject's willingness and cooperation or on the hypnotist's ability (Leva also used a "neutral" condition, reading only the test manual instructions). Although the pre-induction instructions differed, all subjects received the same induction procedure (SHSS:A in Young et al., HGSHS on tape in Leva).

Young et al., having excluded middle scorers on the Rotter scale, found that internals had higher and more consistent scores than externals under both sets of instructions. Both showed moderately high susceptibility under instructions stressing their own willingness and cooperation, but externals were significantly less susceptible under instructions stressing the hypnotist's ability. Leva, using the full range of Rotter scale scores, found correlations of only .10, .16, and .18 between Rotter score and susceptibility under instructions stressing hypnotist's role, subject's role, and neutral instructions, respectively.

These low-level correlations and contradictory results are typical of what is so often found in attempts to relate personality variables to susceptibility. Nevertheless, five studies is a small number on which to base a conclusion: the number of subjects tested is small (with concomitantly low statistical power) and the definition of hypnosis, which Young et al.'s (1973) study suggests is a relevant variable here, can be manipulated more strongly to assess its interaction with locus of control. The present study attempts to deal with these limitations by using a more substantial sample and by varying inductions and testing as well as pre-induction instructions (described in the next section).

This study also expands on previous ones by extending the locus of

control concept itself. As Rotter (1966) notes, "none of the items is directly addressed to the preference for internal or external control." This limitation is dealt with here on the assumption that such preferences might be useful in interpreting the hypnotic susceptibility of externals. If externals can be further classified as accepting or resentful of perceived external control, it may be that their susceptibility will vary on this basis, especially, perhaps, in interaction with the form of hypnotic induction provided.

In order to test this possibility, subjects are asked, in addition to indicating personal belief in the scale's forced-choice statements, to make judgements of whether each statement agreed with is a relatively acceptable state of affairs or not (see Appendix B). Gardner (1976) hypothesized that both externals and internals might respond differentially to active and passive induction techniques depending upon whether their locus of control beliefs are ego-syntonic or ego-dystonic. While the present extension of the Rotter scale is not precisely in line with Gardner's intentions, it does owe its inspiration in part to her discussion.

#### Pre-induction Instructions and Method of Induction

The importance of pre-induction statements, which were manipulated by Leva (1975) and Young et al. (1973) should not be underestimated. It is nevertheless the case that induction and testing concern and involve the subject more directly than pre-induction communications and occupy a much greater portion of the time spent in the experimental situation. Thus, the induction/testing procedures may have considerable effect upon the subject's perception of where the locus of control in hypnosis really lies, possibly even contradicting pre-induction messages. If the goal is to determine the importance of the congruence/incongruence of a defi-



nition of hypnosis with subjects' generalized locus of control, it may be important to carry through on the preinduction communication with an induction appropriate to it. Unless the tenor of the induction itself is consonant with the pre-induction statements, the latter may be attenuated to an unknown but possibly significant extent. A decision must be made, however, on what form the induction should take.

Fromm (1972) notes that "Hypnosis is viewed by most laymen as a state in which the subject surrenders his autonomy and passively follows the commands of an external figure, the hypnotist. Many hypnotherapists believe this to be true for authoritarian hypnosis, but not for permissive hypnosis." This distinction between two types of hypnosis is not a new one. Ferenczi's (1909, cited in Hilgard, 1970) notions of "father" and "mother" hypnosis have already been mentioned; more recently, Gardner (1976) has called for study of the roles of authoritarian vs. permissive wording. In answer to the need they saw for a non-authoritatively worded test more in tune with today's culture, Wilson and Barber (1978) developed the Creative Imagination Scale, containing suggestions "which emphasize to subjects that they are to produce the suggested experiences by their own thinking and creative imagining rather than as a result of being under the control of the experimenter, physician, or hypnotist." Previously, researchers (e.g., Barber, 1964) found that primary suggestibility was enhanced by a non-authoritative approach, and Diamond (1974) reviewed several studies reporting that a permissive approach was more effective than an authoritarian one.

Other researchers have tested the effects of induction method by comparing self- and heterohypnosis. Ruch (1975) found no difference in

initial susceptibility using three methods: self-instructed, a variant of the conventional HGSHS:A, and a first-person form of the HGSHS:A variant. Shor and Easton (1972), in a preliminary report, compared two versions of Shor's (1970) Inventory of Self-hypnosis (ISH) with HGSHS:A and found no significant difference in objective susceptibility scores, though the correlation between HGSHS:A and the breaths and timer versions of ISH were only .33 and .39, respectively. Johnson (1976) compared HGSHS:A and the ISH breaths version and found no difference in total behavioral scores though there were some differences in subjective reports, heterohypnosis yielding more feelings of unawareness, passivity and loss of control.

None of these studies have investigated interactions between subject characteristics and method of induction, a goal of the present study. It is important to note here that in comparing the effects of different methods, researchers have taken two approaches. In one approach inductions are varied on a dimension of authoritarianism/permissiveness; in the other researchers have compared self-hypnosis and heterohypnosis. These approaches seem to be mixed in some studies. Heterohypnosis is often equated with authoritarian induction and self-hypnosis with permissive induction, but this is by no means necessarily the case, as suggested most forcefully by the different results obtained in the two approaches. The dimensions of self/other and authoritarian/permissive may not be perfectly orthogonal, but they are somewhat conceptually distinct. It is possible, for example, for heterohypnosis to vary to at least some degree along the authoritarian/permissive dimension.

The two approaches have been reviewed briefly so that the approach

used here can be seen in relation to them. The present study does not attempt to define the underlying dimension of induction in either of these terms exclusively. Two inductions used are clearly heterohypnosis, but differ in the degree of authoritarianism; a third induction, roughly equivalent to Ruch's (1975) "first-person" self-hypnosis, but is still somewhat authoritarian in that specific imagery and suggestions and time limitations are provided (necessarily so in order to equate the conditions). Because the two dimensions -- authoritarian/permissive and self-hypnosis/heterohypnosis -- are mixed here, they are labeled simply according to the source of hypnotic control which forms the definition of hypnosis given to subjects in the pre-induction communication. One focuses on the controlling role of the hypnotist -- the other-directed condition; a second focuses on the controlling role of the subject -- the self-directed condition; the third focuses on the combined efforts and abilities of hypnotist and subject -- the cooperative condition. Inductions are then administered which are consonant with these pre-induction communications. The major aspects of each are described briefly below and complete texts are included as Appendices C, D, and E.

While pre-induction communications vary according to the definition of hypnosis provided, all have some comments in common, such as those intended to relax the subjects and to reassure them that they have nothing to fear from hypnosis. These comments are adopted directly from the introductory remarks suggested in HGSHS:A. All inductions are presented on tape and in each case subjects are informed that this is necessary as a control procedure.

Other-directed condition. The pre-induction communication here emphasizes the hypnotist's powers and ability in inducing the hypnotic state and no mention is made of any active role on the part of the subject. The induction itself carries through on this theme with frequent use of "I" (the hypnotist) as the creator/controller of hypnotic phenomena. Where "you" (the subject) is used, it is often in the context of "I want you to..." types of statements, i.e., the subject is the object being acted upon.

Although previous researchers (Shor & Orne, 1962; Barber & Calverly, 1964) have found no significant difference between the effectiveness of live and taped inductions, it is possible that use of a tape might diminish the intended perception of hypnosis as control from without. In this condition, then, subjects are specifically informed in the pre-induction communication that the tape was prepared by a skillful hypnotist who is as effective in inducing hypnosis on tape as in person.

Self-directed condition. The pre-induction communication here emphasizes the role of the subject's own desires and abilities. The phenomena which can be experienced are described as dependent upon the subject's own imagination and concentration, and the whole experience is defined as self-hypnosis.

Previous researchers who have varied pre-induction instructions (Young et al., 1973; Leva, 1975) appear to have stressed primarily the willingness and cooperation of the subject in the subject-oriented condition. Since it is clearly cooperation with the hypnotist that is called for, such instructions are here considered more appropriate under the cooperative condition, and no mention is made of them in

the self-directed condition except for the role of the subject's desire to experience hypnosis.

The induction itself is in the form of "I" (the subject) rather than "I" (the hypnotist), and subjects are instructed to use the tape as if they were speaking to themselves.

Cooperative condition. The pre-induction communication here emphasizes the combined roles of hypnotist and subject as working together toward a mutually desirable goal. The hypnotist's role is described as one of a helpful guide and the subject's role as one of willingness and cooperation. It is the subject himself who is pictured as achieving the hypnotic state by means of willing cooperation with the guidance offered by the hypnotist.

The induction has the tenor of "you can experience/you are experiencing." It is felt that the combined hypnotist/subject roles remain implicit in such wording. Since statements are restricted almost exclusively to the second person, the hypnotist's role is not intrusive (as in the "I" -- the hypnotist -- phrasings of the other-directed condition), yet the subject is still one of two people working to achieve a goal, with "you" implying a speaker outside the subject (as contrasted with the "I" -- the subject -- phrasings of the self-directed condition, where the hypnotist is not "present" as a second party).

All inductions are based upon HGSHS:A (Shor & Orne, 1962), which appears to be a combination of the cooperative and other-directed conditions as they are defined here. The modifications fall chiefly into three categories: a) removal of statements dissonant with pre-induction

communication (e.g., the statement "your ability to be hypnotized depends partly upon your willingness to cooperate... " is not included in either the other-directed or self-directed conditions); b) rewording of phrases so that "I/you" statements reflect the theme appropriate to each condition; c) addition of imagery wherever it could be easily done to those HGSHS:A items which did not already contain such. For example, the arm rigidity item in HGSHS:A provides the subject with the image of a bar of iron, but the head falling, finger lock, and amnesia items do not. Imagery was added to these in the form of a weight pulling the head down, hands being glued together, and a fog rolling in, respectively. No imagery was added to the communication inhibition or post-hypnotic suggestion items.

Spanos (1971) and Coe et al. (1974) found that production of goal-directed fantasy was related to passing certain kinds of items. Spanos and Barber (1972) found that providing appropriate imagery in test suggestions increased the number of goal-directed fantasies reported which was in turn related to perceived involuntariness (though not, in their study, to passing the item according to objective criteria). The addition of imagery here where feasible thus serves two purposes: to make items more equivalent to one another and to reduce the likelihood of some subjects producing their own imagery, a possible confounding if the likelihood is related to locus of control.

The resulting inductions are in some respects quite different from HGSHS:A, but its basic features have been preserved. All twelve test items are included and in the standard order, repetition and pauses remain intact, and the time allotted to various phases is quite similar.

### Sex of Subject

The attempt to determine the relationship between sex of subject and hypnotic susceptibility has a long and still inconclusive history. Many researchers (e.g., Barber and Calverly, 1963; O'Connell, 1964; Hilgard, 1965) have concluded that males and females do not differ overall in susceptibility; others (e.g., Weitzenhoffer, 1953; Pattie, 1956; Stukat, 1958) have concluded that females are more susceptible, though probably to a very slight degree. Shor et al. (1966) reported that females perform better on particular types of suggestions, those requiring radical distortions in perception, such as hallucinations; a similar conclusion was reached by Bowers (1971). It may be then that sex differences will appear when factor scores are compared, even if there are no differences in global scores.

Freundlich and Fisher (1974) found males and females differed in terms of subjective experiences, females being more likely to describe their hypnotic experience as one "in which they were under the control of the hypnotist." Since several subjective measures are gathered in the present study, it will be of interest to see if there is a sex difference on these even if not on objective scores (which have formed the basis for sex difference conclusions in most previous studies).

The role of sex of subjects appears most important, however, when one looks at interactions. Melei and Hilgard (1964) found attitudes predictive of susceptibility for females but not for males. Similarly, Rosenhan and Tomkins (1964) found preference for hypnosis predictive of susceptibility only for females. Bowers (1971) found his hypothesis regarding the relationship between susceptibility, creativity, and trance-like experiences was confirmed for females but not for males.

With regard to the locus of control variable investigated here, it has been noted before that two studies (Klemp, 1969; Austrin & Pereira, 1978) found a significant correlation between locus of control and susceptibility for females but not for males (Diamond, 1974, also found no significant correlation for males, but did not test female subjects). These studies indicate sex is an important moderator variable, certain variables being related to susceptibility for one sex but not the other, and it is included here for this reason as well as those already mentioned.

#### Beliefs and Expectations Concerning Hypnosis

While the variables described above (locus of control, method of induction, sex of subject) constitute the main body of this study, subjects are also administered a pre-hypnosis questionnaire (see Appendix F) on their beliefs about hypnosis and their expectations of what their own experience would be like.

A number of researchers have found significant correlations between susceptibility and attitudes toward hypnosis. London et al. (1962) found a correlation of .40 between susceptibility on SHSS:A and opinions and attitudes about hypnosis. Shor (1971) found significant, though low, positive correlations between scores on HGSHS:A and prediction scores based on item-by-item expectations. Diamond et al. (1974) reported a correlation of .47 between perceived desirability of hypnosis and susceptibility on SHSS:A. Both Diamond (1974) and Spanos and Barber (1974) reviewed studies linking attitudes and expectations to susceptibility and concluded that the results merited continued research efforts along these lines.

One value of such effort lies in the potential role of attitudes and expectations in the modification of susceptibility. A few studies



have already shown that manipulations designed to alter attitudes and expectations do have an effect on hypnotic performance (e.g., Gregory & Diamond, 1973). The more information that can be gathered on these variables, the more precisely and profitably modification researchers will be able to direct their efforts.

Several studies, including two cited earlier (Melei & Hilgard, 1964; Rosenhan & Tomkins, 1964) reported a sex difference in the predictability of susceptibility from attitudes and this is followed up here as well.

Barber and Calverly (1969) found that certain subjective experiences as well as overt responses were related to pre-experimental expectations of hypnotic depth, but most attitude/expectation studies in hypnosis have looked for correlation with objective scores only and none appear to have considered the relationship to factor scores, either objective or subjective. The present study makes a specific contribution to the literature in these respects.

Finally, and perhaps most importantly, twelve of the items on the beliefs and expectations questionnaire used here are concerned specifically with subjects' perceptions of where the locus of control in hypnosis lies. Lefcourt (1976) has cautioned that

... if one wishes to use the perception of control as a powerful predictor, then it will most always be profitable to design one's own assessment devices for the criterion of interest... people are not so much to be characterized as internals or externals as they may be said to hold internal and external control expectancies about different aspects of their lives.  
(p. 153)

Diamond et al. (1974) obtained a nonsignificant correlation of  $-.12$  between susceptibility and locus of control in hypnosis scores, but this appears to be the only such study on this hypnosis-specific

application of the locus of control construct, and it would seem to warrant the further testing given it here.

### Hypotheses

#### Objective scores

The major hypotheses advanced here deal with the anticipated interaction between locus of control and method of induction (which includes the pre-induction communication).

Since externals believe that what happens to them is more the result of external forces than their own efforts and abilities, it was hypothesized that they would be most susceptible in the other-directed condition, a possible exception being lesser susceptibility for those who are resentful of perceived external forces and who might therefore actively resist.

It was predicted that externals would prove least susceptible in the self-directed condition, since it puts stress on the role of their own abilities, in the efficacy of which they have relatively little faith. Ritchie and Phares (1969) found that attitude change was affected by the prestige of the communication source for externals but not for internals. Extrapolating to the hypnosis situation, this, too, suggests that externals would be least responsive in the self-directed condition since the source of influence is there defined as themselves, presumably a less prestigious source than a hypnotist.

It was predicted that internals would perform best in the self-directed condition since this emphasizes the very thing which they feel determines what happens to them -- their own efforts and abilities.

While it might seem logical to further postulate a poor performance

by internals in the other-directed condition, the locus of control literature suggests that this might be too simplistic. In a verbal conditioning study Strickland (1970) found that of those subjects who became aware of the reinforcement contingency, those who did not condition were considerably more internal than those who did. Although this suggested a general resistance to external manipulation on the part of internals, later studies led Rotter (1966) to conclude that

The individual who perceives that he does have control over what happens to him may conform or may go along with suggestions when he chooses to... However, if such suggestions or attempts at manipulation are not to his benefit or if he perceives them as subtle attempts to influence him without his awareness, he reacts resistively. (p. 24)

From this we might infer that susceptibility of internals in the other-directed condition may be best predicted by their hypnosis-specific beliefs, expectations, and desires.

It was hypothesized that the cooperative condition would be most effective overall (across locus of control) since its definition of hypnosis in terms of both external and internal forces should appeal to both externals and internals, each perhaps focusing on that aspect most congruent with personal locus of control beliefs.

It was further hypothesized that analyses using the locus of control in hypnosis would show the above effects even if those using generalized locus of control did not. Such a finding would be consistent with Lefcourt's (1976) contention that the locus of control construct may be most profitably applied when it is assessed with respect to specific contexts.

Considering the several studies cited earlier which showed sex of subject as a moderator between susceptibility scores and both attitudes

and locus of control, it is possible that the effects predicted above may appear for females but not for males, as would be reflected in a three-way interaction.

With regard to factor scores, it was hypothesized that scores on Factor I, which consists of challenge items, would be most sensitive to locus of control differences since such items would seem to make the issue of control most explicit.

