THE EFFECTS OF HYPNOTICALLY INDUCED DREAMS ON CREATIVE PROBLEM SOLVING

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ABSTRACT

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PROBLEM SOLVING

By

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Conceptualizing creativity along classical Freudian lines, it was hypothesized in this study that creativity could be enhanced through the cathexis of primary process to the elements of a problem to be solved. Using problem solving as the dependent variable to demonstrate enhanced creativity, it was thus predicted that the representation of the elements of a problem in the manifest content of hypnotically induced dreams would result in enhanced creative functioning.

Ss participating in the study were males and females who had reached an impasse in the course of working on a project or solving a problem relating to academic, vocational, avocational, or personal concerns. Ss were randomly assigned to one of three treatment conditions: a hypnotic dream treatment run by the author and designed to affect a primary process/visually oriented approach to problem solving; a rational/cognitive treatment run by a co-experimenter and

designed to affect a secondary process/verbally oriented approach to problem solving; and a control treatment involving a personality interview and designed to impress Ss that decisions regarding possible assignment to other treatment conditions would be made on the basis of said interview. Half the Ss in the control group were seen by one or the other co-experimenter.

Results of the study demonstrated a significant effect for the hypnotic dream treatment over both the rational/cognitive treatment and the control treatment. Ss in the control group who remained at an impasse were subsequently treated under the experimental condition run by their respective co-experimenter. The results of this intervention revealed that prior exposure to the control condition did not affect the outcome for Ss under either of the two experimental conditions. Consequently, the results of all Ss receiving the two experimental treatments were combined, yielding once again a significant effect for only the hypnotic dream treatment.

In light of the successful outcome of this investigation, the task of operationally defining creativity was addressed. Creativity was thus operationalized as the formulation or development of either a tangible or intangible product which is novel in the context of an individual's or group's frame of reference and which satisfies the particular needs of the individual or group which demand innovation.

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INTRODUCTION

The study of creativity is a vast potpourri of scientific research, personality theory, cognitive theory, and introspective accounts of "creative persons" which addresses itself primarily to two questions. The first of these is, "What is creativity?" A great deal of energy has been devoted to answering this question, the results of which have been less than definitive. The second question is, "How can we stimulate or enhance creativity?" Many varied efforts have been made in this direction, some of which have yielded methods currently being used by industry with minimal to moderate success. It is in response to the relatively low level of success which most attempts to answer the second question have met that this research explores the possibility of enhancing creativity through the use of dreams. However, since the two basic questions concerning creativity are interrelated, the first shall be discussed before the second is pursued.

In defining creativity, three main concepts seem to emerge. They are the concept of the creative person, the concept of creative functions, and the concept of the creative process, each of which is linked to some kind of creative product. The concept of the creative person

defines creativity in terms of personality characteristics which, presumably, may be developed in less creative persons in order to enhance their level of creative functioning. Our knowledge about the "creative personality" comes largely from case studies of individuals who have been generally acknowledged as creative throughout history (da Vinci, for example), and from psychometric personality tests administered to persons judged to be creative by experts in their respective fields. A review of the literature by Stein (1968) has yielded a long list of "personality characteristics that have been found associated with the creative individual." A close inspection of this list reveals that studies finding specific "creative" personality characteristics are disputed by other studies which seem to find quite opposite characteristics. Thus, Barron (1955, 1957) finds the creative individual to be dominant and aggressive while Blatt and Stein (1957) find him to possess a lack of masculine aggressiveness. The creative individual has been found by R. B. Cattell and Drevdahl (1955) and Roe (1953) to be emotionally unstable by "psychological definition" while MacKinnon (1959a) finds him to be stable. It would appear that at this point, the concept of the creative personality has shed little light on our understanding of creativity.

The concept of creative functions stems largely from the work of Guilford. Using a method called morphological analysis, Guilford (in Stein, 1974) conceptualized a

structure of the intellect which he believed accounted for factors, particularly "divergent-production abilities," which were not accounted for by any of the then existing intelligence scales. Briefly, Guilford's morphological model consists of three dimensions called operations, contents, and products. Operations is "the operation performed on material," contents is "the medium in which the thought occurs," and products is "the combination of both operations and contents" (in Stein, 1974). Each dimension consists of several categories. It is Guilford's belief that the combination of any three categories from each of the three dimensions consists of a psychological factor which can be measured."

The fallout from this line of thinking has been the development of psychometric tests (sometimes inaccurately called "creativity tests") which seek to measure cognitive functions assumed to be involved in the mental operations of creative thinking. This, in turn, has had a profound effect upon research throughout the entire field of creativity. Numerous studies have used these tests to differentiate between groups of persons along creative/not (or less) creative dimensions and to measure the effects of methods designed to enhance creativity, even though the tests do not relate strongly to external criteria of creativity and are "not necessarily independent of factors involved in traditional tests of intelligence" (Stein, 1974).

The third concept of creativity, that of the creative process, is in reality a grabbag of theories which individually attempt to describe either a dynamic flow of mental operations or a series of discreet stylized stages by which a creative product is generated. Many of these descriptions are derived from personality and cognitive theory. Others seek to define a uniquely creative process which may or may not also incorporate elements from the two concepts of creativity previously discussed. A few samples of these theories illustrate the point.

Several descriptions of the creative process come from psychoanalytic psychology. Freud (1958) viewed creativity as the sublimation of instinctual drives and unconscious conflicts. As such, it is attributed to the temporary removal of repression, resulting in a regression to infantile modes of thought and experience which are dominated by unconscious impulses. The result of the regression is considered creative if the product is ego-syntonic.

Jung (1928), on the other hand, described the creative process as the unconscious activation of an archetype which is brought into relation with conscious ideas. In discussing art, for example, Jung argues that its universality stems from its archetypal expression, its representation of the collective unconscious.

Another view of the creative process which has its roots in psychoanalytic psychology is that of Kris (1953).

Here creativity is viewed as a regression in the service of the ego (adaptive regression) which consists of two crucial phases. During the first of these, the inspiration phase, the ego is passively receptive to unconscious material. Subsequently, in the elaboration phase, the ego critically evaluates and organizes this primary process laden material for its own creative purposes.

To Kubie (1958), however, the emphasis in the creative process lies not in the unconscious but in the preconscious. In this conceptualization, creativity occurs when the preconscious is temporarily freed from what Kubie feels is a lack of flexibility characteristic of both conscious and unconscious thinking.

Turning from psychoanalytic theory, we find descriptions of the creative process by Rogers and Maslow. Rogers (1959) primarily deals with the motivation underlying creativity. Essentially this is seen as self-actualization, the very motivation he views as basic to human nature. We create, in other owrds, because creative behavior is self-actualizing behavior. Maslow (1959), whose descriptions of the motivation underlying creativity parallel those of Rogers, nevertheless goes further by differentiating the creative process into primary process creativity and secondary process creativity. Examples of the former include jazz whereas examples of the latter include musical symphonies in which primary process thinking first prevails, then gives way to secondary process thinking which refines, criticizes, etc.

Associationistic psychology also offers a description of the creative process. Perhaps the best known work in this area is that of Mednick (1962) in which creative thinking is described as the process of forming associative elements into new combinations which are somehow useful in solving a problem or in meeting specified requirements. According to the primary laws of association, thoughts or ideas occur because of contiguity, similarity, or contrast. In other words, an association occurs because two stimuli occur together; because they are in some way similar to one another; or because they are different from one another. According to Mednick, the more remote the elements of a new combination, the more creative the process has been. Based upon this theory, Mednick has constructed a "creativity test" known, not surprisingly, as the Remote Associations Test.

Finally, there are descriptions of the creative process which denote discreet stages leading to the development of a creative product. Among such descriptions are those of Helmholtz, Poincaré, Wallas, and Stein. It should be noted that Kris' concept of the creative process, previously discussed within the context of psychoanalytic theory, also includes a description of stages.

To Helmholtz (Whiting, 1958), the creative process consisted of three important stages. During the first of these, known as saturation, data, facts, and sensations

are gathered for the purpose of developing new ideas. Saturation is in turn followed by incubation during which the material previously collected is shifted about and formed into new combinations without conscious effort. Illumination then occurs when the solution or some concept of the end state comes to mind.

The discovery by the mathematician Poincaré, that the transformations used to describe the Fuschian functions are identical to those of non-Euclidian geometry, led him to produce both an interesting introspective account of this particular creative act and, along more general structural lines, an expanded version of the Helmholtz model (Whiting, 1958). While essentially restating Helmholtz' three stages (here the first stage is called preparation rather than saturation), Poincaré adds a fourth stage called verification. This conceptualization, along with the introspective accounts of Poincaré, Helmholtz, and other creative persons, led Wallas (Stein, 1974) to his four-stage concept of the creative process. By now familiar, these stages are labeled preparation, incubation, illumination, and verification.

Finally, Stein (1974) presents an elaborate four-stage description of the creative process which seemingly attempts to integrate the concepts of the creative personality, the concept of creative functions, and previous accounts of the creative process. The result is a hybrid

theory which avails itself of a variety of specialized methods designed to enhance creative functioning within a given stage of operations. Stein's four overlapping stages are called preparation, hypothesis formation, hypothesis testing, and communication of results (presenting the creative product to others for evaluation). To Stein, the creative process is a unique orientation, a distinct departure from more traditional approaches. It may be heavily influenced in the preparation stage which consists of our entire realm of experience, experience which first precedes, then exists within the stage of hypothesis formation. The great bulk of one's experience which concerns Stein is one's formal education through which he feels the development of the creative process may be either fostered or impeded.

In fact, Torrance has conducted numerous studies on the effects of the school environment on creativity. Not surprisingly, he has found that teachers' objectives, their attitudes towards creativity, their evaluation of students, and the inflexible nature of existing teaching techniques may combine with potentially destructive behavior by classmates within a pupil's peer culture to inhibit creativity (Stein, 1974). On a more encouraging note, Torrance et al. (1961) demonstrated that teachers can be taught "principles of creative teaching" which may in turn improve students' creativity as measured by psychometric tests.

Beyond the realm of formal education, though, a variety of methods for enhancing creativity have been developed and/or assessed. Unfortunately, some of those which have been presented continue to exist without having undergone any substantial systematic evaluation. A few of the methods offered, such as morphological analysis as expounded by Allen (Stein, 1974), exist in a virtual vacuum, theoretically plausible but realistically unwieldy. Still others are either too highly specialized or too simplistic to have made significant contributions to the understanding of creativity.

Among the techniques offered have been those designed to stimulate the conscious production of ideas. Several of these suffer from one or more of the above mentioned deficiencies. While it is not within the scope of this review to elaborate upon these methods, a few are displayed in the more or less self-explanatory list below. Included among the methods designed to stimulate the conscious production of ideas are the following (in Stein, 1974):

1. Brainstorming, developed by A. F. Osborn;
2. Morphological analysis, developed by Dr. Fritz Zwicky;
3. Attribute listing, described by R. P. Crawford;
4. Checklists, described by B. B. Goldner and C. S. Whiting;
5. Forced relationships, described by C. S. Whiting;

6. PakSA (PackCorp Scientific Approach), developed by J. W. Taylor for the Packaging Corporation of America;
7. Input-Output, developed at General Electric; and
8. Use of the ridiculous, developed by E. K. VonFange.

In addition to the techniques designed to stimulate the production of conscious ideas, methods seeking to enhance creativity by affecting personality characteristics have been offered, almost entirely on a theoretical basis. Most prominent among them are role playing and psychotherapy. Research evidence supporting the former comes primarily from a study by Barron and Leary (1961) in which role playing "an extraordinarily original and creative person" enhanced creativity as measured by increased posttest scores on Guilford's Unusual Uses Test. Role playing "a highly intelligent, authoritarian person," on the other hand, lowered posttest scores. Support for the enhancement of creativity through psychotherapy comes largely from anecdotal accounts and second hand case studies. As yet, there have been no large-scale systematic investigations of the effects of psychotherapy on creativity.

Far more substantive work has been carried out in assessing the effectiveness of techniques designed to enhance creativity through so-called altered states of consciousness. Predominantly, research in this area has studied the effects of drugs on creativity. Other recent

efforts, more germane to the present study, have focused on the effects of hypnosis and, in at least one case, the effects of dreams. Beginning with the relatively long list of drug studies, a brief summary of the research dealing with the effects of drugs ranging from mild stimulants such as caffeine to powerful hallucinogens such as mescaline, provides an overview.

Research into the effects which caffeine has on creativity was conducted in a study by Nash (1962) in which the effects of alcohol were also assessed. With respect to caffeine, Nash found two main effects. The first effect found was that caffeine (in this case two cups of coffee) facilitated work on mechanized logical tasks. Subjects were more spontaneous in their associations, thought more quickly, produced more associations, and were less likely to be at a loss for words or ideas. The second effect found was that caffeine enabled subjects to better organize and assimilate information which they had heard. On the less positive side, Nash also points out that previous research has found a decrease in hand steadiness to be an effect of caffeine.

Within the same study, Nash evaluated the effects of two and four martinis, operationally defined as small and large doses of ethyl alcohol respectively. His findings were that while the small dose of alcohol somewhat facilitated the associative process of subjects, the heavy dose seemed to impair visual acuity, the ability to coordinate eye movements, perceptual closure, and short term memory.

Concludes Nash (1962, p. 109), ". . . the present findings suggest that alcohol can induce a freer flow of ideas . . . While creative solutions to difficult problems are unlikely to be conceived and fully elaborated under the influence of large quantities of alcohol, more moderate quantities of alcohol may shake one's everyday, unquestioned views, or otherwise render permeable the boundaries of previously fixed belief."