Other predictions regarding the relationship between locus of control and susceptibility are, of course, possible. Lefcourt (1976) reviewed the research on cognitive differences between externals and internals and concluded that internals are generally more attentive to the environment (performing better, for example, in locating typographical errors). Basing his hypothesis upon these cognitive differences and on a "focused attention" explanation of hypnosis, Klemp (1969) predicted that internals would be more susceptible than externals (using HGSHS with no variation in pre-induction instructions).

The studies reviewed by Lefcourt, however, all dealt with attention to the external environment, and it might be that attention to internal phenomena (e.g., imagery, bodily feelings) are of equal or greater importance in hypnosis. Moreover, Lefcourt and Wine (1969) found that when the experiment was defined as focusing upon attention, externals recalled more unique items than internals did (and more than externals did when the situation was not so defined). Since Klemp's prediction was confirmed only for females and he related his findings to the female social role rather than to attentional factors, his hypothesis is not entertained here.

### Subjective Responses

While subjective scores were expected to be generally higher than objective scores (as found by Barber & Calverly, 1968), it was difficult to predict whether they would be affected in the same way as objective scores. Where resistance to suggestions is present, as might be expected for some internals in the other-directed condition or by externals who are resentful of perceived external control, subjects may feel some effect of the suggestion (hence pass items subjectively) without permitting overt expression (hence fail items objectively). But such resistance is only one possible reason for a difference between subjective and objective responses, and there seemed little basis for making specific predictions with respect to subjective scores.

Other variables were subsidiary to these main ones and included in part for heuristic purposes. Only one prediction was made regarding those. Since perceived involuntariness implies control by other than self, it was predicted that internals would experience fewer feelings of responses occurring involuntarily than externals and that perceived involuntariness would be greatest in the other-directed condition and least in the self-directed condition.

## METHOD

### Subjects

Two hundred and thirty-seven female and 147 male undergraduates at the University of New Hampshire participated in this study in partial fulfillment of a laboratory requirement in Introductory Psychology courses during the fall of 1977 and the spring of 1978. As required on sign-up sheets, no subjects had previously experienced hypnosis personally, though 28 percent had seen at least one hypnosis demonstration.

### Materials

#### Preliminary Questionnaires

Two questionnaires were administered in part I of the experiment. The first was the Rotter locus of control scale (see Appendix A) which was extended to include assessment of the personal feelings of acceptance or resentment of the choices made (see Appendix B). The second was a two-part questionnaire (see Appendix F) on hypnosis: thirteen questions measured general beliefs about hypnosis; sixteen questions measured personal expectations regarding the hypnotic experience. Twelve of these 29 questions directly concern subjects' perceptions of where control in hypnosis lies. Responses to these questions (those asterisked in Appendix F) formed the hypnosis-specific locus of control score.

#### Hypnotic Inductions

Induction texts were based upon HGSHS:A (Shor & Orne, 1962), which was modified to produce inductions which focused on different sources of control within hypnosis. The major aspects of each are reviewed briefly below; complete texts are included as Appendices C, D, and E.

1. Other-directed condition. This induction presented the hypnotist as the creator/controller of hypnotic phenomena and included frequent use of "I" (the hypnotist). Where "you" (the subject) was used, it was chiefly in the context of the subject being acted upon by the hypnotist.

2. Self-directed condition. This induction presented the subject as the creator/controller of hypnotic phenomena. There was frequent use of first-person phrasings (e.g., "I" -- the subject, "my arm"), with no use of "I" (the hypnotist) or "you".

3. Cooperative condition. The roles of both subject and hypnotist are stressed. The HGSHS:A text section on the importance of cooperation was retained. Second-person phrasings were frequent so that the hypnotist's role was not intrusive, yet the subject was still clearly one of two people involved, with "you" implying a speaker outside the subject.

The modifications of HGSHS:A for all three inductions fell into three categories: a) removal of statements dissonant with the specified source of control for a given induction condition; b) rewording of phrases so that "I/you" statements reflected the theme appropriate to each condition; c) addition of imagery to three items.

Apart from the above modifications, the inductions preserved the basic features of HGSHS:A. All twelve test items were included and in the standard order, repetitions and pauses remained intact, and the time allotted to various phases was generally quite similar. The total time required for the inductions, in the order listed above, were approximately 41, 42, and 43 minutes (compared to a total of approximately 42 minutes recommended time for HGSHS:A).

Inductions were recorded on tapes using the same male voice for all three conditions and were presented on a portable cassette tape recorder.

#### Dependent Measures

A printed booklet (see Appendix G) was used to obtain self-ratings from subjects on both their objective performance and subjective reactions on each of the twelve hypnotic test items. The objective section followed the format of the HGSHS:A response booklet, using the same criteria for success/failure on each item.

The subjective section obtained subjective scores by item-by-item questions on the feeling of experiencing the item (regardless of the success or failure of an objective performance) on a yes/no basis. In addition, item-by-item measures were obtained for vividness of imagery (very vivid, somewhat, not at all; post-hypnotic suggestion excluded), desire to experience the item (did want to, did not care, did not want to), resistance to suggestion (yes, no), and feeling of involuntariness (yes, no) for those items where there were overt reactions. Finally, four multiple choice questions dealt with perceived level of hypnotic depth (none, light, medium, deep), conformity of experience to expectations (not at all, somewhat, almost exact), perception of source of control of the hypnotic experience (taped instructions, own efforts and abilities, other), and feeling of dissociation (throughout, at some points, not at all).

#### Design

The basic design, illustrated in Figure 1, is a 3 x 2 x 2 completely crossed design with one manipulated variable, condition of hypnotic induction, at three levels (other-directed, cooperative, self-directed) and



		Condition of Induction		
		Other-directed	Cooperative	Self-directed
Internal Locus of Control	Female			
	Male			
External Locus of Control	Female			
	Male			

Figure 1. Research design.

two subject variables each at two levels: sex (male, female) and locus of control (internal, external). The primary dependent measures were total subject self-rating scores on objective performance and subjective scores for the twelve hypnotic test items.

### Procedure

#### Part I

Subjects were administered the Rotter locus of control scale, modified as described above to include an assessment of acceptance/resentment, and the questionnaire on beliefs and expectations about hypnosis. Part I was a one-hour session with subjects tested in groups of approximately 30 to 50 persons.

#### Part II

From one day to three weeks following Part I, subjects attended the two-hour hypnosis portion of the experiment. Part II consisted of a pre-induction communication, taped hypnotic induction, completion of the response booklet on hypnotic experiences, and debriefing.

Subjects were seated in groups of four to sixteen (mean group size = 13) in soft-cushioned chairs facing a cassette recorder on a table at the front of the room. A brief (approximately 5 minutes) pre-induction communication (see Appendices C,D,E) consonant with the subsequent induction was presented by the experimenter. The pre-induction communication included many of the comments suggested in HGSHS:A plus a description of hypnosis which emphasized control either by hypnotist, subject or both, depending upon induction condition. Also included was an explanation for the use of a taped induction and assurance that the experimenter was a trained hypnotist who would be present throughout the

session.

Following the pre-induction communication, one of three induction tapes was played on the cassette recorder. An attempt was made to balance the three conditions as much as possible across times and days. Thirty sessions were run, two of each induction condition on each of the five weekdays. Due to scheduling difficulties, a perfect balance between morning and afternoon sessions was not possible: ten sessions were conducted in the morning (9-11 a.m.) and twenty sessions were conducted in the afternoon (12-3, 1-3, 2-4, 3-5 p.m.).

Following the induction, subjects completed the questionnaire booklet on their objective performance and subjective experiences. The experiment concluded with a debriefing on the design and goals of the research and a question/answer period.

## RESULTS

Seventeen subjects did not completely fill out the post-hypnotic questionnaire. Their data were discarded and analyses were performed on data from the remaining 367 subjects (143 males and 224 females).

### Overview

The locus of control score for each subject was found by determining the total number of external locus of control statements chosen. Locus scores ranged from one to twenty-one with a mean of 11.5 (mean of females = 11.75; mean for males = 11.13). Subjects were classified as internal if their locus score was < 11 and as external if their score was > 12 (number of internals = 180; number of externals = 187). Locus of control was then used as a two-level variable along with induction condition and sex of subject in the initial analyses of variance.

Data were analyzed by unequal-n multivariate analysis of variance (MANOVA) and by separate univariate analyses using total objective and total subjective scores as dependent measures. Results of these tests are shown in Table 1. MANOVA and univariate analyses were also performed using the three factor scores for both objective and subjective measures. The factors used were those reported by Peters et al. (1974): Factor I consisted of challenge items -- arm immobilization, finger lock, arm rigidity, communication inhibition, eye catalepsy; Factor II consisted of direct suggestion items -- head falling, hand lowering, hands moving; Factor III consisted of cognitive items -- hallucination, post-hypnotic suggestion. Eye closure and post-hypnotic amnesia were not included in these factors. Results of analyses on factor scores are given in Table 2.

TABLE 1. Summary of results of MANOVA and univariate analyses of variance for total objective and subjective susceptibility scores.

	df	Objective		Subjective		MANOVA F
		MS	F	MS	F	
Induction Condition (C)	2	113.64	17.14***	55.77	7.25**	9.63 <sup>a***</sup>
Locus of Control (L)	1	3.45	.52	9.52	1.24	.64 <sup>b</sup>
Sex of Subject (S)	1	71.80	10.83***	83.32	10.83***	6.13 <sup>b**</sup>
C X L	2	3.55	.54	1.56	.20	.34 <sup>a</sup>
C X S	2	1.33	.20	2.96	.38	1.19 <sup>a</sup>
L X S	1	5.76	.87	12.52	1.63	.81 <sup>b</sup>
C X L X S	2	9.25	1.40	18.65	2.42	1.26 <sup>a</sup>
ERROR	355	6.63		7.69		

<sup>a</sup>df = 4,708

<sup>b</sup>df = 2,354.5

\*\*  
p < .01

\*\*\*  
p < .001

TABLE 2. Summary of results of MANOVA and univariate analyses of variance for objective and subjective factor scores.

Source	df	Objective			SUBJECTIVE			MANOVA
		I	II	III	I	II	III	
Induction Condition (C)	2	15.44***	3.21*	3.72*	8.15***	1.34	5.98**	3.17 <sup>a***</sup>
Locus of Control (L)	1	.70	.42	1.36	.64	.90	3.82	1.18 <sup>b</sup>
Sex of Subject (S)	1	12.06***	7.29**	.45	5.26*	11.39***	6.00*	3.91 <sup>b***</sup>
C X L	2	.44	.39	1.70	.35	.89	.12	1.22 <sup>a</sup>
C X S	2	.31	2.02	.46	1.27	.06	.28	1.21 <sup>a</sup>
L X S	1	2.90	.09	.02	1.44	.72	.36	.77 <sup>b</sup>
C X L X S	2	1.05	1.00	2.53	1.68	2.42	1.80	1.29 <sup>a</sup>
ERROR	355							

Note: To conserve space, only F-values are reported.

<sup>a</sup>df = 12,700

<sup>b</sup>df = 6,350.5

\*p < .05

\*\*p < .01

\*\*\*p < .001

Following analyses on total and factor scores, appropriate Newman-Keuls tests were applied. Additionally,  $\omega^2$  (omega squared) a measure of the strength of an effect in terms of the variance account for, was determined for each main effect (Tables 3 and 4).

To determine whether those classified as external might respond differentially to hypnosis according to how they feel about perceived external control, these 187 subjects were further classified as high or low in their rejection or resentment of such control on the basis of responses on the extension of the Rotter scale described earlier (see pp. 11 and Appendix B). Rejection scores were the percentage of chosen external locus statements marked as unacceptable:

$$\text{rejection score} = \frac{\text{number of chosen external locus statements marked unacceptable}}{\text{total number of external locus statements chosen}}$$

The mean rejection score was 57.86; subjects were classified as low if their scores was  $< 57$  and as high if their score was  $> 58$ . Analyses of variance using rejection level along with induction condition and sex of subjects were performed for external locus subjects with both objective and subjective total and factor scores as dependent measures. These results appear in Table 5.

The pre-hypnosis questionnaire on beliefs and expectations concerning hypnosis provided a basis for assessing the possible role of situation-specific locus of control in susceptibility. Twelve questions which referred to the hypnotist's control or to the subject's lack of control were selected (see asterisked questions in Appendix F), and a hypnotic locus (H-locus) score was obtained for each subject by determining the total number of these questions marked true (for beliefs) or

TABLE 3. Values of  $\omega^2$  as percentage of variance accounted for for main effects using objective and subjective total scores.

Main Effects	Dependent Measures	
	Objective	Subjective
Induction Condition	8	3
Locus of Control	0	0
Sex of Subject	2	2

Note: Zero values indicate that percentage of variance accounted for was  $< .5\%$  (a proportion of  $.005$ ).



TABLE 4. Values of  $\omega^2$  as percentage of variance accounted for for main effects using objective and subjective factor scores.

Main Effects	Objective Factors			Subjective Factors		
	I	II	III	I	II	III
Induction Condition	7	1	1	4	0	3
Locus of Control	0	0	0	0	0	1
Sex of Subjects	0	2	0	1	3	1

Note: Zero values indicate that percentage of variance accounted for was  $< .5\%$  (a proportion of .005).

TABLE 5. Summary of results of analyses of variance on induction condition, rejection level, and sex of subject for objective and subjective total and factor scores, on 187 external locus of control subjects.

Source	df	Total	Objective			Total	Subjective		
			I	II	III		I	II	III
Induction Condition (C)	2	7.79***	5.69**	.23	4.75**	2.45	2.28	1.46	2.64
Rejection Level (R)	1	1.60	.29	.00	2.19	.14	.98	.26	1.30
Sex of Subject (S)	1	10.31**	14.28***	3.92*	.08	10.14**	6.22*	8.51**	3.46
C X R	2	.07	.22	.06	.82	.59	.03	.56	3.04
C X S	2	1.30	.42	2.36	2.10	.68	.30	1.50	1.34
R X S	1	.08	.00	1.06	.07	.00	.18	.10	1.99
C X R X S	2	.15	.13	1.38	2.59	.26	.11	1.59	1.57
ERROR	175								

Note: To conserve space, only F- values are reported.

\* $p < .05$

\*\* $p < .01$

\*\*\* $p < .001$

yes (for expectations). Subjects were classified as H-internal if this score was  $< 5$  and as H-external if this score was  $> 6$ . Analyses of variance were then performed on objective and subjective total and factor scores using H-locus, induction condition, and sex of subjects as independent variables. These results are given in Table 6.

Though objective and subjective total and factor scores comprised the main dependent measures in this study, subsidiary measures were of heuristic interest and analyses were also performed on these. MANOVA and univariate analyses of variance were performed using induction condition, locus of control, and sex of subject for item-by-item measures (vividness of imagery, desire to have the experience, resistance to suggestion, and feeling of involuntariness) and for global measures of perceived depth, conformity of experiences to expectations, perception of hypnotic control source, and extent of dissociation. Results of these analyses appear in Tables 7 and 8. Newman-Keuls tests were performed for the differences between induction conditions;  $\omega^2$  values were determined for each variable (Table 9). Similar analyses were performed on these measures using hypnotic-locus along with induction condition and sex of subject. Item-by-item measures revealed no effects involving hypnotic-locus and otherwise duplicated the findings shown in Table 7. Table 10 shows the results of analyses on global scores, where there were significant effects involving hypnotic-locus.

The final analyses dealt with pre-hypnosis beliefs and expectations. Since significant sex differences appeared in analyses of variance, contingency tables were prepared and chi-square tests performed on the relationship between sex of subject and pre-hypnosis beliefs and expect-

TABLE 6. Summary of results of analyses of variance for induction condition, hypnotic-locus of control and sex of subject on objective and subjective total and factor scores.

Source	df	Total	Objective			Subjective			
			I	II	III	Total	I	II	III
Induction Condition (C)	2	18.49***	16.74***	3.52*	4.10*	7.97***	8.70***	1.55	6.81***
H-Locus (H)	1	2.08	.27	.52	5.21*	.54	.03	.24	2.78
Sex (S)	1	9.54**	11.42***	7.44**	.09	9.84**	4.98*	10.67***	4.50*
C X H	2	.29	.39	3.84*	1.81	.63	.44	1.42	.13
C X S	2	.23	.50	2.99	.55	.28	1.21	.28	.26
H X S	1	.50	.36	.01	1.72	.18	.17	.02	2.66
C X H X S	2	1.49	1.80	4.67**	.20	.99	.41	.66	.31
ERROR	355								

Note: To conserve space, only F-values are reported.

\* $p < .05$

\*\* $p < .01$

\*\*\* $p < .001$

TABLE 7. Summary of results of MANOVA and univariate analyses of variance on induction condition, locus of control, and sex of subject for four item-by-item measures of subjective experience.

Source	df	Vividness of Imagery	Desire	Resistance	Involuntariness	MANOVA F
Induction Condition (C)	2	4.80**	2.59	.28	7.44***	2.76**
Locus of Control (L)	1	2.82	.00	1.58	1.00	1.14
Sex of Subject (S)	1	7.93**	2.05	.09	7.82**	3.08*
C X L	2	.04	3.96*	.26	.37	1.22
C X S	2	.65	1.61	1.83	.15	.92
L X S	1	.02	2.72	1.03	.10	.93
C X L X S	2	3.00	.05	2.55	1.75	1.45
ERROR	355					

Note: To conserve space, only F-values are reported.

\* $p < .05$

\*\* $p < .01$

\*\*\* $p < .001$

TABLE 8. Summary of results of MANOVA and univariate analyses of variance on induction condition, locus of control, and sex of subject for four global measures of subjective experience.

Source	df	Perceived Depth	Conformity to Expectation	Perceived Control Source	Extent of Dissociation	MANOVA F
Induction Condition (C)	2	4.65**	.59	6.17**	1.38	2.87**
Locus of Control (L)	1	.24	2.12	2.34	1.86	1.58
Sex of Subject (S)	1	9.81**	.04	2.97	.44	3.58**
C X L	2	.66	.05	1.07	1.91	.85
C X S	2	.32	2.00	1.22	.29	.97
L X S	1	.17	.66	1.70	2.38	1.35
C X L X S	2	1.20	1.08	.28	.71	.80
ERROR	355					

Note: To conserve space, only F-values are reported.

\*\* $p < .01$

TABLE 9. Values of  $\omega^2$  as percentages of variance accounted for by main effects using item-by-item and global subjective experiences scores.

	Item-by-Item Measures			
	Vividness of Imagery	Desire to have Experience	Resistance to Suggestion	Involuntariness
INDUCTION CONDITION	2	0	0	3
LOCUS OF CONTROL	0	0	0	0
SEX OF SUBJECT	2	0	0	2

	Global Measures			
	Perceived Depth	Conformity to Expectation	Source of Hypnotic Control	Extent of Dissociation
Induction Condition	2	0	3	0
Locus of Control	0	0	0	0
Sex of Subject	2	0	1	0

Note: Zero values indicate that percentage of variance accounted for was  $\leq .5\%$ .

TABLE 10. Summary of results of hierarchical analyses of variance on induction condition, hypnotic-locus of control, and sex of subject for four global measures of subjective experience

Source	df	Perceived depth	Conformity to Expectation	Perceived Control Source	Extent of Dissociation
Induction Condition (C)	2	5.08**	.45	5.83**	1.67
Hypnotic-locus (L)	1	7.44**	2.29	.02	.52
Sex of Subject (S)	1	7.96**	.01	3.35	.72
C X H	2	.66	.00	3.05*	1.97
C X S	2	.21	1.45	.76	.37
H X S	1	.72	1.07	.01	.01
C X H X S	2	3.81	1.19	2.14	1.51
ERROR	355				

Note: To conserve space, only F-values are reported.

\*p <.05

\*\*p <.01



tations. Percentages of males and females responding "true" or "yes" to each of these questions are shown in Table 11.

### Analyses on Objective and Subjective Scores

#### Condition by Locus by Sex

Total scores. Both MANOVA and univariate analyses of variance (Table 1) showed significant main effects for induction condition ( $p < .001$ ) and for sex of subject ( $p < .01$  in MANOVA;  $p < .001$  in univariate analyses). There were no significant effects for locus of control or any interactions. Table 12 shows the mean objective and subjective total scores for induction condition and for sex of subjects. As this table shows, females scored higher than males on both measures. As expected, total subjective scores are higher than total objective scores.

Values of  $\omega^2$  (Table 3) indicated that induction condition accounted for 8% of the variance in total objective scores and for 3% of the variance in subjective scores. Sex of subject accounted for 2% of the variance in both measures, while locus of control accounted for less than .5% of the variance.

Newman-Keuls tests applied to test the differences between means for induction conditions revealed no significant difference between the cooperative and self-directed conditions, but both yielded significantly higher scores, both objective and subjective, than did the other-directed condition ( $p < .01$ ).

Factor scores. MANOVA (Table 2) again showed significant main effects for induction condition and for sex of subject ( $p < .001$ ) with no significant effect for locus of control or any interactions. Consideration of the univariate analyses showed that these differences were

TABLE 11. Percentages of males and females responding "true" or "yes" to 29 pre-hypnosis questions on beliefs and expectations concerning hypnosis.

A. Beliefs	<u>Females</u>	<u>Males</u>	<u>Overall</u>
1. Hypnosis is a very mysterious thing.	69	64	67
2. It is easy for most people to be hypnotized	42	43	42
3. The hypnotist achieves results by exerting his power over the subject.	32	29	31
4. Many people can be hypnotized against their will.	12	13	12
*5. Hypnosis is often a fearful experience.	22	13	18
6. Experiencing hypnosis is a skill that can be developed with practice.	61	71	65
**7. People who are hypnotized cannot "awaken" by themselves.	58	43	52
**8. People who are less intelligent are more easily hypnotized than people who are more intelligent.	9	20	13
9. While hypnotized, people cannot resist the suggestions of the hypnotist.	51	44	48
10. Under hypnosis, most people lose consciousness and are not aware of of what they are doing.	68	64	66
11. While hypnotized, the subject is under the control of the hypnotist.	83	77	81
12. Most people cannot afterwards remember what they did while hypnotized.	83	76	80
13. Whether a person will be able to experience hypnosis or not depends more upon the hypnotist than the subject.	14	20	16

TABLE 11 (cont.)

B. Expectations	<u>Females</u>	<u>Males</u>	<u>Overall</u>
1. I believe that I would find it easy to be hypnotized.	49	46	48
2. I would be a good hypnotic subject.	60	55	58
3. I could "awaken" whenever I wanted to.	27	32	29
**4. It would be difficult for me to resist being hypnotized.	30	16	24
**5. Hypnosis would be unlike any other experience I have ever had.	89	78	85
6. It would be difficult for me to resist suggestions while I was hypnotized.	70	64	68
7. While hypnotized, things would seem unreal.	45	41	43
***8. While hypnotized, things would happen to me automatically.	65	46	58
*9. While hypnotized, I would be under the control of the hypnotist.	80	68	76
10. I would not be able to move parts of my body.	19	24	21
11. I would experience hallucinations.	13	15	14
12. I would not afterward remember anything that happened while I was hypnotized.	62	61	62
**13. Hypnosis would be a frightening experience for me.	16	6	12
***14. Whether or not I would experience hypnosis would depend more upon the hypnotist's skills than upon my own abilities.	29	49	36
15. On the whole, hypnosis would be a pleasureable experience for me.	83	90	86
16. I would like to be hypnotized.	87	90	88

TABLE 11 (cont.).

Note: Questions on which there were significant sex differences in responses are asterisked according to the level of statistical significance. Phi coefficients for significant differences ranged from .12 to .21.

TABLE 12. Means for induction conditions and sex of subject on objective and subjective total susceptibility scores.

Induction Condition	Susceptibility Measure	
	<u>Objective</u>	<u>Subjective</u>
Other-directed (N=123)	5.36	7.29
Cooperative (N=123)	6.76	8.54
Self-directed (N=121)	7.30	8.50
Sex of Subject		
Female (N=224)	6.85	8.50
Male (N=143)	5.87	7.50

significant for all but two measures: sex of subject did not affect objective scores ( $p < .50$ ) on Factor III (cognitive items); induction condition did not affect subjective scores ( $p < .26$ ) on Factor II (direct suggestion items). Table 13 shows the mean scores on each factor for induction condition and for sex of subject; again females consistently scored higher than males.

Values of  $\omega^2$  (Table 4) indicated that induction condition accounted for the most variance in Factor I: 7% in objective Factor I (which correlated .87 with total objective score) and 4% in subjective Factor I (which correlated .87 with total subjective score). Induction condition accounted for 1% and 0% ( $< .5\%$ ) of the variance in objective and subjective Factor II, respectively, and for 1% and 3% of the variance in objective and subjective Factor III, respectively. Locus of control accounted for less than .5% of the variance in any factor except subjective Factor III, where it accounted for only 1% of the variance. Sex of subject accounted for less than .5% of the variance in objective Factors I and III, for 2% in objective Factor II, and for 1%, 3%, and 1%, respectively, in subjective Factors I, II, and III.

Newman-Keuls tests on induction conditions revealed that for Factor I, both objective and subjective, the cooperative and self-directed conditions did not differ significantly, but both yielded significantly higher scores ( $p < .01$ ) than did the other-directed condition. For Factor II, the cooperative condition was significantly more effective ( $p < .05$ ) than the other-directed condition on the objective measure; no other comparisons were significant. For Factor III, the cooperative condition produced significantly higher ( $p < .05$ )

TABLE 13. Means for induction conditions and for sex of subject on objective and subjective factor scores.

	Susceptibility Factors					
	Objective			Subjective		
	I	II	III	I	II	III
<b>Induction Condition</b>						
Other-directed	2.01	2.17	.26	2.80	2.65	.46
Cooperative	2.82	2.41	.47	3.55	2.78	.77
Self-directed	3.18	2.43	.39	3.59	2.74	.74
<b>Sex of Subject</b>						
Female	2.92	2.44	.39	3.48	2.80	.73
Male	2.27	2.17	.35	3.05	2.59	.53

objective scores than the other-directed condition; both cooperative and self-directed conditions were significantly ( $p < .01$ ) more effective than the other-directed condition on subjective scores. There were no other significant differences for Factor III.

#### Condition by Rejection by Sex

Analyses of variance for external locus of control subjects using rejection level (low vs. high rejection of perceived external control) as a variable (Table 5) showed no role of this variable in hypnotic susceptibility scores. There were some differences in the pattern of results from those shown in Tables 1 and 2 (e.g., induction condition was not significant for subjective scores), but the smaller N (187 vs. 367) made this analysis less powerful.

#### Condition by Hypnotic-Locus by Sex

Of interest in the hierarchical analyses of variance using H-locus as a variable (Table 6) are those effects involving hypnotic-locus (since results involving only induction condition and sex of subject merely duplicate those found in the condition by locus by sex analyses). The only significant main effect for H-locus was on objective Factor III ( $p < .05$ ). In interactions, there was a significant effect ( $p < .05$ ) for condition by H-locus on objective Factor II and a significant ( $p < .01$ ) three-way interaction on objective Factor II. Since the significance of these interactions was not protected by MANOVA F's (MANOVA was not readily performed using H-locus as a variable), confidence in them is reduced, but they are reported here as suggesting the possible future value of closer scrutiny of a hypnosis-specific locus of control measure.

As an additional way of looking at the relationship between H-locus



and objective and subjective total and factor scores, Pearson product moment correlations were obtained between H-locus scores (on a 0 to 12 scale) and these measures for each sex and for each induction condition. Only one of these correlations was significant ( $r = .22$ ,  $p < .02$ ), that between H-locus score and Objective Factor III in the self-directed condition. Given the number of correlations computed, it is not unlikely that one significant correlation may have occurred merely by chance.

#### Analyses of Item-by-Item Subjective Experiences

##### Condition by Locus by Sex

MANOVA and univariate analyses (Table 7) revealed significant main effects for induction condition and for sex of subject on vividness of imagery and feelings of involuntariness. There was only one significant interaction ( $p < .05$ ), that for condition by locus on the desire to experience items, but the MANOVA F for this interaction was not significant, suggesting that it was a chance finding.

On both vividness and involuntariness measures, females scored significantly higher than males. Newman-Keuls tests on significant induction condition effects showed that self-directed and cooperative conditions did not differ with respect to either vividness of imagery or involuntariness. On vividness of imagery, the other-directed condition yielded significantly lower scores than either the cooperative ( $p < .05$ ) or self-directed ( $p < .01$ ) conditions; on involuntariness, the other-directed condition yielded significantly lower scores than either of the other two conditions ( $p < .01$ ).

Tests of  $\omega^2$  (Table 9) revealed that induction condition accounted for variance only in vividness of imagery (2%) and in feelings of invol-

untariness (3%); sex of subject accounted for 2% of the variance in both these measures. Locus of control did not account for variance in any item-by-item measure.

#### Condition by Hypnotic-Locus by Sex

Analyses of variance using hypnotic-locus of control revealed no effects involving H-locus on any item-by-item measure.

#### Analyses on Global Subjective Experiences

##### Condition by Locus by Sex

MANOVA (Table 8) again showed significant effects ( $p < .01$ ) for induction condition and for sex of subject. Univariate analyses revealed that induction condition affected subjects' estimates of hypnotic depth ( $p < .01$ ) and perceptions of the source of hypnotic control ( $p < .01$ ); sex of subject was related ( $p < .01$ ) to estimates of hypnotic depth, with females reporting significantly greater depth than males.

Tests of  $\omega^2$  (Table 9) indicated that induction condition accounted for variance only in perceived depth (2%) and perceived source of hypnotic control (3%); locus of control did not account for variance on any global measure; sex of subject accounted for variance only in perceived depth (2%) and perceived source of hypnotic control (1%).

Newman-Keuls tests on differences between induction conditions revealed that cooperative and self-directed conditions did not differ from one another on either perceived depth of perception or hypnotic control. The other-directed condition yielded significantly lower subjective depth estimates than either the cooperative ( $p < .01$ ) or the self-directed ( $p < .05$ ) condition. Subjects were more likely to attribute their experiences to the taped induction in the other-directed

condition than in either the cooperative ( $p < .01$ ) or the self-directed conditions ( $p < .05$ ), in which conditions they were more likely to attribute their experiences to their own efforts or to some combination of self and tape.

#### Condition by Hypnotic Locus by Sex

Analyses of variance using H-locus (Table 10) showed, of course, the same effects for induction condition and sex of subject as were reported above. There were two significant effects involving H-locus: a main effect ( $p < .01$ ) for the measure of perceived depth (those classified as H-external reporting significantly greater hypnotic depth), and a condition by H-locus interaction ( $p < .05$ ) for perception of hypnotic control source. Again, these significance values are not protected by MANOVA F's and must be viewed with caution. Pearson product moment correlations between H-locus scores and the measure of source of hypnotic control were nonsignificant within each induction condition (other-direct:  $r = -.10$ ,  $p < .26$ ; cooperative:  $r = +.06$ ,  $p < .53$ ; self-directed:  $r = -.09$ ,  $p < .31$ ).

#### Analyses Using Beliefs and Expectations

Data on beliefs and expectations were collected chiefly for comparison with other research and as a guide to future research. Sex differences revealed by  $\chi^2$  tests are shown in Table 11. Additionally, step-wise multiple regression analyses were performed for all subjects and for males and females separately using the thirteen beliefs questions and using the sixteen expectation questions to determine their predictive power for item-by-item susceptibility measures. For completeness, the results of those are shown in Table 14. It must be noted, however,

TABLE 14. Summary of results of step-wise multiple regression analyses using pre-hypnosis beliefs and pre-hypnosis expectations as predictors of item-by-item susceptibility measures.

Criterion	Beliefs as Predictors			Expectations as Predictors		
	Female	Male	Overall	Female	Male	Overall
<b>Objective Scores</b>						
Total	.27(7)	.40(16)	.19(4)	.38(14)	.36(13)	.32(10)
Factor I	.28(8)	.37(14)	.17(3)	.37(14)	.33(11)	.28(8)
Factor II	.26(7)	.34(12)	.26(6)	.29(9)	.31(10)	.24(6)
Factor III	.28(8)	.31(10)	.19(4)	.29(8)	.41(17)	.24(6)
<b>Subjective Scores</b>						
Total	.26(7)	.30(9)	.18(3)	.35(12)	.40(16)	.30(9)
Factor I	.28(8)	.34(12)	.19(4)	.33(11)	.35(12)	.27(7)
Factor II	.21(4)	.20(4)	.16(3)	.27(7)	.36(13)	.19(4)
Factor III	.24(6)	.24(6)	.15(2)	.32(10)	.39(15)	.38(14)
<b>Subjective Experiences</b>						
Vividness	.21(4)	.27(7)	.18(3)	.32(10)	.43(18)	.30(9)
Desire	.22(5)	.29(8)	.21(4)	.24(6)	.42(18)	.22(5)
Resistance	.23(5)	.33(11)	.14(2)	.24(6)	.25(6)	.20(4)
Involuntariness	.25(6)	.37(14)	.21(4)	.33(11)	.34(12)	.26(7)

Note: First number given is R (multiple correlation coefficient; in parentheses is R<sup>2</sup> (variance accounted for in percentage form). All R's are significant at .01 except that for males' subjective Factor II using beliefs as predictors ( $p < .05$ ).

that these multiple regression analyses maximize prediction by selecting all non-overlapping variances regardless of whether their contribution to the equation is chance or not.

Four patterns emerged which appeared to have potential for future study: 1) for beliefs and for expectations, higher multiple correlations were obtained by considering males and females separately than by using all subjects without regard to sex; 2) for females, expectations were consistently more predictive than beliefs, a pattern which did not hold for males; 3) using beliefs scores, greater predictability was obtained for males than for females; 4) using belief scores, objective criteria appeared more predictable than subjective criteria. Again, though, these patterns must be viewed with considerable caution and as purely heuristic at this point.

## DISCUSSION

Since results of this study were chiefly in the form of main effects rather than interactions, discussion will focus upon each major variable in turn.

### Locus of Control

Analyses of variance showed no main effect for locus of control as measured by Rotter's scale on any of the dependent measures obtained. The only suggestions of a role for this variable in hypnotic susceptibility were two significant ( $p < .05$ ), but low, negative correlations between locus score and objective Factor III ( $r = -.10$ ) and subjective Factor III ( $r = -.13$ ) which revealed a slight tendency for internals to perform better on cognitive items. The hypothesis that externals' hypnotic performance might depend upon how they feel about perceived external control was tested by obtaining rejection scores but was not confirmed. Finally, the hypothesized interaction between locus of control and method of hypnotic induction was also not confirmed.