Less rigorous has been the study of the effects of marijuana on creativity. Representative of those offering evidence attributing creative "powers" to marijuana is Grinspoon (1971) who cites numerous anecdotal accounts by creative artists, including Allen Ginsberg, which are supportive of the premise that marijuana enhances creativity. On the other side of the issue is the American Medical Association whose 1967 report discredits the claims of artists on the grounds that there is no hard evidence linking the use of marijuana to enhanced creative functioning. A highly emotional issue, this debate continues to rage without resolution. Unquestionably, the larger body of research evaluating the general psychological effects of marijuana must become more focused before the relationship between the drug and creativity can be accurately defined.

The effects of morphine and amphetamines on creativity have been studied by Evans and Smith (1964) with mixed results. Compared to a placebo, subjects taking morphine performed significantly better on Guilford's Perceptual

Speed Test, Logical Reasoning Test, and Apparatus Test. Subjects taking amphetamines performed better on the Apparatus Test, Spatial Orientation Test, and Consequences Test. However, neither drug facilitated performance on the Alternate Uses or Anagrams tests. Nor did they improve scores on tests of ideational fluency, or general reasoning. Since most of these tests require divergent thinking, which is related to creativity on a theoretical basis by Guilford, it was concluded that morphine and amphetamines apparently have little or no positive effect on creative functioning.

LSD, like marijuana, has received considerable anecdotal support for its presumed creativity enhancing properties. Further evidence comes from Krippner (1969) who reports that the administration of LSD to a navy captain in 1966 enabled him to work out the solution to a problem in pattern recognition. On the other hand, two more extensive studies cloud the issue. McGlothlin, Cohen, and McGlothlin (1967) conducted first a pilot study, then a larger study in which the effects of LSD on creativity were assessed through pre- and posttest scores on psychometric "creativity" tests. Posttest scores taken in the pilot study one week following the administration of 200 micrograms of LSD showed no significant changes. In the larger study, three 200 microgram doses of LSD were administered to subjects on three separate occasions after the pretest battery of psychological measures had been given. Results of the posttest battery, given six months

after the third dose of LSD, showed no evidence to support enhanced creativity despite the feelings of 25 percent of the subjects that LSD had effectively done so. This finding was corroborated in a study by Zegans, Pollard, and Brown (1967) in which posttest measures of creativity were obtained from subjects to whom 0.5 micrograms of LSD per kilogram of body weight were administered two hours prior to testing. While these subjects performed significantly better than control subjects on originality of word associations, the remainder of the results were not statistically significant. The authors thus concluded that the administration of LSD to unselected individuals is unlikely to increase their creativity.

Two drugs left to be considered are psilocybin and mescaline. The effects of the former as they relate to creativity may be summarized succinctly by noting that once again there is anecdotal support attributing enhanced creativity to psilocybin but no research evidence confirming the same. The effects of mescaline, however, have been studied in a fascinating piece of research employing an outcome measure rarely used in the various attempts to enhance creativity. Its potential significance warrants a more detailed description.

Harman et al. (1969) began their study on the relationship between mescaline and creativity by using the knowledge that drug effects on creativity, or any other psychological function, are influenced by the subject's

immediate psychological state, his belief in the effectiveness of the drug, his trust in the experimenter, and his comfort in the experimental setting. To others studying drug effects, these factors have often proved confounding or have been used to qualify their results. Harman et al., on the other hand, attempted to use this information advantageously by building up their subjects' expectations about a positive effect prior to administering the mescaline.

Harman's subjects for the study were twenty-seven professional men, most of whom had no prior psychedelic drug experience. Among the fields represented were physics, architecture, and commercial art. The subjects, who worked in academic institutions and industry, were selected because the experimenters felt that they satisfied the criteria of possessing jobs which required creative problem-solving ability, of being psychologically normal as determined by psychiatric examination, and of being motivated "to discover, verify, and apply problem-solutions within his industrial or academic work capacity" (Harman et al., 1969, p. 449).

Each subject selected one or more problems in his field which required a creative solution. Some of these problems had been worked on unsuccessfully for weeks or months. They then had the above mentioned psychiatric examination which also served the dual purpose of acquainting subjects with the psychiatrist who was to supervise the experimental session. Additional interviews with the staff and meetings between subjects were held for the purpose of allaying

subjects' anxieties and to aid in the establishment of trust and rapport. The structure of the experiment was also discussed so that the subjects fully understood what was to take place and were prepared for any problems which might come up.

The experimental session began with the administration of 200 milligrams of mescaline to each subject. This was followed by three hours of relaxation during which the subjects were requested not to do any analytic thinking while they listened to music through stereo headphones. Three hours later they were then encouraged to talk with one another while they took a break for snacks. This was followed by an hour of psychological testing in which alternate forms of the tests administered prior to drug ingestion were given. Following the testing session, three to four hours were allotted for each subject to work on his problem(s) alone. Finally, the subjects were brought together once again for a meeting during which their experiences were shared and, in some cases, their problems worked on in groups.

The assessment of the effects of the above procedure was carried out on three fronts. Change scores on the psychological tests were analyzed, subjective reports of the experience (which were submitted a few days after the experimental session) were studied, and the theories or solutions to the problems which the subjects generated within three to six weeks following the experimental session were evaluated.

The most impressive aspect of the results concerns the work carried out on the problems brought in by the subjects. Of the forty-four problems worked on, new avenues for further investigation were opened for twenty; the go-ahead for a developmental model to be tested was given for one; working models of solutions were completed for two; solutions were accepted for construction or production for six; and partial solutions that were undergoing further development or were being applied in practice were generated for ten. No solutions were found for four problems and one problem was simply not worked on after the experimental session. Among the various solutions were an architectural design for a building, a design for a linear electron accelerator beam-steering device, a mathematical theorem for circuitry, and a design for a letterhead. Most interesting in light of the results was the finding that while the fluency of ideas as measured by the Purdue Creativity Test significantly increased following the ingestion of mescaline, the flexibility or range of solutions to the test items did not.

Performance on the Miller Object Visualization Test was found to be significantly increased as was performance on the Witkin Embedded Figures Test. The latter of these two findings was significant in suggesting to Harman et al. a possible shift from an external dependence on the environment for the stimuli necessary to respond (field dependence) to an internal locus for the stimuli necessary to respond

(field independence). This is evidenced in part by two additional findings. The first of these was that the effects of visual distractions, which were debilitating to subjects in the pretest administration of the Witkin, were lowered in the posttest administration. The second finding was that subjects' posttest visual memory was improved over their pretest visual memory.

Lastly, analysis of the subjective reports of the experience by Harman et al. found evidence of lessened inhibition and anxiety, increased visual imagery and fantasy improved concentration, increased empathy with objects and people, a greater desire to achieve elegant solutions, and evidence of unconscious material becoming more accessible. Justifiably, this study may be criticized on the grounds that it lacks proper experimental controls. Ideally, one would like to be able to weigh the contributions of each of the several procedures carried out within the larger experimental method. However, one cannot ignore the implication that within this research there may lie immensely promising possibilities for the enhancement of creativity.