There were a number of ways in which this experiment provided good opportunity for detecting an effect of locus of control. Given the large number of subjects, statistical power was great, as evidenced by the detection of effects which accounted for only one or two percent of the variance (per  $\omega^2$  tests). The variety of dependent measures used permitted detection of effects in terms of both global and factor scores and in terms of both objective performance and subjective experiences. Yet locus of control was unrelated even to challenge items (Factor I) and feelings of involuntariness, measures which would seem logically more relevant to locus of control than the global and objective measures assessed by previous researchers. The possible interaction

with method of induction was also given a good chance of surfacing, for this variable was manipulated more strongly here than in previous studies which varied only pre-induction comments without providing inductions consonant with them.

Given this detecting power, it would appear that locus of control is not a factor of any importance in hypnotic susceptibility. Nevertheless, the concept of control clearly has a place within hypnotic theory. In Shor's (1962, 1977) theory, one of the three dimensions of hypnosis which he describes is that of nonconscious role-taking involvement, identified by subjects' reports of compulsive, involuntary responding, and any hypnotist does in fact encounter such reports quite often. Why, then, does locus of control as measured by the Rotter scale fail to relate to susceptibility? Are we yet justified in abandoning investigation of it in light of its poor showing so far?

The following sections attempt to answer these questions in several ways. First, possible future directions using the Rotter locus of control scale are suggested; secondly, consideration is given to the use of a hypnosis-specific locus of control measure; thirdly, different approaches to the concept of control are discussed; finally, assuming concepts of control relevant to normal waking consciousness do not in fact relate to the concept of control within hypnosis, a possible resolution is proposed.

#### Further Studies Using the Rotter Scale

Before hypnosis research involving the Rotter scale is abandoned, there are several approaches which might be adopted to give it an even fuller test than was given here.

1. It has been traditional within the locus of control literature

to identify subjects as internal or external on a relative basis; that is, subjects are more or less internal or more or less external in comparison to others in the group tested. Since there is no ready basis for absolute classification, this approach seems reasonable, but does require a caveat.

If the subject population has a restricted range (e.g., Rotter, 1966, reported Peace Corps trainees more internal, and with less variability, than subjects in other samples), a median split into internals and externals may actually be a split into moderate internals and extreme internals and so may well reveal no internal-external differences in whatever the criterion measure is. Indeed, many subjects who would have been classified as externals in a median split 15 years ago would be classified as internals today since, as Rotter (1971) reports, there has been a general shift toward externality. A large group of college students tested in the early sixties (Rotter, 1966) had a mean score of about 8, while by 1971 (Rotter, 1971) the mean was about 11, approximately what was obtained from the subjects used in this experiment.

With no absolute criteria for classification, it may be prudent to use only subjects scoring at the extremes of the Rotter scale or, alternatively, to split subjects into three groups rather than two so that a middle group separates the two extremes. This was not done here because rough graphs of data showed the same general trends using either a two-way or a three-way classification on locus of control, and a two-way split provided greater statistical power which, it was felt, was a reasonable trade-off for any "blurring" of internal-external that a two-way split might create. Nevertheless, the decision as to the number of



locus of control levels to be used in a given study should be made with attention to the points raised above.

2. Just as subjects should be split into groups as distinct as possible with respect to locus of control, so too should the levels of any variable with which an interaction with locus is hypothesized be as distinct as possible. While the manipulation of induction conditions was stronger here than in previous studies, it could be made more so. Does a taped group induction, for example, emphasize other-directedness as forcefully as a live individual induction would? Maximizing the differences among conditions in this way might mean introducing some confoundings which would have to be dealt with eventually, but could provide a greater likelihood of detecting interactions. Additional points concerning the inductions used here are made in that section of the discussion.

3. External's acceptance/resentment of perceived external control showed no effect in this study. It is quite possible, however, that a more sensitive measure of resentment or dissatisfaction with perceived control source might yield other results. Gardner (1976) proposed a broader approach, suggesting the determination of whether subjects' locus of control beliefs were ego-syntonic or ego-dystonic by the use of a self-ideal Q-sort, for example. In this way one would obtain answers to the questions "how much control does a person believe he exerts over the events in his life" and "how much control does he actually wish to have." One could then identify externals who were satisfied or dissatisfied with the source of control as they see it and also identify internals who were satisfied or dissatisfied. This approach has not yet been tried, but merits consideration.

4. Susceptibility to hypnosis was measured here as it commonly is in studies addressing personality correlates, by scores obtained following a single hypnotic induction with subjects who have never directly experienced hypnosis before. Although a wider variety of measures was used than is typically the case, it is still a study of initial susceptibility, and while there is a good relationship between initial susceptibility scores and subsequent hypnotic performance, the correlation is certainly not perfect and may be even less strong if, as Diamond (1977) suggests, subjects are given systematic training to enable them to reach a stable plateau.

Shor et al. (1966) have proposed using plateau hypnotizability scores in the search for personality correlates, and it seems a valuable suggestion. We are, after all, looking for a relationship between hypnotic depth and relatively stable personality characteristics, and it is not unreasonable to use stable plateau depth as the criterion.

If subjects are divided on the basis of some personality factor, within each group there is still considerable variability in attitudes toward hypnosis -- preconceptions of what hypnosis is like, desire to experience hypnosis, and so on. These attitude factors Sheehan (1971) calls "strong and powerful determinants of the nature of (subjects') hypnotic response". The great within-group variability in a factor related to responsivity provides "noise" within which it may be difficult to find the "signal" representing the effect of more stable personality differences.

There is evidence, however, that these attitude differences decrease with exposure to hypnosis. Zamansky and Brightbill (1965),

for example, found that both initially susceptible and nonsusceptible subjects evaluated hypnosis more positively ( $p < .05$ ) following hypnosis than before, with greater change for nonsusceptible subjects. Melei and Hilgard (1964) reported more favorable attitudes in subjects with previous hypnotic experience than in subjects without such experience (though a subject self-selection factor might be operating whereby subjects with more favorable attitudes to begin with were more likely to have tried hypnosis). In the present study, many subjects spontaneously reported in laboratory write-ups that they would like to try hypnosis again, including a number of subjects who described themselves as skeptical or anxious prior to the experiment. No subject expressed a decrease in the desire to experience hypnosis. There appears, then, to be a trend toward convergence of attitudes with exposure to hypnosis. There is no reason to suppose, however, that hypnotic experience in a non-therapeutic situation produces any significant change in stable personality characteristics. Thus, using plateau scores, there may be reduced variability in attitudes as a result of the repeated exposure to hypnosis, and personality correlates have a greater chance of appearing.

5. White (1937) long ago described two types of hypnotic trance, passive and active, relating each to different personality characteristics. Subjects entering an active trance, for example, were high on need for deference while subjects entering a passive trance were low on need for deference. But active and passive subjects achieved equivalent hypnotic depth, so that attempts to determine a relationship between need for deference and susceptibility using depth scores would be of no avail.

These findings should lead us to reconsider the definition of susceptibility most appropriate to the determination of personality correlates. Most researchers have focused on relating personality traits to quantitative differences in susceptibility, but it may be that qualitative differences are of equal or greater importance. There are some recent trends in this direction. Hilgard (1970) has carried out an extensive program of research which led her to conclude that there are numerous pathways into hypnosis. While she does not necessarily propose different end-states, the concept is similar to White's since here, too, many different personality traits can yield equally great hypnotic depth.

Shor's (1977) approach is also along this line in that subjects may achieve equally high objective performance scores yet differ on the underlying dimensions. A subject might, for example, objectively pass a mosquito hallucination item either because he actually believed that there was a mosquito there (suggesting depth on the trance dimension) or because he felt an overpowering need to act as if it were there (suggesting depth on the dimension of role-taking involvement) even if he knew there was really no mosquito. Here again, there might well be a personality difference between such subjects but it could only be found assessing the nature of their hypnotic states and not overall depth as currently measured.

It is suggested, then, that locus of control may have a role in the qualitative nature of susceptibility even if it does not relate to quantitative depth, a possibility which has not yet been tested.

6. A final step that future hypnosis research using Rotter's locus of control scale might take is suggested by the results of a

factor analysis of that scale by Collins (1974). Collins identified four components of the Rotter scale, and it is possible that one or more of these factors may relate to hypnotic susceptibility even if global scores do not. Collins has labeled these factors as follows: the difficult-easy world, the just-unjust world, the predictable-unpredictable world, the politically responsive-unresponsive world. If Collins' descriptions of the factors are appropriate, though, the outlook is discouraging since none of these appear on the surface to be logically very related to susceptibility, though that does not preclude the possibility.

There are, of course, other locus of control scales (e.g., Nowicki & Strickland, 1973) which may tap the control concept in ways the Rotter scale does not and so far none of these has been used in hypnosis research.

#### Hypnosis-specific Locus of Control

If generalized locus of control fails to relate to a criterion, it is possible, as Lefcourt (1976) suggests, that a situationally-specific measure may. Only one previous study (Diamond et al., 1974) attempted to relate a hypnotic-locus of control measure (a 5-item questionnaire) with susceptibility, obtaining a nonsignificant correlation ( $r = -.12$ ). In the present study, the 12-item H-locus scale provided for a greater range of H-locus scores and presumably finer distinctions, but still yielded a nonsignificant correlation ( $r = .06$ ,  $p < .24$ ) with objective total scores (equivalent to the criterion used by Diamond et al. ).

Some effects did appear in analyses of variance: a main effect on objective Factor III ( $p < .05$ ) and on subjective estimates of depth

on later susceptibility instead of initial susceptibility.

Secondly, if the H-locus scale were valid, one would expect some communality between H-locus and generalized locus of control, but the correlation between H-locus scores and Rotter scores was not significant ( $r = .08$ ,  $p < .11$ ). (Diamond et al., 1974, did not report on the correlation between their scale and Rotter scores.)

Given these points, the general conclusions are that a more valid measure of H-locus needs to be developed and its role should then be tested in other than initial susceptibility.

#### Approaches to the Concept of Control

The logic behind the use of Rotter's scale in this study was that since control is of both practical and theoretical importance in hypnosis, a scale which assesses locus of control should be relevant to susceptibility. But it may be necessary to examine various meanings of the concept of control in order to determine which is really most appropriate in hypnosis research.

We have been assuming, first of all, that perceptions of source of control can be categorized, at least roughly, into internal and external, that for any given event, as individual perceives (rightly or wrongly) that its chief cause was either some personal act or disposition or some environmental agent or force. But this categorization ignores the possibility that we may be unable to attribute an event to any cause. In such a case we usually do, it is true, assume that the cause is not internal or else we would probably recognize it (an assumption that may be true or not). In one sense, then, failure to attribute means attribution, by default, to some unknown external

( $p < .01$ ); condition by H-locus interactions on objective Factor II ( $p < .05$ ) and on perceived control source ( $p < .05$ ); a three-way interaction on objective Factor III ( $p < .01$ ).

While somewhat suggestive of the potential of considering H-locus in future studies, these results must be viewed with caution for two reasons. First of all, significance levels were not protected by MANOVA F's and so may well be due to chance given the number of dependent measures tested. Secondly, one does not have a valid measure of H-locus merely on the basis of face validity. The twelve items in the H-locus scale used here were selected solely on the basis of face validity in what was really only a pilot attempt to develop an H-locus scale. Two things suggest that this initial attempt was not completely successful.

First, if the scale really measured subjects' perceptions of control in hypnosis, one might expect to find a main effect for H-locus on the post-hypnotic control source measure. Of course, the H-locus measure does consist of preconceptions about hypnosis, attitudes which are presumably modifiable. To the extent that they are modified by experience with hypnosis, the relationship between pre-hypnosis H-locus and post-hypnosis perceptions of control source would be attenuated. Initial susceptibility might be in part a function of H-locus, if validly measured, but by the time the hypnotic experience draws to a close, H-locus beliefs may have changed and it is the modified H-locus which determines the response to the perception of control source questions. The H-locus by condition interaction on the perceived control source question suggests that something like this may be occurring. If so, it might be desirable to provide subjects with hypnotic experience prior to assessing H-locus and to test its role source(s)

or to some pseudocausative force such as luck, chance, or fate. But is this view of external causation by default really equivalent to the perception of a specific external causative agent?

Collins (1974) argued that Rotter's locus of control scale confounds two dimensions, a dimension of predictability/unpredictability and a dimension of internal/external control. And, indeed, his factor analysis of Rotter's scale yielded a predictability/unpredictability factor which was relatively orthogonal to the other three factors extracted. Belief in an unpredictable world may be viewed as failure to assign causation. Including those who view the world as basically unpredictable in the internal-external categories may be inappropriate. It might be better either to disregard these persons or to include them as a separate group so that subjects are divided into belief of external control, belief in unknown (or no) control, and belief in internal control.

Considering the meaning of external locus of control, one may ask the following question: If a person attributes an event to an external source, is this equivalent to a belief in his inability to affect that event himself? Collins (1974) raises this point in noting that one who chooses the external belief statement "Sometimes I can't understand how teachers arrive at the grades they give," might still believe that he could affect that grade by arguing with the teacher about it. If so, one might just as readily classify him as internal. Thus, though one may believe that an external agent is the direct or immediate cause of an event, one may still be internal in believing that he can have an indirect effect on the event by acting on the perceived control agent.

A more



rigorous assessment of locus of control might include an indirect locus measure for externals. Whether this would be important in relating perceived locus of control to hypnotic susceptibility is difficult to judge, but finer discriminations within either locus category might be desirable.

The above points suggest ways in which the concept of control can be expanded or refined within the context of Rotter's scale, and so far we have been dealing only with perceived control rather than actual control. One may believe that he controls certain events without this actually being the case. Conversely, one may incorrectly attribute causation to external forces. This latter incongruence between expressed belief and actuality may, for example, be a defensive measure (Austrin & Pereira, 1978), a means of avoiding responsibility for failures.

The question here is whether we should be dealing with perceived control source or actual control source. Would the latter be the control variable most relevant to hypnotic performance? The question can only be answered empirically, but it is important to be very clear on the point that the Rotter scale does not measure control per se, but only the perception of it. The relevance of a control concept should not be denied merely because perceived locus of control scores do not predict hypnotizability.

Since it still seems intuitively reasonable that perceived locus should be important, especially, perhaps, in new situations (as would be the case in assessing initial susceptibility in subjects with no previous experience with hypnosis), it might even be worthwhile to categorize subjects into four groups based on congruence/incongruence

between perceived and actual control source, as shown below:

		Actual primary control source	
		Internal	External
Perceived primary control source	Internal	I-congruent	Incongruent
	External	Incongruent	E-congruent

The congruent locus groups might confirm the internal-external predictions that have been made here. The hypnotic susceptibility of incongruent subjects would be more difficult to predict, though results might show us whether actual or perceived locus is more powerful a determinant.

There is one final question to be raised here about how we might most appropriately define the concept of control. Discussion so far has centered on control of the events in one's life, but what events are we, and should we, be talking about?

Rotter's scale is specifically addressed to locus of control of reinforcement (or reward or success; Rotter, 1966). Is this the class of events whose control we are concerned with in hypnosis? Or are we really concerned with a locus of control of behavior, of the subjects' own actions. Behaviors are a class of events that may, of course, be reinforcing in themselves, but are not the same as the entire class of reinforcing events.

Unless the Rotter scale measures locus of control of events in general, including one's own actions, it may not be the appropriate instrument to use. A scale is needed which specifically measures what subjects believe determines their own behaviors, whether they act voluntarily or involuntarily, whether they have choice of action.

Rotter's scale does not speak to the freedom of choice to act, but simply to what determines what happens to one regardless of how one acts, that is, to control of consequences rather than to control of actions.

In this connection, Fromm's (1972) comments on ego activity and ego passivity are pertinent:

Basically we could say that the ego is active, or autonomous, when the individual can make a choice, act with "free will;" it is passive, or lacks in autonomy, when a person is overwhelmed by his instinctive demands or by demands coming from the environment. (pp. 238-239)

This distinction between voluntariness and involuntariness seems most closely related to the concept of control within hypnosis. The ego passivity/activity dimension may be the definition of control which will show a relationship to susceptibility, and it can, of course, be subdivided into perceived and actual categories.

Other locus of control measures may have more limited applicability. To the extent that the Rotter scale measures a general tendency to attribute internal or external causation, for example, it may be related to subjects' explanations of their behavior, as on post-hypnotic suggestions. A subject who, acting upon a suggestion to do so, sticks out his tongue at the hypnotist after he is awakened may explain his behavior in various ways: "I just felt like doing it" (internal) or "you must have told me to do that" (external). This kind of application of the Rotter scale would be of limited theoretical usefulness, though it might be of some clinical importance inasmuch as clients' attributions of therapeutic gains may determine the extent and persistence of those gains (Gardner, 1976).

This section was intended to clarify ways of thinking about the con-

cept of control. While there are no final answers here to the question of what definition of the concept is most appropriate to hypnosis research, several suggestions have been made.

#### Control and the Concept of Dissociation

Thus far, the working assumption has been that if the concept of control appears on the criterion side of the equation, it should also appear in some form on the predictor side. This section questions the validity of that assumption by examining the forces within hypnosis which theoretically determine control and feelings of control. From this, it will be argued that concepts of control applicable in the normal waking state may be qualitatively different from those relevant to hypnosis as an altered state of consciousness.

When we say that subject cannot bend his arm, what we really mean is that he does not bend his arm and reports that he cannot. This feeling of involuntariness is a report of loss of control on a conscious level and is indicative of depth along the dimension of non-conscious involvement proposed by Shor (1977). The conscious mind perceives its desire to bend the arm and perceives as well that the arm does not bend. Since his conscious willing has no effect, the logical conclusion is loss of control. Where, then, is the source of control? Shor (1977) expresses it this way:

Although the hypnotic subject can look as if he is no longer in control of his own volitional activities... that is only because at some deeper-lying level than is operative within the boundaries of consciousness he is actively, deliberately, voluntarily keeping his elbow stiff while simultaneously orchestrating for himself the illusion that he is really trying his best to bend it. In this case the volition that the subject is aware of within consciousness is subordinated to the volition that the subject is unaware of beyond consciousness. (p. 26)

The actual source of control, then, is the subject, his own non-conscious volition. It is unnecessary here to go into the reasons for incongruence between conscious and non-conscious volitions; the fact of the difference is the chief point. Reported involuntariness is a misattribution here (or perhaps a failure to attribute). It might seem, then, that subjects who, as one of the four groups described in the preceding section, have control but attribute to external sources would be those who are most susceptible to hypnosis, inasmuch as the same kind of incongruence occurs within hypnosis.

But are the mechanisms the same in both cases? If not, it may be inappropriate to equate the two even though the results appear the same. Brain and computer may arrive at the same conclusion to a problem, but if the processes by which they do so are not the same, the analogy of brain to computer is of limited usefulness. One could not, for example, expect that equivalent manipulations would produce the same changes in both since those manipulations would affect different processes.

The process by which misattribution occurs within hypnosis is termed dissociation. Dissociation here refers to the notion that the conscious mind (i.e., the immediate consciousness, those phenomena of which we are aware, usually in a verbalizable sense) is not aware of certain strivings or desires which are, then, by definition, within the bounds of the nonconscious. Dissociation, of course, is a term also used more broadly than this as Hilgard (1973) points out. But here it is a case of dissociation between two "concurrent streams" of consciousness, as Hilgard puts it, both of which may be equally within consciousness (as opposed to the unconscious) but maintained as parallel

rather than interactive.

Within hypnosis, the subject's initially conscious desires to be a good hypnotic subject become "dissociated beyond the bounds of conscious awareness" (Shor, 1977). In the apparent involuntariness seen in many hypnotic phenomena, the nonconscious strivings are superordinate with respect to the subject's behavior (e.g., maintaining a rigid arm) while verbal reports about control can be made only on the basis of what is within conscious awareness (e.g., the subordinate desire to bend the arm).

This general process of dissociation is not unique to hypnosis. Hilgard (1973) cites examples of its fairly ordinary occurrence, as when we carry out a complex habit pattern, such as driving, without being quite aware that we are doing so. Additionally, extreme dissociation between feelings and thoughts on the one hand and actions on the other may be characteristic of schizophrenia. But though the process occurs apart from hypnosis, there are characteristics of it within hypnosis that do not appear very frequently in the normal waking state.

Most notably, the elements that are dissociated are conflicting volitions ("I do want to bend my arm"/"I do not want to bend my arm"). Dissociation in the normal waking state, as when we perform some action without having been aware of it, may or may not be of that nature. When it is, as for example when we say "I didn't mean to do that," it may be that there is a conflict between conscious and unconscious desires. This inaccessibility of the contents of the unconscious to the conscious is a special form of dissociation (repression) which Shor (1977) includes in his theory as an important but essentially non-

hypnotic dimension. The dissociation that produces feelings of involuntariness, however, is between two streams of consciousness, one of which we are immediately aware (conscious) and one of which we are not (nonconscious), but the nonconscious, in Shor's approach, is not equivalent to the unconscious. Thus, the specific form of dissociation (dissociation between two streams of consciousness containing conflicting volitions) relevant to feelings of involuntariness in hypnosis has relatively few direct parallels in the normal waking state.

It is interesting to note that when subjects report feelings of involuntariness, they may say, for example, "I did not cause my hand to rise," thus rejecting an internal attribution. At the same time, though, they may express the feeling that "the hand just moved by itself." This is only a quasi-external attribution in that it is not an attribution to an external source in the sense we usually mean it. It is an external attribution only within the context of dissociation, an attribution which itself reflects dissociation, here the dissociation of the hand from the person. The hand becomes in a sense not a part of oneself and hence capable of acting on its own. That is, there is often a bodily dissociation concomitant with the mental dissociation.

How direct the parallels between dissociation outside of and within hypnosis need to be in order for the former to be useful in predicting hypnotic susceptibility (at least along the dimension of nonconscious involvement) is, of course, an empirical question. But it does seem that what we should be looking at is non-hypnotic tendencies to dissociate rather than non-hypnotic sources of control or perceptions of control sources, two concepts which may have little to do with each other.

### Induction Condition

There were four significant interactions involving induction condition, but three (H-locus by condition on objective Factor II and on perceived hypnotic control source; H-locus by condition by sex on objective Factor II) were unprotected by MANOVA F's and the fourth (locus by condition) was accompanied by a nonsignificant MANOVA F. Thus, interpretation of the interactions is premature and they are reported here chiefly for their heuristic value. Discussion will focus on the main effects obtained.

Induction condition showed significant main effects on both objective and subjective total scores and on all factor scores except subjective Factor II (direct suggestion items). Additionally, there were significant effects on measures of vividness of imagery, involuntariness, perceived depth, and perception of hypnotic control source.

The question relating to perceived source of hypnotic control is in part a manipulation check, and the main effect on this variable provides partial support for the adequacy of the manipulation. Subjects in the other-directed condition were more likely to attribute their experiences to the tape (42%) than were subjects in the cooperative (28%) or self-directed (20%) groups. Moreover, 67% of the subjects in the self-directed condition attributed their experiences to their own efforts while the percentages for other-directed and cooperative conditions were 41% and 38%, respectively. The lower percentage of self-attribution in the cooperative condition as compared to the other-directed is due to 33% of the subjects there choosing a third open alternative (described by nearly all subjects as a combination of tape and self), an alternative chosen by only 17% of those in the



other-directed condition. Of course, what is referred to here as induction condition is actually the combination of pre-induction communication and induction, and though their relative contributions cannot be sorted out, it is not unlikely that the pre-induction comments were the most important in this variable.

With respect to the other significant differences among conditions, Newman Keuls tests showed that there were no differences between cooperative and self-directed conditions. The cooperative condition was more effective than the other-directed condition in all cases, while the self-directed condition was more effective than the other-directed on all variables noted above except objective Factors II and III (direct suggestions and cognitive items).

The absence of any differences between cooperative and self-directed conditions may be due to the fact that, although subjects in the latter were told that they should use the tape as if they were speaking to themselves and giving themselves suggestions, spontaneous comments by subjects in laboratory write-ups suggested that many did not really take it that way. The following excerpts from lab reports of those in the self-directed condition are illustrative.

I was not expecting a tape as such, to hypnotize me.

...I got stubborn at times, thinking how silly it was to listen to a tape which seemed to be telling me what to do.

...we listened to a tape with a voice trying to make you relax...

The hypnotist on the tape attempted to bring the subjects to a hypnotic state.

...I tried hard to listen to the voice on the tape and make myself obey, but somehow deep inside I knew that it was a tape...

Certainly there were other subjects in this condition who reported that they did use the suggestions as their own (and, indeed, in all conditions there were some subjects who reported their induction condition different from what it really was, even though all subjects had been fully debriefed). Since all these comments were spontaneously and voluntarily given on some of the lab reports, it is not possible to know how many subjects did or did not take the self-directed instructions to heart. Clearly, though, the pre-induction instructions were not adequate. Alternative to strengthening the pre-induction communication would be making the induction itself more clearly self-directed. A technique such as Shor's (1970) Inventory of Self-Hypnosis might profitably be used in place of a tape, and the only reason it was not was to make the conditions as comparable as possible. Thus some strength of manipulation was sacrificed to a desire for experimental control of possibly confounding variables.

The other-directed condition might also have been even more convincingly so if a live induction had been used instead of a tape. One subject (among others) in this condition reported that he "saw no possible way that a voice on tape could exert power over my mind", but preferences for a live hypnotist were expressed by subjects in other conditions (including the self-hypnosis condition). It is also possible that the other-directed condition might best be conducted on a one-to-one basis. Previous researcher has indicated no difference on objective scores between individual and group inductions (Bentler & Hilgard, 1963) nor between taped and live inductions (Gilbert & Barber, 1972), but there might be an interaction with type of induction used.

In any case, scores in the other-directed condition were lower than those in the other conditions (except for subjective Factor II where none of the conditions differed and objective Factors II and III in the self-directed condition). One possible reason for this difference is, of course, that the source of control presented in pre-induction communications and inductions is a dimension directly relevant to susceptibility. There are, however, possible confoundings.

Barber and Calverly (1964) found that tone of voice is a factor in susceptibility, a forceful tone eliciting greater responsiveness than a "lackadaisical" tone. There may be some tone differences among the conditions here, but if anything the other-directed is the most forceful and yet yielded the poorest results.

Another possibility is that the conditions also differ in the extent to which they allay fears and anxieties concerning hypnosis. Twelve percent of the subjects had answered "yes" to the statement "Hypnosis would be a frightening experience for me," and a wider response range than the dichotomy provided might well have revealed more subjects leaning in that direction. Many commented in lab write-ups on their anxiety going into the experiment. Some stated that they were put at ease before the induction itself, but others reported that their doubts were not completely satisfied until the end of the session. Nearly all those subjects expressing such anxieties also spontaneously indicated a willingness or desire to try hypnosis again now that they knew "what it was really all about."

These comments are from male subjects in the other-directed condition:

I was fearful of the experiment. This was the first time I tried to be hypnotized and I didn't know what to expect. Now that my curiosity has been satisfied I believe I could reach a deeper hypnotic state.

Before I was hypnotized, I was quite nervous and did not know what to expect, but after the experiment was over I had very positive views of hypnosis.

I think most everybody has varying degrees of fear and anxiety before being hypnotized for the first time, myself included. For this reason, I would like to be hypnotized again to see if I could achieve a higher level of hypnosis since I would be more relaxed.

The following statements are from females in the self-directed condition:

Before the actual experiment I was a bit apprehensive about the whole thing, but when I realized that I was internally in control, I was fascinated.

We were told that we would do this to ourselves and we were in control of ourselves. Once I understood this I became a willing subject.

These statements are, of course, only selected anecdotal evidence, but they do raise the possibility that while experiences in any of the induction conditions may reduce anxiety and increase motivation for future attempts at hypnosis, there may have been a differential allaying of anxieties prior to the inductions. Although all pre-induction communications informed subjects that they would not be asked to do anything that would make them feel silly or embarrassed, the other-directed pre-induction communication may well have confirmed rather than eased one of the apparently major fears of hypnosis -- control by another person. There is no suggestion of control in either the self-directed or cooperative conditions (which did not differ from one another on any measures). Thus, what was intended to be variation along a dimension of locus of control may be in

reality little more than variation on a dimension of removing fears and misconceptions, which has been cited by Barber and DeMoor (1972), as well as others, as a major factor in susceptibility. If this explanation for the difference among conditions is correct, the present experiment might be best viewed as a between-groups study of the modification of hypnotic susceptibility.

If pre-induction communications in the self-directed and cooperative conditions did allay anxiety and increase motivation while that in the other-directed condition did not, one might expect that the pre-hypnosis beliefs and expectations would correlate more highly with susceptibility scores in the other-directed condition, but no such pattern emerged here. A better check on whether the pre-induction communications differentially affected anxiety and motivation would be to assess beliefs and expectations at this point rather than (or in addition to) measuring them before the pre-induction communications (although Diamond *et al.*, 1974, have cautioned against assessing attitudes immediately prior to induction to avoid "test-reactivity effects.")

The only evidence that something else might be operating are the factors where the pattern of differences among conditions did not hold. There was no main effect of condition on subjective Factor II and no difference between self-directed and other-directed conditions on objective Factor II. This is the direct suggestion factor, containing the items of head falling, hand lowering and hands moving together. One may speculate that these direct suggestions are less threatening than the challenge items of Factor I and so less affected by whether or not fears of loss of control have been eased prior to induction. A similar case might be made for the finding that the self-directed and other-direction conditions did not differ on objective Factor III

(cognitive items). This is not a completely satisfying explanation, however, for it does not account for the superiority of the cooperative condition over the other-directed on objective Factors II and III.

It is interesting, too, that there were no significant differences among subjects on the item-by-item scores of resistance or desire to have the experiences. If an explanation of condition effects in terms of differential modification of attitudes were correct, one would expect differences on these measures as well. Sample means were ordered as would be predicted (desire greatest in self-directed and least in other-directed; resistance greatest in other-directed) but in light of the significance levels obtained, the differences must be attributed to sampling error. The desire measure approached significance ( $p < .076$ ) but the resistance measure did not.

The hypothesis that the other-directed condition would produce more feelings of involuntariness was not confirmed since both conditions were more effective as was also the case for vividness of imagery. As to why feelings of involuntariness were least in the condition where they were expected to be greatest, the discussion in the last section under locus of control offers the possibility that the perception of external control fostered in the other-directed condition may in fact be irrelevant to such experiences. Rather, it may be that the other-directed condition was less effective in producing dissociation and therefore less effective in producing feelings of involuntariness. The elements of the induction conditions which might bear upon dissociation, however, are not immediately apparent.

Why should vividness of imagery have been least in the other-directed

condition, especially since desire and resistance, two factors which might reasonably be expected to affect the production of imagery, were not dependent upon type of induction used? In this connection, it is useful to review a portion of the pre-induction protocols for the three conditions.

**Other-directed:** The most important element is the hypnotist's skill and ability. He concentrates your thoughts and directs your imagination.

**Cooperative:** People who are willing to cooperate in applying their own abilities of concentration and imagination can experience what hypnosis is like.

**Self-directed:** You must wish to experience hypnosis and use your own imagination and concentration in bringing it about.

Imagination is mentioned in all three of these (and comparable imagery suggestions provided in the inductions themselves), but how that imagination is to be generated is described differently. In the other-directed condition, imagination is to be produced and directed by the hypnotist, while the subject is pictured as the moving force in the other conditions. This suggests another dimension on which the conditions differ, that of passivity/activity. To the subject in the other-directed condition, it is implied that he need only sit back and be acted upon, exerting no effort to imagine along with the instructions, an effort whose importance has been noted by several researchers (e.g., Barber & DeMoor, 1972; Spanos & Barber, 1974; Spanos & McPeake, 1974). Clearly there are a number of confounded dimensions which need to be sorted out: implied locus of hypnotic control, degree of anxiety modification, and degree of activity/passivity called for. These dimensions need to be manipulated separately, if possible, in order to explain the susceptibility differences found in the three conditions.

Whatever the ultimate explanation for the effect of induction condition found here, it is true that the strength of effect was small,  $\omega^2$  values ranging from 1% to 8% depending upon the criterion measure. This does not necessarily abrogate the meaningfulness of the findings, however. As Hilgard (1965) has noted, "If subjects are not used as their own controls, but are assigned at random to different groups, the effects of treatment differences are... attenuated". If anything, then, the effects found here may be underestimates. Moreover, researchers do not typically report statistics on strength of effects in the literature, so that it is not possible to say whether the effects found here are more or less powerful than is usually the case in hypnosis research. Finally, while strength of effect is an important factor in practical situations, as in prediction of susceptibility, it does not necessarily reflect theoretical impact, for even the finding of no differences can be of theoretical importance.

#### Sex of Subject

Deckert and West (1963) surveyed the mixed history of results on sex differences in hypnotizability and concluded that if present, they are not great. When found, sex differences have usually favored females, and the results here support this while strengths of effect ( $\omega^2$  values ranged only from 1% to 3%) support Deckert and West's conclusion about the size of difference. Females scored more highly than males on both objective and subjective total scores, on all factor scores except objective Factor III, on vividness of imagery and feelings of involuntariness, and on perceived depth.

The higher scores for females on perceived depth reflects a relative



accuracy of perception given that females did actually achieve greater depth as that is measured by objective and subjective total scores.

Higher scores on the involuntariness measure were anticipated by Freundlich and Fisher's (1974) report that females more often described themselves as under the control of the hypnotist. However, there was no significant sex difference on perceived source of hypnotic control, a finding which supports the author's previous contention that feelings of involuntariness do not determine causal attribution. That is, feelings of being under the hypnotist's control are indicative of feelings of involuntariness, but feelings of involuntariness do not automatically mean that one attributes control to the hypnotist. The sex difference in involuntariness also parallels the significant sex differences in responses to the pre-hypnotic beliefs/expectations questionnaire item "While hypnotized, things would happen to me automatically," where 65% of females responded "yes", compared to 46% of males.

Only a few studies have obtained item-by-item vividness of imagery scores as was done here, and none of these reported on sex differences. Given reports on the facilitatory role of imagery in susceptibility, though, it is not surprising that females were higher on this measure since their susceptibility was also greater.

Females averaged a full point higher than males on both objective and subjective total scores. While one point does not sound like a large margin, it does represent 8% of the total 12-point scale. Looked at another way, it is a 17% increase over males' objective scores and a 13% increase over males' subjective scores.