Hypnosis, like drugs, has also been used in attempts to enhance creativity. Prior to 1971 these attempts were minimally successful at best. P. Bowers (1967) hypothesized that the reduction of defenses which allegedly occurs under hypnosis would result in a greater openness to experience which, in turn, would lead to enhanced creative functioning. Using scores from Guilford's Alternate Uses,

Consequences, Plot Titles and Simile Insertions tests as measures of creativity, Bowers reported slight evidence for an enhancement effect. This finding, however, did not survive replication by K. Bowers (1968) nor by K. Bowers and van der Meulen (1970).

Strongly influenced by psychoanalytic ego psychology, K. Bowers was aware that creativity had been explained by Kris (1953) in terms of adaptive regression or, in other words, regression in the service of the ego. He also noticed that hypnosis had been explained by Gill and Brenman (1959) in terms bearing a striking resemblance to the construct of adaptive regression. With the apparent relationship between creativity and hypnosis in mind, Bowers reasoned that hypnosis could be used to enhance creativity. In the face of apparent theoretical soundness, several factors seem to account for the lack of success met by P. Bowers (1967), K. Bowers (1968) and K. Bowers and van der Meulen (1970). Casting aside for the moment the issue surrounding the questionable validity of "creativity" tests, a closer look at the individual procedures involved in each of these studies may shed some light.

Three main points for consideration emerge. In the first place, subjects in all three studies were fully aware that their creativity was being tested. This may be viewed as a challenge to their self-esteem which, in turn, may have provoked enough anxiety to counteract whatever potential enhancing effect hypnosis may have had. In the

second place, the three investigations also included defense reducing suggestions which were designed to reduce conformity in thought by essentially instilling the fear that conformity would be criticized. Reyher (1968), however, has found in his clinical experience that suggestions directed against defenses and security operations are ineffective, due to the powerful response producing properties of the anxiety supporting these self-protective functions.

Most importantly, though, the failure to demonstrate enhanced creativity in these studies may be linked to the unanticipated trance-inducing properties of certain procedures used to prepare the subjects simulating hypnosis and the subjects in the waking control group. Each of these subjects was highly susceptible to hypnosis. In K. Bowers (1968), the subjects simulating hypnosis were simply requested to resist becoming hypnotized upon a posthypnotic cue. Subjects simulating hypnosis in K. Bowers and van der Meulen (1970) were asked to resist a taped hypnotic induction procedure. However, Burns (1972) and Sommerschield (1969) have both reported that highly susceptible subjects are likely to become hypnotized if instructions to resist are given in a waking state. In all probability, then, subjects "simulating" hypnosis were inadvertently hypnotized. With regards to the waking control subjects, those in each of the three hypnosis/creativity studies were given relaxation instructions and listened to music. Relaxation procedures, as demonstrated by Reyher and Wilson (1973), are

themselves trance-inducing. Given the high hypnotic susceptibility of each of the subjects in the three studies, it seems likely that those in the "waking" control group also became hypnotized.

While unsuccessful in their attempt to demonstrate enhanced creativity, K. Bowers and van der Meulen (1970) did report a relationship between creativity and hypnotic susceptibility for females, as did K. Bowers (1970). Additionally, K. Bowers (1971) reported a high correlation between a questionnaire of trancelike (regressive) experiences and high hypnotic susceptibility for females. These findings, however, in conjunction with the failure to demonstrate enhanced creativity per se suggest that the construct of adaptive regression may not be adequate for the purposes of integrating hypnosis and creativity. Indeed, P. and K. Bowers (1972) have both rejected Gill and Brenman's concept of hypnosis as an adaptive regression choosing at this time to simply acknowledge hypnosis as a "kind of regression."

Conceptualizing creativity along classical Freudian lines, Gur and Reyher (in press) reported enhanced creativity for a group of subjects under hypnosis when compared with two control groups, one simulating hypnosis, the other waking. Once again, each subject in this study was highly susceptible to hypnosis. Using the Torrance Test of Creativity as the treatment outcome measure, Gur and Reyher computed a one-way analysis of variance which demonstrated a

significant effect ($p < .01$) of the treatments on the General Creativity score of the test. This score was based on standard scores derived from the Verbal and Figural portions of the test. For each of these portions considered separately, the treatment effect was also reported to be significant ($p < .01$). Furthermore, post-hoc comparisons among means showed that the hypnotized subjects performed significantly better than either those subjects simulating hypnosis or those subjects in the waking control group. These statistics portray a virtually unqualified success, yet they do not reveal possible procedural discrepancies which may render a portion of the results to the status of experimental artifacts. Once again, a closer inspection is warranted.

Gur and Reyher employed four procedures which were designed to enable subjects to benefit from primary process thinking. The first of these was to hypnotize subjects for the purpose of facilitating a regression. Second, the tasks given to subjects were not identified as measures of creativity in order to reduce anxiety which, in turn, promotes secondary process thinking. Third, free imagery was used as a mode of representation for the elements of a problem because of the ease with which visual imagery is structured or shaped by primary process (Burns, 1972; Rehyer, 1973, 1969; Reyher and Smeltzer, 1966; Reyher and Morishige, 1969). Finally, the instructions for each task were phrased in the passive voice so as to minimize a

problem solving, task oriented (secondary process) approach (Reyher, 1962).

The possible procedural discrepancies alluded to refer primarily to the third and fourth procedures mentioned above as they relate to scores on the Verbal portion of the Torrance Test of Creativity. The Verbal portion used by Gur (1971) consists of seven subtests from which scores on verbal fluency, verbal flexibility, and originality were derived. Within these seven subtests, it does not appear that the use of free imagery was either systematic or consistent. For example, in "Ask and Guess," free imagery precedes the phase during which responses to the stimulus (in this case a picture) are elicited. In "Unusual Uses," imagery is elicited in addition to ideas in the response phase of the task. Finally, in "Just Suppose," imagery is directly tied to the elicitation of responses to be scored (". . . images will come to your mind that will show all kinds of exciting things that would happen as a result of this situation").

The phrasing of the instructions to "Just Suppose" which are mentioned above, leads into a discussion of the use of the passive voice. There is no doubt that the instructions to the response phase of the seven verbal subtests were indeed phrased in the passive voice. Yet, within each passively phrased instruction lie key qualifying words. Portions of these seven subtest instuctions, in

which the key words are underlined, comprise the following list:

1. Ask and Guess: "Now you'll find that several questions will come to your mind. . ."
2. Guessing Causes: "All kinds of possible causes of the action shown may now come to your mind."
3. Guessing Consequences: "All kinds of such possible consequences will come to your mind. . ."
4. Product Improvement: "Now all kinds of interesting and unusual ways . . . will come to your mind."
5. Unusual Uses: ". . . images of all kinds of cardboard boxes will come to your mind's eye, as well as all kinds of interesting and unusual uses. . ."
6. Unusual Questions: ". . . all kinds of questions will come to your mind. . ."
7. Just Suppose: ". . . ideas and images will come to your mind that will show all kinds of exciting things. . ."

Given the concrete, literal minded state of a highly susceptible subject under hypnosis, it is not improbable to attribute Gur's group differences on the Verbal portion of the test to the demand characteristics of each task which seem to call for a fluency of responses ("all kinds," "several"). Fluency, as defined by Torrance is "the total number of relevant responses" (Gur, 1971, p. 8). When it is taken into consideration that scores on verbal flexibility

and originality are influenced by the scores on verbal fluency, and that the F for originality in Gur's study does not remain significant when verbal fluency is taken into account in an analysis of covariance, the possibility emerges that the Verbal Creativity scores and, consequently, the General Creativity scores of subjects in the hypnotic group may be inflated. Virtual confirmation of this hypothesis comes from Gur's analysis of variance of the raw scores of the three groups of subjects in figural fluency, flexibility, originality, and elaboration. Of the three figural subtests used by Gur, none of the passivly phrased instructions to the response phase include anything remotely resembling the key demand words enumerated above. Not coincidentally, the F for figural fluency and figural flexibility are not significant. What is most interesting is that when figural fluency, which influences figural flexibility, originality, and elaboration is taken into account in analyses of covariance, the F for flexibility becomes significant while the F for originality and elaboration remain significant.

The role of hypnosis in the Figural portion of the test cannot be understood in isolation, however, because of an apparently vital link to visual imagery. Unlike the Verbal portion of the test, visual imagery was an integral part of each figural subtest, both as the mode of representation for the elements of each task and as the mode of response for each task. The need to further explore the

relationships between creativity, visual imagery, hypnosis, and primary process leads directly into the present research.

The need to explore is taken quite literally here, for this research is exploratory in nature. For centuries, dreams have been historically accorded a problem-solving function for which there is only theoretical and anecdotal support. Notes Freud (1965, p. 97), "Reports of numerous cases . . . seem to put it beyond dispute that dreams can carry on the intellectual work of daytime and bring it to conclusions which had not been reached during the day, and that they can resolve doubts and problems and be the source of new inspiration for poets and musical composers." Perhaps the most widely known manifestation of this statement is Kekulé's dream of a tail-to-mouth ring of snakes which revealed to him the manner in which carbon atoms are linked in the benzene ring (Lewin, 1969). Just as the first snake took the last snake's tail into its mouth, Kekulé awoke, knowing he had found the solution to his problem.

While numerous additional anecdotal accounts lend their testimony to the problem-solving capabilities of dreams, research evidence has not been forthcoming. The most relevant study appears to have been conducted by Snyder (Parloff, 1972) in which the problem-solving characteristics of dreams were studied as part of the dream research program at the National Institute of Health. Subjects were first presented a problem, then monitored

during sleep for EEG, respiration, and rapid eye movements to enable the experimenters to determine the occurrence of dreams. Once a dream was completed, each subject was awakened and asked where he stood on the problem. After several months of study it was concluded that while there was substantial evidence that the subjects were dreaming, there was little evidence that they were dreaming about the problem.

Stein (1974, p. 109) in discussing Snyder's research speculates that, "creative solutions in dreams may well be a function of the amount of time and effort an individual has devoted to trying to solve his problem, his motivation to do so, and the fact that the individual has selected his own problem and tried to solve it in his own way. It is quite evident that none of these obtained in the study cited."

Such considerations were, however, taken into account in the present research along with one important procedural addition. That is, the elements of problems being worked on were used to stimulate the manifest content of hypnotically induced dreams in order to ensure that subjects were indeed dreaming about their problems.

Subjects participating in this study were persons who had reached an impasse in the course of pursuing academic, professional, avocational, and/or personal problems or projects. Problem solving, our dependent variable, is but one relatively gross measure of creativity

which Von Fange (Williams, 1960) puts into perspective when he states, "Since a problem involves a perplexity, something new to our experience, it is therefore creative in nature. Thus, a problem may also be defined as a situation demanding creativeness on the part of the individual seeking a solution."

Our theoretical conceptualization of creativity is a direct reflection of that advanced by Gur and Reyher (in press). Conceived along classical Freudian lines, we conceptualize creativity as being a function of repressed drives becoming cathected to the elements of a problem to be solved. For this reason, these elements become derivatives under the sway of primary process because one or more of them has functioned as a day residue (is cathected by a repressed drive). Since the derivatives are remote, the expression of repressed drives is disguised and thus fully capable of becoming conscious, sometimes through nocturnal dreams or reverie states. Through the mechanisms of condensation, displacement, and symbolism the elements are synthesized in novel, if not unique, ways. This new material may be recognized as valuable by the as yet passively monitoring ego, then creativly utilized by a reactivated ego. Should the creative product be too blatent an expression of repressed drives, it will be rejected or treated with indifference. Once the elements of a problem have come under the influence of primary process representation, they can continually serve as remote derivatives of repressed

drives. These derivatives may become conscious when some conscious activity serves as a stimulus for a new integration of the elements of a problem by primary process thinking. A study by Wiseman and Reyher (1973) offers compelling empirical support for this conceptualization.

In this study, the subjects of an experimental group were given the Rorschach inkblots as stimuli for hypnotically induced dreams. One week later the same subjects were given a standard administration of the Rorschach test. These protocols were then compared with those of two control groups, one simulating hypnosis and one waking. The following pattern, which survived replication, emerged. Protocols from the hypnotic group showed an increase in degree of drive representation, deviations from logical orderly thinking, and most importantly, an increase in human movement which is considered to be the best indicator of creative imagination. Studies by Dudek (1968a, 1968b) support the relationships between creativity and human movement. Apparently, the inkblots, having become sources for the manifest content of dreams, reactivated primary process thinking during the posthypnotic administration of the Rorschach, influencing the interpretation of the inkblot by subjects in the hypnotic group.

Stimulated by the empirical findings of Gur and Reyher (in press) and Wiseman and Reyher (1973), and conceptualized within the theoretical framework of these studies, the hypothesis to be tested in this research is that through

the use of dreams, one's level of creative functioning may be enhanced, resulting in successful problem solving.

METHOD

Subjects

Twenty-four male and female subjects drawn from the Michigan State University community-at-large participated in the study. Most participants were either undergraduate or graduate students attending the university although university staff members as well as persons not affiliated with the university were also included. Each subject was at an impasse in the course of working on an academic, vocational, avocational, or personal problem or project at the time of his or her participation in the study.

Subjects were solicited on three fronts in an effort to reach as diverse a population as possible within the limited monetary confines and time restrictions given this study. First, a four-column-inch display advertisement was placed in the Michigan State University student newspaper, the State News. A sample of the advertisement is contained in Appendix B. Second, a column was placed in the "It's What's Happening" section of the State News, a student service describing various activities in and around campus. Due to State News regulations, the wording of the original display advertisement had to be altered. A sample of this column is contained in Appendix C. Finally, letters

describing the study were sent to residents of the university's graduate student dormitory. A sample of the letter is contained in Appendix D.