As to why sex differences appear, one possibility is a difference

in attitudes toward hypnosis. The beliefs/expectations questionnaire administered prior to the hypnosis session showed nine statements on which males and females differed significantly. Two revealed females more likely to view hypnosis as a frightening experience, both as a general belief and as a personal expectation. Four questions showed females more likely to associate hypnosis with a loss of control. Females were also more likely to expect hypnosis to be unlike any other experience they have ever had. On the remaining two questions, males were more likely to believe the hypnotist's skill is more important than their own abilities and that intelligence is related to hypnotizability, the less intelligent being more easily hypnotized.

It is interesting to compare the results of some of the questionnaire items with those obtained by London (1961) almost twenty years ago. London found 86% of his subjects disagreed with the statement that people can be hypnotized against their will, compared to 88% of the subjects here. In London's survey, 74% believed that amnesia occurs, compared to 80% and 62% here on the beliefs and expectations questions, respectively. London found 56% agreeing that hypnosis is an unconscious state in which people are not aware of what they are doing, compared to 66% here. London found a significant sex difference which does not appear here. Responses to another question seem less stable over the years. London found that 81% agreed that "It is difficult for a hypnotized person to resist obeying suggestions," while comparable figures here are 48% and 68% for the statement as a general belief and as a personal expectation, respectively. London also found a sex difference which again did not appear here. If the samples are comparable (London tested 645 introductory psychology students, only 6.8% of whom had pre-

viously been hypnotized), it would appear that there has been a considerable change of attitude on this item.

It is also interesting to note some of the differences between beliefs and expectations on the present questionnaire. While 52% believe that people cannot "awaken" by themselves, only 29% believe this would be true for them. Conversely, only 48% believe people cannot resist suggestions while hypnotized, but 68% believe it would be difficult for them. And as noted above, 80% believe most people have amnesia following hypnosis while only 62% believe they would. Finally, only 16% believe in general that whether a person will experience hypnosis or not depends more upon the hypnotist than the subject (with no sex difference) while 36% expect that whether or not they would experience hypnosis depends more upon the hypnotist than themselves (with significantly more males agreeing than females).

There are some differences in the wordings of the beliefs and expectations questions that may account for some of the differences, but it does appear that general beliefs do not mirror personal expectations. In this regard, Shor (1971) found an overall correlation of only .53 between personal predictions and general estimates by subjects of responses on the twelve items of HGSHS:A. Since personal expectations and general beliefs do sometimes differ, it may be important to be careful in the wording of items in questionnaires assessing attitudes toward hypnosis so that one is actually picking up on what one intends to.

It is not necessarily the case, however, that personal expectations are more predictive than general beliefs. Shor (1971) found correlations of .22 between general estimates and susceptibility and .25 between

personal estimates and susceptibility.

The preliminary patterns which emerged here in multiple regression analyses suggest a more complicated situation. It appeared, for example, that it is beneficial to consider correlations for males and females separately. A similar conclusion was drawn by Melei and Hilgard (1964) and by Rosenhan and Tomkins (1964) who found attitudes toward and preferences for hypnosis differentially predictive dependent upon sex. They found, in fact, that attitudes and preferences were predictive of susceptibility only for females.

These authors, however, used attitude and preference measures unlike the more extensive questionnaire used here, and they also obtained correlations only with total objective scores, while a variety of dependent measures was obtained here. It does not appear, overall, that females' attitudes are more predictive than males'. One may be able to use beliefs and expectations as low order predictors for either sex, but not, perhaps, in quite the same way. For females, for example, expectations were consistently more predictive than beliefs, a pattern which did not hold for males. Using beliefs, there appears to be a greater predictability for males. Finally, which is the best may well depend upon the criterion of interest; it appears, for example, that if one uses belief scores, objective criteria are more predictable than subjective criteria. It must be stressed, of course, that these are tentative impressions based upon the general pattern of results; they are offered here as hypotheses meriting investigation and not as conclusions.

#### Concluding Statement

The complexity of this study is no doubt apparent. Its primary

purpose was to test the role of locus of control in new ways. While that intent was unrewarded with statistically significant findings for the locus of control variable, the very absence of such has led to still other ways of viewing the concept of control in hypnosis that may be of some theoretical importance. Speculation on the reasons for differences among induction conditions and between sexes have also produced a number of ideas for future research.

Some measures have been taken which appear to be new contributions, most notably item-by-item measures of desire and resistance. While no significant differences were found on these measures, they are quite possibly important mediating variables which could profitably be included in other hypnosis research, especially, perhaps, in modification studies.

As a study yielding firm conclusions, this is perhaps comparable to most research -- shattering breakthroughs are rare events indeed; as a heuristic study, it has served well.

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## APPENDIX A

## ROTTER'S LOCUS OF CONTROL SCALE

Instructions

This is a questionnaire to find out the way in which certain important events in our society affect different people. Each item consists of a pair of alternatives lettered a or b. Please select the one statement of each pair (and only one) which you more strongly believe to be the case as far as you're concerned. Be sure to select the one you actually believe to be more true rather than the one you think you should choose or the one you would like to be true. This is a measure of personal belief; obviously there are no right or wrong answers.

Your answers to the items on this inventory are to be recorded in column I of the answer sheet labeled A in the answer booklet provided you.

Please answer these items carefully but do not spend too much time on any one answer. Be sure to find an answer for every choice. Find the number of the item on the answer sheet and circle the letter, a or b, which you choose as the statement more true.

In some instances you may discover that you believe both statements or neither one. In such cases, be sure to select the one you most strongly believe to be the case as far as you're concerned. Also try to respond to each item independently when making your choice; do not be influenced by your previous choices.

You may refer back to these instructions if it will help you in responding to the items.

Scale items

- \*1. a. Children get into trouble because their parents punish them too much.  
b. The trouble with most children nowadays is that their parents are too easy with them.
2. a. Many of the unhappy things in people's lives are partly due to bad luck.  
b. People's misfortunes result from the mistakes they make.
3. a. One of the major reasons why we have wars is that people don't take enough interest in politics.  
b. There will always be wars, no matter how hard people try to prevent them.
4. a. In the long run, people get the respect they deserve in this world.  
b. An individual's worth often passes unrecognized no matter how hard he tries.
5. a. The idea that teachers are unfair to students is nonsense.  
b. Most students don't realize the extent to which their grades are influenced by accidental happenings.
6. a. Without the right breaks one cannot be an effective leader.  
b. Capable people who fail to become leaders have not taken advantage of their opportunities.
7. a. No matter how hard you try, some people just don't like you.  
b. People who can't get others to like them don't understand how to get along with others.
- \*8. a. Heredity plays the major role in determining one's personality.  
b. It is one's experiences in life which determine what one is like.
9. a. I have often found that what is going to happen will happen.  
b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
10. a. In the case of the well-prepared student, there is rarely if ever such a thing as an unfair test.  
b. Many times exam questions tend to be so unrelated to course work that studying is really useless.
11. a. Becoming a success is a matter of hard work; luck has little or nothing to do with it.  
b. Getting a good job depends mainly on being in the right place at the right time.
12. a. The average citizen can have an influence in government decisions.  
b. This world is run by the few people in power, and there is not much the little guy can do about it.

13. a. When I make plans, I am almost certain that I can make them work.  
b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyway.
- \*14. a. There are certain people who are just no good.  
b. There is some good in everybody.
15. a. In my case, getting what I want has little or nothing to do with luck.  
b. Many times we might just as well decide what to do by flipping a coin.
16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.  
b. Getting people to do the right thing depends upon ability; luck has little or nothing to do with it.
17. a. As far as world affairs are concerned, most of us are victims of forces we can neither understand nor control.  
b. By taking an active part in political and social affairs the people can control world events.
18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.  
b. There is really no such thing as "luck".
- \*19. a. One should always be willing to admit mistakes.  
b. It is usually best to cover up one's mistakes.
20. a. It is hard to know whether or not a person really likes you.  
b. How many friends you have depends upon how nice a person you are.
21. a. In the long run the bad things that happen to us are balanced by the good ones.  
b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
22. a. With enough effort we can wipe out political corruption.  
b. It is difficult for people to have much control over the things politicians do in office.
23. a. Sometimes I don't understand how teachers arrive at the grades they give.  
b. There is a direct connection between how hard I study and the grades I get.
- \*24. a. A good leader expects people to decide for themselves what they should do.  
b. A good leader makes it clear to everybody what their jobs are.
25. a. Many times I feel I have little influence over things that happen to me.  
b. It is impossible for me to believe that chance or luck plays an important role in my life.

26. a. People are lonely because they don't try to be friendly.  
b. There's not much use in trying too hard to please people; if they like you, they like you.
- \*27. a. There is too much emphasis on athletics in high school.  
b. Team sports are an excellent way to build character.
28. a. What happens to me is my own doing.  
b. Sometimes I feel I don't have enough control over the direction my life is taking.
29. a. Most of the time I can't understand why politicians behave as they do.  
b. In the long run the people are responsible for bad government on a national level as well as on a local level.
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Note: Score is the number of unlined items which have been chosen by subjects; the higher the score, the greater the belief in an external locus of control.

\*The six starred items are fillers and do not contribute to the locus of control score.

## APPENDIX B

ASSESSMENT OF RESENTMENT  
OF EXTERNAL CONTROLInstructions to subjects

In the preceding questionnaire, you indicated which of various statements you believe most strongly to be true as far as you are concerned. I want you now to look at each item a second time and make a different kind of judgment, a judgment as to whether or not the particular statement you chose in each item is a relatively acceptable state of affairs to you or not.

Make a choice about each alternative you have already selected (ignore the alternatives you did not select) by asking yourself which of the following two alternatives best expresses your feelings about each belief:

A - Acceptable: This is an acceptable state of affairs to me; I don't mind its being so; it doesn't particularly bother me that it is so. It's all right/okay with me that it is so. I don't feel especially negative about it.

U - Unacceptable: This is not an acceptable state of affairs to me; I resent it; it bothers me that it is so; I feel negatively about its being so and would strongly prefer it not to be true

Please note that choice U above is not quite the same as thinking that ideally it would be nice in some abstract sense if it were not so. That is, you might think it would be nice if it were not so and yet not be bothered that it is so, not really feel particularly negative about it, perhaps not really caring one way or the other. If this is your reaction to an item, you should circle alternative A, not alternative U.

You previously expressed your beliefs about the items; now you are being asked to express, in a sense, your emotional reactions to the beliefs you expressed. As before, of course, there are no right or wrong answers, since what you feel is simply what you feel.

Record your answers in column II of answer sheet A. Find the number of the item on the answer sheet and circle A or U, whichever best expresses your feelings about the alternative (a or b) you chose earlier (and not the unchosen alternative for the item). Please consider your answers carefully but do not spend too much time on any one item. Be sure to give an answer for every item. Do not change any of your a/b choices at this time.

In some instances you may feel that you are not quite sure how you feel. In such cases, be sure to select the one feeling that most closely



approximates the way you feel. Also try to respond to the items independently; do not be influenced by your previous choices.

You may refer back to these instructions if it would be helpful to you.

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Note: Rejection scores (representing degree of resentment of external control) are the percentage of external locus statements marked as unacceptable.

## APPENDIX C

PRE-INDUCTION PROTOCOL AND INDUCTION  
OTHER-DIRECTEDPre-induction Communication

(The following remarks are presented ad lib by the experimenter)

In a few minutes you will be presented with procedures which will enable you to experience hypnosis. Afterwards you will report on what the experience was like in an answer booklet which I will distribute to you now. The booklet is sealed. Do not open it until I tell you to do so later. On the cover page are spaces for your name and some other information. Please fill this in now, but do not open the booklet itself. Fill in the information on the cover page only (allow a minute or two).

Let's talk awhile before we start. I want you to be quite at ease. This is the first time that any of you are experiencing hypnosis. 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 being a part of what goes on and by not trying to watch the procedures 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 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. Second, you will not be asked to do anything that will make you look silly or stupid, that will prove embarrassing to you. We are here for serious scientific purposes.

Third, there will be no probing into your personal affairs, so that there will be nothing personal about what you are to do or say during the hypnotic state.

A word about what hypnosis is in order at this point. Hypnosis is a special state which is brought about by the power of one person's suggestions -- the hypnotist -- upon another person. Thus, the most important element is the hypnotist's skill and ability. He concentrates your thoughts and directs your imagination to hypnotize you.

In order that exactly the same procedures will be used for everyone who participates in this research, the hypnotic induction has been placed on

tape. That is, there will be several groups like yourselves in this research, and the principles of experimental method require that all these groups have the same hypnotic induction. The only way to ensure this is to have the procedures on tape. This tape has been prepared by a skillful hypnotist who has successfully hypnotized a great many people. Moreover, it has been shown by many researchers that a taped induction does not differ significantly from an in-person induction. Thus, through a tape, the skillful hypnotist is still able to induce the hypnotic state, as well as if he were standing in front of you.

I have been trained in inducing hypnosis and have hypnotized a great many people and I will be here with you throughout the entire procedure. Are there any questions before we begin? (Questions are answered by paraphrasing the statements already made.)

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. As soon as you are settled down comfortably, I will begin the tape.

### Taped Induction

#### 1a. Head falling

To begin with, I want you to experience how it feels to respond to suggestions when you are not hypnotized. Sit up straight in your chair.... Close your eyes and relax; continue, however, to sit up straight. Close your eyes and sit up straight. Stay in that position with your eyes closed, while remaining relaxed. (Allow 30" to pass) Now just remain in that position with your eyes closed.

In a moment I will concentrate your thoughts on your head falling forward. 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.

You will listen carefully to what I say and you will think of your head falling forward, drooping forward. It is as if I had attached a weight to your head and am causing it to fall forward, falling forward. More and more forward. I am pulling the weight and 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!

Now sit up and open your eyes. Sit up and open your eyes. You can see how I can concentrate your thoughts about a movement and cause the tendency to make the movement. I will hypnotize you as I concentrate your thoughts and cause them to be expressed in action. At this point I have shown the idea of what it means to accept and act upon suggestions I give you.

#### 2a. Eye closure

Now I want you to seat yourself comfortably and rest your hands in your lap. 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. ... Hands relaxed... Look directly at the target. I am about to give you some instructions to make you relax and gradually 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. In making you concentrate upon the target and my words, I will be able to hypnotize you. I can hypnotize you by doing these things. I can hypnotize you in this way. Concentrate on the target and listen to my words; whatever is going to take place will happen. I will make it happen. Pay close attention to what I tell you and think of the things I tell you to think about and 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. My words will create a state of strong interest in some particular things. In a sense you are hypnotized whenever you see a good show which makes you 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 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 essence the hypnotized person is like a sleepwalker, for he can be made to carry out various and complex activities while remaining hypnotized. I want you to keep up your attention and interest and to continue to follow my instructions as you have been doing. I will not make you do anything that would cause you any embarrassment. Most people find this is just a very interesting experience.

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, it will happen; 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 happen.

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. My giving these suggestions to other people will not disturb you but will simply make you 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 need be without it disturbing you. Now just relax yourself completely. I want you to 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... 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 may come 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. My words are making you drowsy and sleepy, more and more drowsy and sleepy while your eyelids become heavier and heavier, more and more tired and heavy.

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. My words are making you increasingly drowsy and sleepy. The strain in your eyes is getting greater and greater. It would be so nice 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.

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.

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...

Your eyes may have closed by now, but 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, I want you to just let your eyes close. Completely closed. Close your eyes now.

You are now comfortably relaxed, but I am going to relax you 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. I am going to make you 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 do all sorts of things I tell 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 want you to keep on paying attention to my voice and 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.

### 3a. Hand lowering (left hand)

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 show you how thoughts affect actions in this state. Not all people experience just the same things in this stage, 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 will experience whatever you can. Pay close attention to what I tell you and watch what happens. Whatever will happen will happen, even if it is not what you expect.

Instruction Proper. 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. 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 will 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... 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 I had put a weight on it and were pulling the hand and arm down... you can picture a weight pulling on it... and as it feels heavier and heavier it begins to move... as if I 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, down... eight... heavier and heavier, down and more and more... nine... down... ten... heavier and heavier... down more and more.(Allow 10")

Now I want you to let your hand 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... just relax, relax.

#### 4a. Arm immobilization (right arm)

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 just how heavy it is... Just try to lift your hand up, just try. Just try to lift your hand up, just try (Allow 10").

Now stop trying... just relax. You notice that when you tried to lift it, there was some resistance because of the relaxed state I have put you 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

Now something else. Put your fingers together. Interlock your fingers and press your hands tightly together. 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 locked together as if I had glued them 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")

Now 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)

Extend your left arm straight out in front of you, up in the air, and make a fist. Left arm straight out in front of you. 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... I want you to 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")

Now just 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 your whole body will relax. As your arm relaxes, your whole body relaxes.

#### 7a. Hands moving (together)

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

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

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").

Now 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 no... That's right, now relax. Just relax.

#### 9a. Hallucination (fly)

I am sure that you have paid so close attention to what I have been

telling you that you have not noticed the fly which has been buzzing around you... But now that I call your attention to it you become increasingly aware of this fly which is going around and around 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

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 minutes 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")

Now 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

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 the 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. It will be as if I had caused a fog to roll in and cover up these memories, a deep, thick, heavy fog which covers up these memories. 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 the experimenter tells you that you can remember. You will remember nothing of what has happened until the experimenter says to you: "Now you can remember everything!" You will remember nothing 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 the experimenter tells 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! Any remaining drowsiness which you may feel will quickly pass.

(A distinct tapping noise is made at this point. Allow 10' to pass)

## APPENDIX D

PRE-INDUCTION PROTOCOL AND INDUCTION  
SELF-DIRECTEDPre-induction Communication

(The following remarks are presented ad lib by the experimenter)

(The first five paragraphs are the same as in the other-directed condition, q.v.)

A word about what hypnosis is in in order at this point. Hypnosis is a special state which is achieved through the desire and ability of each individual. Thus, the most important element is you. You must wish to experience hypnosis and use your own imagination and concentration in bringing it about. All hypnosis is really self-hypnosis. If you want to experience hypnosis and if you apply your own imagination and concentration in certain ways, you will be able to hypnotize yourself.

In order that exactly the same procedures will be used by everyone who participates in this research, a self-hypnosis tape has been made. That is, there will be several groups like yourselves in this research and the principles of experimental method require that all these groups use the same procedures. The only way to ensure this is to have self-hypnosis procedures on tape. You will be using this tape to hypnotize yourself. It will be as if you were speaking to yourself.

I have had training in hypnosis and have worked with many people learning hypnotic skills and I will be here with you throughout the entire procedure. Are there any questions before we begin? (Questions are answered by paraphrasing the statements already made).

(Last paragraph is the same as for the other-directed condition, q.v.)

Taped induction

## 1a. Head falling

To begin with I will experience how it feels to respond to suggestions I give myself when I am not hypnotized. I will begin by sitting up straight in my chair... I will close my eyes and relax, while continuing to sit up straight. My eyes are closed and I am sitting up straight. I will stay in this position with my eyes closed, while at the same time letting myself relax. (Allow 30" to pass) I am remaining in the same position with my eyes closed... sitting up straight in my chair... with my eyes closed.

In a moment I will start to think of my head falling forward. I know that thinking of a movement and making a movement are closely related. Soon after I think of my head falling forward I will experience a tendency to make the movement. I will find my head actually falling forward, more and more forward, until my head will fall so far forward

that it will hang limply on my neck.

I am thinking of my head falling forward, drooping forward. It is as if I had attached a weight to my head to make my head fall forward, forward, more and more forward. My head is falling forward, falling forward. More and more forward. The weight is helping it fall, more and more forward, falling more and more forward. My head is going forward, drooping down, down, limp and relaxed. My head is drooping, swaying, falling forward, falling forward, falling forward, falling, swaying, drooping, limp, relaxed, forward, forward, falling, falling, falling... Now!

Now I will sit up and open my eyes. I am sitting up and opening my eyes. I can see how thinking about a movement produces a tendency to make the movement. I can learn to hypnotize myself as I bring myself to give expression to my action tendencies. At this point I have the idea of what it means to accept and act upon suggestions I give myself.

#### 2a. Eye closure

Now I'm going to sit comfortably and rest my hands in my lap. Resting my hands in my lap. Now I'm going to look at my hands and find a spot on either hand and focus on it. It doesn't matter what spot I choose; just some spot to focus on. This spot I have chosen is the target... my hands are relaxed... I'm looking directly at the target. I am going to give myself some instructions that will help me to relax and gradually to enter a state of hypnosis. I am relaxing and making myself comfortable. I'm looking steadily at the target and keeping my eyes on it. My ability to hypnotize myself depends in part upon my ability to concentrate upon the target and upon the suggestions I will give myself. I can hypnotize myself by doing these things. I can hypnotize myself if I want to. I want to experience hypnosis and am doing my best to concentrate on the target and on the suggestions I will give myself, letting happen whatever I feel is going to take place. I will just let it happen. If I pay close attention to the suggestions I give myself and think of the things I tell myself to think about, I can easily experience hypnosis. 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 things. In a sense I am hypnotized whenever I see a good show and forget I am part of the audience, but instead feel I am part of the story. Hypnotizing myself may feel at first like falling asleep, but with the difference that somehow or other I will continue to hear my own suggestions as a background to whatever other experience I 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 when hypnotized, I will be like a sleepwalker for I will be able to carry out various and complex activities while remaining hypnotized. All I need to do is to keep up my attention and interest and continue to follow the suggestions I give myself as I have been doing. I will do nothing that will cause my any embarrassment. Like most people, I will find this a very interesting experience.

I am relaxing, Not tense. I am keeping my eyes on the target, looking at it as steadily as I can. Should my eyes wander away from it, that will be all right... I will just bring my eyes back to it. After a while I may find that the target gets blurry, or perhaps moves about, or again, changes color. That is all right. Should I get sleepy, that will be fine, too. Whatever happens, I will let it happen and keep staring at the target for a while. There will come a time, however, when my eyes will be so tired, will feel so heavy, that I will be unable to keep them open any longer and they will close, perhaps quite involuntarily. When this happens, I will just let it take place.

As I continue to give myself suggestions, I will find that I will become more and more drowsy, but I may respond at a different rate than others. Some people's eyes will close before others. When the time comes that my eyes have closed, I will just let them remain closed. I may continue to give myself suggestions for my eyes to close. These suggestions will not bother me but will simply allow me to relax more and more.

I will find that I can relax completely but at the same time sit up comfortably in my chair with little effort. I will be able to shift my position to make myself comfortable as needed without it disturbing me. I am allowing myself to relax completely. I am relaxing every muscle of my body. I am relaxing the muscles of my legs... Relaxing the muscles of my feet... Relaxing the muscles of my arms... relaxing the muscles of my hands... of my fingers... Relaxing the muscles of my neck, of my chest... Relaxing all the muscles of my body... Letting myself be limp, limp, limp. Relaxing more and more, more and more. Relaxing completely. Relaxing completely, Relaxing completely.

As I relax more and more, a feeling of heaviness may come over my body. A feeling of heaviness is coming into my legs and my arms... into my feet and my hands... into my whole body. My legs feel heavy and limp, heavy and limp... My arms are heavy, heavy... My whole body feels heavy, heavier and heavier. Like lead. My eyelids feel especially heavy. Heavy and tired. I am beginning to feel drowsy, drowsy and sleepy. My breathing is becoming slow and regular, slow and regular. I am getting drowsy and sleepy, more and more drowsy and sleepy while my eyelids become heavier and heavier, more and more tired and heavy.

My eyes are tired from staring. The heaviness of my eyelids is increasing. Soon I will not be able to keep my eyes open. Soon my eyes will close of themselves. My eyelids will be too heavy to keep open. My eyes are tired from staring. My eyes are becoming wet from straining. I am becoming increasingly drowsy and sleepy. The strain in my eyes is getting greater and greater, greater and greater. It would be so nice to close my eyes, to relax completely, and just listen sleepily to suggestions I give myself. I would like to close my eyes and relax completely, relax completely. I will soon reach my limit. The strain will be so great, my eyes will be so tired, my lids will become so heavy, my eyes will close of themselves, close of themselves.

My eyelids are getting heavy, very heavy. I am relaxed, very relaxed. There is a pleasant feeling of warmth and heaviness all through my body. I am tired and drowsy. Tired and sleepy. Sleepy. Sleepy. Sleepy. Listening only to my own suggestions. Paying attention to nothing else but my own suggestions. My eyes are getting blurred. I am having difficulty seeing. My eyes are strained. The strain is getting greater and greater, greater and greater.

My lids are heavy. Heavy as lead. Getting heavier and heavier, heavier and heavier. They are pushing down, down, down. My eyelids seem weighted, weighted with lead, heavy as lead... My eyes are blinking, blinking, blinking... closing... closing.

If my eyes have not closed by now, they would soon close by themselves. But there is no need to strain them more. Even if my eyes have not closed fully yet, I have concentrated well upon the target, and have become relaxed and drowsy. At this time, I can just let my eyes close. My eyes completely closed. My eyes are closed now.

I am now comfortably relaxed, but I am going to relax even more, much more. My eyes are now closed. I will keep my eyes closed until I tell myself otherwise or I tell myself to awaken... I feel drowsy and sleepy. I will keep my thoughts on the suggestions I have given myself -- just listen to myself. I am going to get much more drowsy and sleepy. Soon I will be deep asleep, but I will continue to hear my suggestions. I will not awaken until I tell myself to do so. I shall now begin to count. At each count I will feel myself going down, down, into a deep comfortable, a deep restful sleep. A sleep in which I will be able to do all sorts of things I tell myself to do. One -- I am 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--I am sinking, sinking into a deep, deep sleep. Nothing will disturb me. I'm paying attention only to my suggestions and the things I will call my attention to. I will keep on paying attention to my suggestions and the things I tell myself... Eight--nine--ten--eleven--twelve--deeper and deeper, always deeper asleep--thirteen--fourteen--fifteen--although deep asleep I can clearly hear these suggestions I am making. I will always hear them no matter how deeply asleep I may feel myself to be... Sixteen--seventeen--eighteen--deep asleep, fast asleep. Nothing will disturb me. I am going to experience many things that I will tell myself to experience... Nineteen, twenty. Deep asleep! I will not awaken until I tell myself to do so. I will wish to sleep and will have the experiences I shall suggest.

### 3a. Hand lowering (left hand)

Introduction. As I become even more drowsy and sleepy, it will not disturb me to make myself comfortable in my chair and put my head in a comfortable position.

Now that I am very relaxed and sleepy, listening without effort to my suggestions, I can learn more about how my thoughts affect my actions

in this state. Not all people experience just the same things in this state, and perhaps I will not have all the experiences I suggest to myself. That will be all right. But I will have at least some of the experiences and I will find these interesting. I will just experience whatever I can. I will pay close attention to my suggestions and watch what happens. I will just let happen whatever I find is happening, even if it is not what I expect.

Instruction proper. I will now extend my left arm straight out in front of me, up in the air, with the palm of my hand down. Left arm straight out in front of me... straight out, up in the air, with the palm of my hand down. Left arm straight out in front of me... palm down. I will now pay close attention to this hand, the feelings in it and what is happening to it. As I pay attention to it I am more aware of it than I have been -- I notice whether it is warm or cool, whether there is a little tingling in it, whether there is a tendency for my fingers to twitch ever so slightly... I will pay close attention to my 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... I can picture a weight pulling 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 down, down and more and more... nine... down... ten... heavier and heavier... down more and more. (Allow 10")

Now I will let my hand go back to its original resting position and relax. My hand back to its original resting position and relax. I noticed how heavy and tired my hand and arm felt; much more so than it ordinarily would if I were to hold it out that way for a little while; I noticed how something seemed to be pulling it down. Now I just relax... my hand and arm are quite comfortable again... quite comfortable again. Just relaxing. Relaxing.

#### 4a. Arm immobilization (right arm)

I am very relaxed. The general heaviness I have felt from time to time I now feel all over my body. Now I will pay close attention to the right arm and hand... My right arm and hand share in the feeling of heaviness... how heavy my right hand feels... and as I think about this heaviness in my hand and arm the heaviness seems to grow even more... Now my arm is getting heavy... very heavy. Now my hand is getting heavy... so heavy... like lead... perhaps a little later I would like to see how heavy my hand is... it seems much too heavy to lift... but perhaps in spite of being so heavy I could lift it a little, although it may now be too heavy even for that... I will see how heavy it is... I will just try to lift my hand up, just try. Just try to lift my hand up, just try. (Allow 10")

I will stop trying now and just relax. I notice that when I tried



to lift it, there was some resistance because of the relaxed state I am in. But now I can just rest my hand again. My hand and arm feel normal again. They are no longer heavy. I could lift them now if I wanted to, but will not try now. I will just relax... relax completely. Relaxing. Just relaxing.

#### 5a. Finger lock

Now I will try something else. I will put my fingers together. Interlock my fingers together. I am interlocking my fingers and pressing my hands tightly together. I am putting my fingers together. Interlocking my fingers and pressing my hands tightly together. Interlocking tightly... my hands pressed tightly together. I notice how my fingers are becoming tightly interlocked together, more and more tightly interlocked together... locked together as if I had glued them together. .. so tightly interlocked together that I wonder very much if I could take my fingers and hands apart... My fingers are interlocked, tightly interlocked... now I will try to take my hands apart... just try... (Allow 10")

Now I can stop trying and relax. I notice how hard it was to get started to take them apart. My hands no longer are tightly clasped together... I can take them apart. Now I will return my hands to their resting position and relax. My hands to their resting position and relaxing... just relaxing.

#### 6a. Arm rigidity (left)

Now I will extend my left arm straight out in front of me, up in the air, and make a fist. My left arm straight out in front of me. Straight out, and making a fist. My arm straight out, a tight fist... making a tight fist. I am going to pay attention to this arm and imagine that it is becoming stiff... stiffer and stiffer... very stiff... and now I notice that something is happening to my arm... I notice a feeling of stiffness coming into it... It is becoming stiff... and I know how difficult... how impossible it is to bend a bar of iron like my arm... I will see how much my arm is like a bar of iron... I will test how stiff and rigid it is... I will try to bend it... try. (Allow 10")

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

#### 7a. Hands moving (together)

In will nothold both hands up in the air, straight out in front of me, palms facing inward -- my palms facing toward each other. I will now

hold my hands about a foot apart... about a foot apart. Both arms straight out in front of me, hands about a foot apart... palms facing inward... about a foot apart.

Now I will imagine a force attracting my hands toward each other, pulling them together. As I think of this force pulling my 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")

I see again how thinking about a movement causes a tendency to make it. Now I can place my hands back in their resting position and relax... my hands back in their resting position and relaxing.

#### 8a. Communication inhibition

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

Now I can stop trying and relax. I see again how I have to make an effort to do something normally as easy as shaking my head. I can shake it to indicate "no" much more easily now. I am shaking my head easily now... Now I am relaxing. Just relaxing.

#### 9a. Hallucination (fly)

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

There, it's going away... it's gone... and I am no longer annoyed... no more fly... Just relaxing, relaxing completely. Relaxing... just relaxing.

#### 10a. Eye catalepsy

I have had my eyes closed for a long time while I have remained relaxed. They are now tightly closed, tightly shut... In a few moments I shall try to open my eyes. When I try, most likely my eyes will feel as if they were glued together... tightly glued shut. Even if I am able to open my eyes, I would, of course, only do so momentarily and then immediately close them again and relax, so as not to disturb my concentration. But I doubt that I will be able -- even imomentarily --

to open my eyes. They are so tightly closed that I could not open them. Perhaps I will soon like to try to open my eyes momentarily in spite of their feeling so heavy and so completely... so tightly closed. I will just try... try--to open my eyes. (Allow 10")

Now I can stop trying. Now again I allow my eyes to become tightly shut. My eyes are tightly shut. I've had a chance to feel my eyes tightly shut. Now I am relaxing. My eyes are normal again, but I will just keep them closed and relax. Normal again... just keeping them closed and relaxed... relaxed and shut.

11. Post-hypnotic suggestion (touching left ankle); amnesia

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

(A distinct tapping noise is made at this point. Allow 10" to pass)

APPENDIX E  
PRE-INDUCTION PROTOCOL AND INDUCTION  
COOPERATIVE

(The following remarks are presented ad lib by the experimenter)

(The first five paragraphs are the same as in the other-directed condition, q.v.)

A word about what hypnosis is in order at this point. Hypnosis is a special state which is achieved by the combined efforts of the hypnotist and the individual who wishes to experience hypnosis. Thus, the most important elements are you and the hypnotist as your guide. The two work together toward a common goal. The hypnotist's role is merely one of a helpful guide. Using this guidance, people who are willing to cooperate in applying their own abilities of concentration and imagination can experience what hypnosis is like.

In order that exactly the same procedures will be used with everyone who participates in this research, the guiding instructions of the hypnotist have been put on tape. That is, there will be several groups like yourselves in this research and the principles of experimental method require that all these groups receive the same guidance. The only way to ensure this is to have the instructions you will be putting to use on tape.

I have had training in hypnosis and have myself helped many people to experience hypnosis and I will be here with you throughout the entire procedure. Are there any questions before we begin? (Questions are answered by paraphrasing the statements already made)

(Last paragraph is the same as for the other-directed condition, q.v.)

Taped induction

1a. Head falling

To begin with, you can 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. Eyes closed and sitting 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, you will be asked 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 and think of your head falling forward, drooping forward. It is as if a weight were attached to your head and were pulling it forward, forward, more and more forward. Your head is falling forward, falling forward. More and more forward. As if the weight were pulling your head 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!

Now please sit up and open your eyes. Sit up and open your eyes. You can see how thinking about a movement produces a tendency to make the movement. You learn to experience hypnosis as you bring yourself to give expression to your action tendencies. At this point you have the idea of what it means to accept and act upon suggestions.

#### 2a. Eye closure

Now please set yourself comfortably and rest your hands in your lap. 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 where the spot is; just select some spot to focus on. The spot which you have chosen will be referred to as the target... hands relaxed... look directly at the target. The instructions to follow will help you relax and gradually to enter a state of hypnosis. Just relax and make yourself comfortable. Look steadily at the target and while keeping your eyes upon it, concentrate on these instructions. Your ability to be hypnotized depends partly upon your willingness to cooperate and partly on your ability to concentrate upon the target and upon these instructions. With your cooperation, I can help you to experience hypnosis. 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 these instructions, letting happen whatever you feel is going to take place. Just let it happen. If you pay close attention to the instructions and think of the things you are asked 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 things. 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 the guiding instructions as a 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 you need to do is to keep up your attention and interest and continue to cooperate as you have been coopera-

ting. Nothing will be done that would cause you any embarrassment. Most people find this a very interesting experience.

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.