Depending on which solicitation was responded to, initial contact between the subjects and the author (E1) was made over the telephone in one of two ways. That is, subjects responding to either the display advertisement or the letter telephoned E1 while those responding to the "It's What's Happening" column were telephoned by E1. In each case, information was gathered from the subjects according to the following interview schedule:

Name_____ Address_____ Phone #_____

Sex____ Age____ Occupation_____ Briefly describe your project/problem_____

_____

_____

Describe the point at which you are "stuck" as clearly as possible _____

_____

_____

Approximately when did you begin work on this project/problem?_____

By what date must this project/problem be completed?_____

At the close of the interview, each subject was informed that he or she would be re-contacted as soon as possible to confirm an appointment time and date.

Procedure

Subjects were randomly assigned to one of the three following groups by a co-experimenter (E3):

Group 1. Hypnotic dream treatment;

Group 2. Rational/cognitive treatment;

Group 3. Personality interview control.

The eight subjects in group one were re-contacted, then seen for one treatment session by E1. The eight subjects in group two were re-contacted, then seen for one treatment session by a male co-experimenter (E2) who was blind to the actual experimental design. Subjects in group three were randomly divided into two sub-groups of four persons each. Subjects in one of the sub-groups were re-contacted, then seen by E1, while subjects in the other sub-group were re-contacted, then seen by E2.

Prior to the actual treatment session, none of the subjects were informed as to any of the particular procedures used with each group. Before proceeding with the treatments proper, however, subjects were asked to sign the Human Subject Consent Form which includes the provision that the consent to participate may be withdrawn at any time without penalty. Additionally, subjects in groups one and three were requested to sign a waiver permitting audio taping during the treatment session. Again, the waiver includes the provision that the consent to tape may be withdrawn at any time. Samples of these two consent forms are contained in Appendices E and F respectively.

Once all forms were signed, the treatments proceeded as follows:

Group 1.

El stated to S the following:

"This study involves the use of hypnosis. We know that both hypnosis and most of the creative functions are mediated by the right hemisphere of the brain (Dimond and Beaumont, 1974). In addition, music is mediated by the right hemisphere. We will use music and relaxation to help get you into hypnosis, or, in other words, into your right hemisphere. Then, while your suggestibility is enhanced, you will have a series of dreams or dream-like experiences which we hope will help you come to some new and satisfactory solution to your project/problem. Perhaps you are aware that several scientists and mathematicians have made their discoveries in a dream or while they were in a dream-like state. A well-known example of this is the discovery of the manner in which carbon atoms are linked in the benzene ring which occurred when Kekulé dreamed of a tail-to-mouth ring of snakes. Just as the first snake took the last snake's tail in its mouth, Kekulé awoke, knowing his problem was solved. Any questions?"

If at this time S had questions, as much time as was necessary was allotted for this purpose. Following this period, S was asked by El to recline in the overstuffed chair in which he or she was already sitting, to close his or her eyes, to relax, and to listen to the music and El's

voice. The music used to mediate the hypnotic induction was Mike Oldfield's "Tubular Bells" which was selected because its clear and interesting transitions, highly repetitive melody and driving rhythms make it well suited for directing S's attention.

Fifteen minutes into the hypnotic induction the music was gradually phased out. At this point, S was operationally defined to be under hypnosis. E1 then stated to S the following:

"As the music softens, some image or images will come into your mind's eye. When you see this image or these images, please raise your right hand about six inches."

Once the hand was raised, S was asked to describe what he or she saw. If a single image (as opposed to a series of images) was reported, E1 stated to S:

"Now several other images will come into your mind's eye. Please describe them to me as you see them."

Once three images had been reported, S was instructed to stop and to lower his or her hand. E1 then stated to S the following:

"Now some dream or dream-like images will come into your mind's eye. When you see this dream or these dream-like images, please raise your right hand six inches."

When the hand was raised, S was asked to describe what he or she saw. If S failed either to sustain three images or to visualize a dream/dream-like images, he or she was given a post-hypnotic suggestion for nocturnal dreams,

then formally awakened. The post-hypnotic suggestion was administered by E1 who stated the following:

"Every night, including tonight, for the next seven nights, the elements of your project/problem will become very lively and represent themselves in your dreams in one way or another. You will be able to remember everything about these dreams once they are over. If you understand what I have just said, please nod your head (if S failed to nod, the instructions were repeated). I will now count backward from five to one. When I reach the count of one, you will be fully awake."

Once awakened, S was informed that E1 would telephone precisely one week from the date of the session for a brief follow-up interview.

If, however, S completed the two imagery tasks, E1 then stated the following instructions:

"Now I would like you to picture in your mind's eye all the elements of _____ (project/problem was referred to by name: for example, 'your M.A. thesis' or 'the magazine article'). When you see all of these in your mind's eye, raise your right hand about six inches to let me know."

Once the hand was raised, S was asked to describe what he or she saw. These descriptions were recorded on tape. E1 then stated, "Now drop your hand (or 'nod your head' if S had already dropped the hand) when these things disappear from your mind's eye."

Following S's indication, E1 stated the following instructions:

"Even though you cannot see these elements any longer, they are still very alive in the back of your mind, out of sight. In fact, they have a life of their own where you can't see them and when I count to three they will cause a dream or dream-like experience to come into your mind's eye. Please raise your right hand when this dream or dream-like experience ends. If you understand what I have just said, please nod your head (if S failed to nod, the instructions were repeated verbatim). Ok, I will now begin to count. One . . . two . . . three."

If S did not raise his or her hand within two minutes, E1 stated, "I am going to count and by the count of ten your dream will come to some conclusion. One . . . two . . . three . . . four . . . five . . . six . . . seven . . . eight . . . nine . . . ten."

S was then asked to describe his or her dream. Once again, these reports were recorded on tape. Following the dream report, one minute was taken to rest. E1 then stated, "Now the elements of _____ will once again come into your mind's eye. When you see all of these in your mind's eye . . ." The instructions were repeated twice, giving S a total of three dreams or dream-like experiences. Once the final dream report was recorded, S was given the identical post-hypnotic suggestion described previously and then formally awakened. Once awakened, S was informed that E1

would telephone precisely one week from the date of the session for a brief follow-up interview.

Group 2.

After the Human Subject Consent Form had been signed, E2 stated to S the following:

"We feel that the many theories presently linking creativity to abstract or free-form thinking do not stand up when actually tested. Rather, it is our belief that one's ability to be creative is often stifled to varying degrees by more or less irrational elements which creep into our everyday thoughts. No matter how much we are concentrating on a task, trying to be completely logical in our approach, various distracting thoughts can subtly interfere with our work. Unfortunately, consultation on a problem is almost always done with persons who unwittingly interfere with the purely rational thinking process due to the emotional impact they have on us. Thus, we consult with superiors we are trying to impress, with co-workers with whom we are competing, with spouses we love or hate, etc. In addition, this consultation often occurs in distracting settings such as bars, homes, or noisy offices.

"Here in the lab we have a setting with minimal distractions. My job will be to act as a relatively neutral person who will try to focus your thinking in a logical, orderly way. I would like you to tell me everything about your project/problem from its beginning to the present. I will ask questions about your approach as we proceed and

I will point out occasions on which distracting elements appear to be interfering. You will be asked to justify or explain the rationale behind decisions you made regarding your project/problem. Your job is to reconsider all the elements of your project/problem as you verbalize them to me. Assume that I am completely naive about your area of study/occupation. That is, begin describing your project/problem at its most basic levels. Our time limit is one hour although it may not be necessary to use the full sixty minutes."

E2 was thoroughly trained in a number of mock interviews to follow two basic rules regarding the treatment. The first rule was to never allow the topic of conversation to stray from the project or problem at hand. The second, and most important rule was to never suggest possible solutions or problem-solving approaches, either directly or indirectly through subtle questioning or intimation. Once the interview was completed, S was informed that E2 would telephone precisely one week from the date of the session for a brief follow-up interview.

Group 3.

After both forms were signed, E1/E2 stated to S the following:

"We are using several methods in our attempts to enhance creativity. However, before actually employing any of these methods, we would like to get to know you better. That is the purpose of this session. I would like you to

tell me about yourself--your family background, what brought you to MSU, your likes and dislikes, etc. We will tape this session and during the next week the tape will be analyzed to determine which, if any, of the methods will be used. I say 'if any' because it is not unusual for some people to complete their projects or to solve their problems during the week following this session. Once the tape has been analyzed, it will be destroyed."

E1/E2 then conducted an interview covering any "background" material permitted by S, making sure to exclude any discussion relating to the project or problem brought in for consideration. The interview was not to exceed sixty minutes. Upon its conclusion, S was informed that E1/E2 would telephone precisely one week from the date of the session for a brief follow-up interview.

Those subjects in group three who were still at an impasse at the time of the follow-up interview were rescheduled for appointments as soon as possible. The sub-group seen by E1 was administered the identical treatment given Ss in group one while the sub-group seen by E2 was administered the identical treatment given Ss in group two.

Follow-up:

Ss in each of the three groups were telephoned one week following any given treatment session. At that time, an inquiry according to the following interview schedule was conducted:

What is the current status of your project/problem?_____

_____

(If S was still at an impasse, he or she was thanked for participating and the interview was terminated. If S reported a change in status, the interview proceeded).

What solution did you implement to overcome the impasse?____

_____

How did you arrive at this solution?_____

_____

Are you satisfied with your solution as it now stands?_____

_____

Have you had any outside assessment of your solution (grade, critique, etc.)?_____ If so, please elaborate

_____

Scoring:

The treatment was scored "successful" if at the time of the follow-up interview, S met three criteria. First, a change in the status of the project or problem must have been reported. Second, S must have been able to describe the solution implemented to overcome the impasse. Third, S must have been satisfied with the solution as it stood. Failure to meet any one of the three criteria rendered the scoring of the treatment to "not successful."

RESULTS

Of the twenty-four Ss who participated in the study, the treatment was scored successful for six of the eight in the dream group, for one of the eight in the rational group, and for none of the eight in the control group. A Kruskal-Wallis one-way analysis of variance by ranks (Siegel, 1956) was computed, yielding the following results:

Table 1. Kruskal-Wallis one-way analysis of variance by ranks of scores of three groups of subjects under different experimental conditions

Group Data			
Group	n	ΣRj^2	df = 2 H = 7.44
Hypnotic Dream	8	20736	Total Correction for Ties = .68
Rational/Cognitive	8	7056	H Corrected for Ties = 10.94*
Control	8	5184	

*$p < .01$

With the finding that the above results were significant, a one-way analysis of variance by ranks was computed for the rational and control groups, yielding the following results:

Table 2. Kruskal-Wallis one-way analysis of variance by ranks of scores of two groups of subjects under different experimental conditions.

Group Data			
Group	n	ΣRj^2	df = 1 H = -4.6
Rational/Cognitive	8	5184	Total Correction for Ties = .18
Control	8	4096	H Corrected for Ties = -25.55

Thus, it was determined that only the differences between the dream group and the rational and control groups contributed significantly to the over-all H, as the difference between the rational and control groups did not reach statistical significance.

Since none of the eight Ss in the control group were scored successful, each of them participated in an additional treatment session. Of the four Ss in the control group who were first seen by E1 for the control treatment (denoted Group 3-E1), three were scored successful upon subsequently undergoing the dream group treatment. In order to assess the effect of control group participation on the outcome of the hypnotic dream treatment, a one-way analysis of variance by ranks for the dream group and the E1 control group was computed, yielding the following results:

Table 3. Kruskal-Wallis one-way analysis of variance by ranks of scores of two groups of subjects under different experimental conditions.

Group Data			
Group	n	ΣRj^2	df = 1 H = 0.00
Hypnotic Dream	8	2704	Total Correction for Ties = .57
El Control	4	676	H Corrected for Ties = 0.00

These results indicate that prior exposure to the control treatment did not affect the outcome of subsequent participation in the hypnotic dream treatment, as there was no significant difference between the two groups.

Of the four Ss in the control group who were first seen by E2 for the control treatment (denoted Group 3-E2), none were scored successful upon subsequently undergoing the rational group treatment. In order to assess the effect of control group participation on the outcome of the rational/cognitive treatment, a one-way analysis of variance by ranks for the rational group and the E2 control group was computed, yielding the following results:

Table 4. Kruskal-Wallis one-way analysis of variance by ranks of scores of two groups of subjects under different experimental conditions.

Group Data			
Group	n	ΣRj^2	df = 1 H = .12
Rational/Cognitive	8	2916	Total Correction for Ties = .23
E2 Control	4	576	H Corrected for Ties = .52

These results indicate that prior exposure to the control treatment did not affect the outcome of subsequent participation in the rational/cognitive treatment, as there was no significant difference between the two groups.

Given the results computed in Tables 3 and 4, the scores of Ss in the E1 control group were combined with the scores of Ss in the dream group while the scores of Ss in the E2 control group were combined with the scores of Ss in the rational group. Thus, of the twelve Ss now included in the dream group, the treatment was scored successful for nine. Of the twelve Ss now included in the rational group, the treatment was scored successful for one. A final one-way analysis of variance by ranks was computed for the two expanded groups, yielding the following results:

Table 5. Kruskal-Wallis one-way analysis of variance by ranks of scores of two groups of subjects under different experimental conditions.

Group Data			
Group	n	ΣRj^2	df = 1 H = 7.68
Hypnotic Dream	12	39204	Total Correction for Ties = .73
Rational/Cognitive	12	10404	H Corrected for Ties = 10.52*

*$p < .01$

These results (which narrowly missed reaching significance at the .001 level), in addition to the preceding computations, are measures which must be considered in conjunction with non-scorable data in order to gain a greater perspective on this study.

Of the twenty-four Ss, fifteen were females, nine were males. The breakdown by groups was as follows:

Group 1. Four females, four males;

Group 2. Five females, three males;

Group 3-E1. Three females, one male;

Group 3-E2. Three females, one male.

Several other Ss who were to participate in the study cancelled their appointments. Some of them called, indicating that they had suddenly solved their problems or completed their projects. Others called to withdraw because of a lack of time, even though at this point they were aware that their participation would consume little

more than one hour. In addition, one S appeared for his appointment momentarily before suddenly leaving without explanation.