As you continue to listen to these suggestions you will find that you will become more and more drowsy, but not all people respond at the same rate to the suggestions. 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 there will still be suggestions to help your eyes close. These suggestions will not bother you. They will be to help other people. These suggestions to help 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.

As you relax more and more a feeling of heaviness may come 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... 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.

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 become 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 the instructions. You would like to close your eyes and 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.

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 these instructions. Pay attention to nothing else but these suggestions. Your eyes are getting blurred. You are having difficulty seeing. Your eyes are strained. The strain is getting greater and greater, greater and greater.

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...

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. Eyes completely closed. Close your eyes now.

You are now comfortably relaxed, but you are going to relax even more, much more. Your eyes are now closed. Keep your eyes closed until you are asked to do otherwise or until you are asked to awaken... you feel drowsy and sleepy. Just keep listening to these instructions. Pay close attention to them. Keep your thoughts on these suggestions -- just listen. You are going to get much more drowsy and sleepy. Soon you will be deeply asleep but you will continue to hear these suggestions to guide you. You will not awaken until you are asked to do so. Now we will 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 will help 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 these instructions and the suggestions they offer you... Eight--nine--ten--eleven--twelve--deeper and deeper, always deeper asleep--thirteen--fourteen--fifteen--although deep asleep you can clearly hear these instructions. You will always be able to hear them 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 help you to experience. Nineteen, twenty. Deep asleep! You will not awaken until you hear me suggest that you do. You will wish to sleep and can have the experiences I will help you to have.

### 3a. Hand lowering (left hand)

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 these instructions, I am going to help you 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. Just experience whatever you can. Pay close attention to the instructions 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. Left arm straight out in front of you... palm down. Now 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 the feelings in it and what is happening to it -- 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... 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 we 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... down, heavier and heavier... down more and more (Allow 10").

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... Just relax. Relax.

### 4a. Arm Immobilization (right arm)

You are very relaxed. The general heaviness you have felt from time to time you now feel all over your body. Now 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. (Allow 10")

Now 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

Now let's try something else. Put your fingers together. Interlock your fingers together. Interlock your fingers and press your hands tightly together. 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... locked together as if they were glued 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... Now try to take your hands apart... Just try... (Allow 10")

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)

Please extend your left arm straight out in front of you, up to the air, and make a fist. Left arm straight out in front of you. Straight out, and make a fist. Arm straight out, a tight fist... make a tight fist. 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")

Now just stop trying to bend your arm and relax. Stop trying to bend your arm and relax. You can 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)

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 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")

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

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... You may wonder if you could shake your head to indicate "no". You probably would not be able to... You might try a little later to shake your head "no" when I ask you to... But you will find it quite difficult... Why don't you try to shake your head "no" now... just try to shake it. (Allow 10")

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)

You have paid so close attention to what we have been doing that you have not noticed the fly which has been buzzing around you... But now as you call your attention to it you become increasingly aware of this fly which is going around and around about your head... nearer and nearer to you... buzzing annoyingly... hear the buzz getting louder as it keeps darting to 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

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 you can try to open your eyes. When you are asked 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 probably you will not 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")

Now stop trying . Now allow your eyes again 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.

Remain deeply relaxed and pay close attention to the next instructions. In a moment we 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 we reach "five" you will open your eyes, but you will not be fully aroused. When we get to "one" you will be fully alert, in the normal state of wakefulness. You probably will have the impression that you have slept because you will have difficulty in remembering all the instructions given you and all the things you did or felt. It will be as if a fog had rolled in to cover up these memories, a deep, thick, heavy fog which covers up these memories. 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 the experimenter tells you that you can remember. You will remember nothing of what has happened until the experimenter says 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. We shall now count backwards from twenty, and at "five", not sooner, you will open your eyes, you will feel fine. You will have no headache or other after-effects. We shall now count backwards from twenty, and at "five", not sooner, you will open your eyes but not be fully aroused until we get to "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 you were asked to do so, just as you will forget the other things, until the experimenter tells 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 made at this point. Allow 10" to pass)

## APPENDIX F

## BELIEFS AND EXPECTATIONS QUESTIONNAIRE

The following questions deal with your beliefs, feelings, and expectations about hypnosis. Please answer each one as honestly and accurately as you can by circling on answer sheet B the response which most closely approximates what you believe, feel or expect. Circle one (only) answer for each item; do not skip any items. You may feel that you are not sure about your feelings on some items; if this occurs, please examine your feelings more closely and do make a decision in each case.

Part I: This section deals with your beliefs about hypnosis in general, not about what you think your own personal experience of hypnosis might be like for you. Circle either True or False on the answer sheet according to what you believe is the case for each item. If you are not sure, please force yourself to make a decision one way or the other. Please try to answer each item independently of your answers to the others.

1. Hypnosis is a very mysterious thing.
2. It is easy for most people to be hypnotized.
- \*3. The hypnotist achieves results by exerting his power over the subject.
- \*4. Many people can be hypnotized against their will.
5. Hypnosis is often a fearful experience.
6. Experiencing hypnosis is a skill that can be developed with practice.
- \*7. People who are hypnotized cannot "awaken" by themselves.
8. People who are less intelligent are more easily hypnotized than people who are more intelligent.
- \*9. While hypnotized, people cannot resist the suggestions of the hypnotist.
- \*10. Under hypnosis, most people lose consciousness and are not aware of what they are doing.
- \*11. While hypnotized, the subject is under the control of the hypnotist.
12. Most people cannot afterwards remember what they did while hypnotized.
- \*13. Whether a person will be able to experience hypnosis or not depends more upon the hypnotist than the subject.

Part II: This section deals with your own personal beliefs, feelings and expectations about what hypnosis would be like for you. Obviously, there are no right or wrong answers here. Respond to

the items according to how you really feel, not how you think you should feel.

Circle either Yes or No on the answer sheet according to whether you feel each item does or does not describe what your own experience would probably be like. Please try to answer each item independently of your answers to the others.

1. I believe that I would find it easy to be hypnotized.
2. I would be a good hypnotic subject.
3. I could "awaken" whenever I wanted to.
- \*4. It would be difficult for me to resist being hypnotized.
5. Hypnosis would be unlike any other experience I have ever had.
- \*6. It would be difficult for me to resist suggestions while I was hypnotized.
7. While hypnotized, things would seem unreal.
- \*8. While hypnotized, things would happen to me automatically.
- \*9. While hypnotized, I would be under the control of the hypnotist.
10. I would not be able to move parts of my body.
11. I would experience hallucinations.
12. I would not afterward remember anything that happened while I was hypnotized.
13. Hypnosis would be a frightening experience for me.
- \*14. Whether or not I would experience hypnosis would depend more upon the hypnotist's skills than upon my own abilities.
15. On the whole, hypnosis would be a pleasureable experience for me.
16. I would like to be hypnotized.

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\*These items comprise the hypnotic-locus of control scale.

## APPENDIX G

## HYPNOTIC EXPERIENCES QUESTIONNAIRE

(Pages one and two requested subjects to write down a list of the things that they recalled happening to them both before and after the experimenter's statement "Now you can remember everything." The amnesia suggestion was scored as passed if subjects recalled fewer than four items on page one.)

Section on Objective, Outward Responses

Listed below in chronological order are the eleven specific happenings suggested during the 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 a disqualification of your record.

## I. Head Falling

The first suggestion was 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

Next you were to rest your hands in your lap and pick out a spot on either hand as a target and concentrate on it, with the suggestion that your eyelids were becoming tired and heavy. Would you estimate that an onlooker would have observed that your eyelids had closed (before you were 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)

The next suggestion was 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 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)

The next suggestion dealt with the heaviness of your right hand and arm, followed by the suggestion that you 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 stopped 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

Next you were to interlock your fingers and it was suggested that they would become tightly interlocked. Then it was suggested that you try to take your hands apart. Would you estimate that an onlooker would have observed that your fingers were incompletely separated (before you stopped 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)

Next you were to extend your left arm straight out and make a fist, to notice it becoming stiff and then 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 stopped 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

Next you were to hold your hands out in front of you about a foot apart and then 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 returned 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

Next you were to think how hard it might be to shake your head to indicate "no", and it was then suggested that you try to do so. Would you estimate that an onlooker would have observed you make a recognizable shake of the head "no"? (That is, before you were 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

Next you were to become aware of the buzzing of a fly which was said to become annoying, and it was then suggested that you 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

The next suggestion was that your eyelids were so tightly closed that you could not open them, and then it was suggested that you try to do so. Would you estimate that an onlooker would have observed that your eyes remained closed (before you stopped trying)?

- Circle one: A. My eyes remained closed.  
B. My eyes had opened.

#### XI. Post-hypnotic suggestion (touching left ankle)

The next suggestion was that after you were awakened you would hear a tapping noise at which time you would reach down and touch your left ankle, and that you would do this but forget that such a suggestion had been made. 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 even make a partial movement to touch my left ankle, which would have been observable.



You have already indicated in the first part of this response booklet what you believe your outward behavioral responses to each suggestion to have been. In this section, we are concerned with your subjective experiences, what you felt inside that might not be obvious to an observer.

Part A: General reactions. For each of the following questions, please circle the answer which best describes your own feelings about your experiences. Space is provided after each for any comments you may wish to make.

1. I believe that the depth of hypnosis which I achieved was
  - a. none -- I was not hypnotized
  - b. light
  - c. medium
  - d. deep
2. What I experienced under hypnosis is
  - a. not at all what I expected
  - b. something like what I expected
  - c. almost exactly what I expected
3. Regardless of whether you feel you were hypnotized nor not, do you believe that your experiences were in fact primarily due to
  - a. the taped instructions
  - b. your own efforts and abilities
  - c. other \_\_\_\_\_
4. Did you ever feel that you were "two people" at once, that is, one person who was being hypnotized but also an onlooker, an observer of what was going on and what was happening to you?
  - a. yes, throughout the session
  - b. at some points
  - c. not at all

Part B: The items below deal again with the eleven specific happenings which were suggested. For each question, please circle the one (only) answer which best describes your own subjective experiences. Space is provided at the end of each item for any more detailed comments or descriptions you would like to make.

I. Head falling

When you were to think of your head falling forward, did you imagine a weight attached to your head?

very vividly                      somewhat                      not at all

Did you actively want your head to feel heavy, hope that it would fall so that you could have this experience?

yes                                      did not care                      did not want to do it



Did you actively want your hand and arm to feel heavier and lower, hope that they would so that you could have this experience?

yes                      did not care                      did not want them to

Regardless of whether or not an onlooker would have observed your hand and arm lowering, did you feel a sensation of them getting heavier and "trying" to fall, of being "pulled" downward?

yes    no

Did you at any point actively resist the feeling of your hand and arm getting heavier and falling downward, e.g., deliberately try to keep them from falling or give yourself countersuggestions that they would not fall?

yes    no

If your hand and arm did lower, did they seem to do so involuntarily, i.e., of their own accord, without your deliberately "helping" them along?

yes    no

#### IV. Arm immobilization (right arm)

With the suggestion about how heavy your right hand and arm felt and how difficult it would be to lift them, did you imagine your hand and arm as filled with lead, or as otherwise weighted down?

very vividly                      somewhat                      not at all

Did you actively want your hand and arm to feel heavy, hope that you would not be able to lift them?

yes                      did not care                      did not want them to be too heavy to lift

Regardless of whether or not an onlooker would have observed you as lifting your hand and arm, did they in fact feel extremely heavy to you and difficult to lift?

yes    no

Did you at any point actively resist the suggestion of your hand and arm getting heavy so that you could not lift them, e.g., give yourself countersuggestions that they were not heavy or that you would in fact be able to lift them?

yes    no

If you were not able to lift your hand and arm when you were to try, did you feel that you really could not (as opposed to your actively holding them down)?

yes    no

## V. Finger lock

When you were to interlock your fingers and feel them becoming so locked together that you would not be able to part them, did you imagine them as physically glued together?

very vividly                      somewhat                      not at all

Did you actively want your hands to feel glued together, hope that you would not be able to pull them apart so that you could have this experience?

yes                                      did not care                      did not want them to  
be locked together

Regardless of whether or not an onlooker would have observed you pull your hands apart, did you feel that they were locked or glued together to at least some extent?

yes                                      no

Did you at any point actively resist the feeling of your hands being locked together, e.g., deliberately give yourself countersuggestions that they were not or that you would in fact be able to pull them apart?

yes                                      no

If you were not able to pull your hands apart when you were to try, did you feel that you really could not pull them apart at that time (as opposed to your actively keeping them together)?

yes                                      no

## VI. Arm rigidity

When you were to extend your left arm straight out and imagine it becoming stiff and rigid, did you imagine your arm like a bar of iron?

very vividly                      somewhat                      not at all

Did you actively want to feel your arm become still and rigid, hope that you would not be able to bend it so that you could have this experience?

yes                      did not care                      did not want it to become too  
stiff to bend

Regardless of whether an onlooker would have observed you bend your arm when you were asked to try, did you feel that your arm was in fact stiff and rigid and very difficult to bend?

yes                                      no

Did you at any point actively resist the feeling of your arm getting

stiff and rigid so that you could not bend it, e.g., deliberately give yourself countersuggestions that it would not get stiff or that you would in fact be able to bend it?

yes no

If you were not able to bend your arm when you were to try, did you feel that you really could not bend it at that time (as opposed to your actively keeping it stiff and rigid)?

yes no

#### VII. Moving hands together

When you were to extend your arms out with palms facing each other and imagine them moving closer and closer together, did you imagine a physical force between your hands?

very vividly somewhat not at all

Did you actively want to feel your hands move together, hope that they would so that you could have this experience?

yes did not care did not want them to

Regardless of whether an onlooker would have observed your hands move toward each other, did you feel a force between them, feel them "trying" to move together?

yes no

Did you at any point actively resist the idea of your hands being pulled together, e.g., deliberately give yourself counter suggestions that they were not or actively keep them from moving together?

yes no

If your hands did in fact move together, did you feel that they did so involuntarily, i.e., without your deliberately "helping" them to come together?

yes no

#### VIII. Communication inhibition

With the suggestion that it would be very hard for you to shake your head "no", did you imagine anything holding your head, preventing it from shaking?

very vividly somewhat not at all

Did you want your head to remain still, hope that you would not be able to shake it?

yes                      did not care                      did not want it to be impossible  
to shake

Regardless of whether an onlooker would have observed you shaking your head, did you feel that it was in fact very difficult to do so?

yes    no

Did you at any point actively resist the idea that you would not be able to shake your head, e.g., deliberately tell yourself otherwise?

yes    no

If you were not able to shake your head "no" when you were to try, did you feel that your really could not (as opposed to actively preventing yourself from shaking it)?

yes    no

#### IX. Experiencing of fly

When you were told there was a fly buzzing about you and annoying you, did you actually feel or hear a fly?

very vividly                      somewhat                      not at all

Did you actively want to feel the fly, hope that you would?

yes                      did not care                      did not want to believe there  
was a fly there

Regardless of whether or not an onlooker would have seen you respond outwardly to the fly or not, did you feel any reaction to it inwardly (regardless of whether or not you thought it was real)?

yes    no

Did you at any point actively resist the idea of there being a fly, e.g., tell yourself that it was impossible?

yes    no

If you did in fact make some outward reaction to the fly, did you feel somehow that you had to (as opposed to just doing it to "go along" with the suggestion)?

yes    no

## X. Eye catalepsy

With the suggestion that your eyes were so heavy that you would not be able to open them, did you imagine glue or weights holding your eyelids down?

very vividly                      somewhat                      not at all

Did you actively want your eyelids to feel heavy hoping that you would not be able to open them so that you could have this experience?

yes                      did not care                      did not want them to be too heavy to open

Regardless of whether or not an onlooker would have observed you open your eyes, did you feel that they were extremely heavy and difficult to open?

yes    no

Did you at any point actively resist the idea that your eyes were so heavy you could not open them, e.g., deliberately tell yourself otherwise?

yes    no

If you were not able to open your eyes, did you feel that you really could not (as opposed to actively keeping them closed)?

yes    no

## XI. Post-hypnotic suggestion (touching left ankle); amnesia

With the suggestion that it would be very difficult for you to remember the experiences you had, did you imagine a fog rolling in and covering up these memories?

very vividly                      somewhat                      not at all

Did you actively want to be unable to remember, hope that you would be able to experience the suggested amnesia?

yes                      did not care                      did not want to have amnesia

Regardless of whether you did in fact remember your experiences before the experimenter said "Now you can remember everything," did you feel it was difficult to do so?

yes    no

Did you at any point actively resist the idea that you would not be able to remember, e.g., deliberately try to remember at that time or give yourself countersuggestions that you would be able to remember?

yes    no

If you were not able to remember much of what happened before the experimenter told you you could, did you feel that you really could not (as opposed to actively suppressing the memories)?

yes

no

With the suggestion that at the sound of a tapping noise you would reach down and touch your ankle, did you actively resist the suggestions, e.g., tell yourself that you would not?

yes

no

When the suggestion that you would touch your ankle was first given, did you want this to happen, hope that it would?

yes

did not care

did not want it to happen

Regardless of whether or not an onlooker would have observed you make a movement toward your ankle, did you feel an urge to do so?

yes

no

If you did make any movement toward your ankle when you heard the tapping noise, did it seem to be involuntary, i.e., did you feel you "had" to do something (as opposed to doing it just to "go along" with the suggestion)?

yes

no