The twenty-four Ss who did participate, however, brought in a variety of problems and projects which covered a number of academic, vocational, avocational, and personal concerns. Among the areas represented were the expression of art through poetry, the expression of art through music, the expression of art through painting, a problem in the measurement of a physiological function, the development and organization of theses and dissertations, problems in the organization and expression of prose for magazine and newspaper articles, interpersonal problems involved in marriage, and intrapsychic conflicts.

Among the nine solutions generated by Ss administered the hypnotic dream treatment, there was considerable individual variation as to which aspects of the treatment were reported to have been responsible for success scores. Six of the nine Ss attributed the resolutions of their problems directly to the dream material produced during the treatment session. Two Ss reported that the combination of dream material produced during the treatment session and material arising from subsequent nocturnal dreams was responsible. These two Ss, incidentally, were the only ones who reported experiencing nocturnal dreams which they were able to remember during the week following the treatment session. Finally, one S reported that the change in the

visual representation of the elements of her problem which occurred during the treatment session led her to a successful resolution.

Of the three Ss administered the hypnotic dream treatment who were not scored successful, two requested transcripts of the recordings made during the treatment session. Both expressed the feeling that they would like to be able to utilize this information which they found difficult to retain. One of these Ss was very close to a resolution at the time of the follow-up interview, having developed two alternatives over which he had not yet made a decision. The other S has been recently delivered his transcript with the agreement that he will report any change in the status of his project. This transcript, as well as the tape transcripts of all other Ss administered the hypnotic dream treatment are contained in Appendix A.

The third S receiving the hypnotic dream treatment who was not scored successful, reported that the material produced during the treatment session was enabling her to overcome an impasse reached in the course of writing poetry until she began experiencing nightmares of unspecified content mid-way through the week following the session. This, she reported, reinstated the impasse, the net result being no change in the status of her problem.

Finally, with regards to Ss administered the hypnotic dream treatment, it was noted that ten of the twelve spontaneously expressed enthusiasm over having undergone

the experience prior to leaving the treatment session. Three of these Ss seemed reluctant to leave, wishing instead to discuss their experiences with E1. One of the ten "enthusiastic" Ss reported at the time of the follow-up interview that he had purchased "Tubular Bells" and had proceeded to hypnotize himself every night following the date of the treatment session in order to enable himself to vividly recapture the imagery he had produced.

Enthusiasm was not restricted to the hypnotic dream treatment, however. E2 noted that eleven of the twelve Ss administered the rational/cognitive treatment expressed some form of unsolicited enthusiasm regarding the experience prior to leaving the treatment session.

Also of interest was the finding that of the eleven Ss administered the rational/cognitive treatment who were not scored successful, five reported at the time of the follow-up interview that they had generated solutions. These could not be scored successful, however, because they were identified either as temporary measures which S acknowledged as needing to be altered or replaced altogether in time or, in one case, as something which seemed insightful at the time of the treatment session but which turned out to be not wholly satisfactory in practice.

In concluding, it should be noted with regards to all Ss who participated in this study that the amount of time spent working on the individual problems or projects prior to the initial contact with E1 ranged from one week

to several years. As yet, no discernible pattern linking this factor to the outcome of either treatment has been identified. Additionally, it should be noted that in no case was the imposition of an impending deadline by some outside source a factor which might account for the resolution of a project or problem.

DISCUSSION

In our analysis of the results, two main points for consideration emerge. One of these, central to our theoretical formulation, involves a discussion of the factors which made the hypnotic dream treatment more effective than the rational/cognitive treatment. The effort to provide a thorough examination raises a more immediate issue. Was the outcome measure, and the procedure used to gather the data, a valid assessment of the effectiveness of the two treatments? Keeping in mind the exploratory nature of this study, the answer seems to be yes.

Of the three criteria for scoring success, the second--the implementation of the solution--helps to offset reports of success motivated by a need to please the experimenter. Subjects could not be scored successful merely by saying that they were unstuck. Even so, an alternative explanation is that E1 was more enthusiastic or somehow more effective in developing a strong positive transference in his Ss than was E2, despite the fact that E2 was incorporated into the experimental design to offset this possibility. The effectiveness of our second criterion notwithstanding, E2's "ability" to nurture the development of positive

transference in the rational group Ss is documented by the unsolicited enthusiasm of eleven of the twelve Ss.

Nonetheless, it should be recognized that potential demand characteristics may not be fully accounted for due to the fact that follow-up interviews were conducted by co-experimenters invested in the treatment outcome. It is recommended that future research in this area employ a double blind procedure for the purposes of data collection.

Still, the multiple criteria for success enabled us to observe possible differences in the potency of the two treatments. That is, five temporary resolutions to problems or projects were generated by the rational group Ss which, while not scored successful, may be considered indicative of the relative ineffectiveness of the rational/cognitive treatment.

Whether or not the permanent solutions generated were themselves creative raises the difficult task of defining and assessing creativity. At this stage in our explorations we are content to take note of outside evaluations by appropriate experts if and when they become available and compare the groups in terms of positive outcomes. Lest the potential significance of outside evaluation be overestimated, however, it should be pointed out that many examples of creativity which we now take for granted were initially viewed as creative only by their creators. A good recent example is the system which the United States has used to land men on the moon. The concept of an

orbiting space capsule from which a lunar module was launched for a landing on the moon and subsequent rendezvous in space was ridiculed for years at N.A.S.A. before it was finally adopted and put into dramatically effective use.

While an assessment of the worth of permanent solutions generated in this study is not considered crucial, the need to operationalize creativity has become increasingly evident over the course of our research. As a result, our original theoretical formulations have been found to be inadequate to the task of conceptualizing creativity. Consequently, we have expanded our initial theoretical conceptualization with a more critical eye directed toward the definition of creativity as follows.

Creativity is a descriptive term which may be operationally defined as the formulation or development of either a tangible or intangible product (thoughts, musical expression, for example) which is both novel in the context of a given individual's or group's frame of reference and which satisfies the needs of the individual or group which demand innovation. That is, the creative product is not the result of simple memory retrieval. Nor is it the result of applying a learned set of operations, principles, or behaviors to a task or situation, as in the case of multiplying multi-digit numbers once the multiplication tables have been learned.

Individual or group needs which are met through innovation range from the highly idiosyncratic at the one

extreme to universal at the other extreme. This presupposes the fact that previously encoded information and experience on the individual or group level is insufficient to the task of meeting those needs, insofar as creativity involves the synthesis of said information and experience into new integrations. The need may be relatively simple and reactive as is the need of a beleaguered mother to invent new forms of amusement for her nagging children on a rainy day when all of the "old tricks" have failed. On the other hand, the need may be relatively complex and goal oriented as is the need for achievement in a chemist striving to create another man-made element.

Once individual and group needs have been taken into consideration it becomes unnecessary to seek out exceptional persons for the study of creativity. We do not conceptualize creativity in terms of productivity which receives outside acclaim. Rather, we choose to view it primarily in terms of the transformational qualities of two major mental functions which seem to mediate creative phenomena in virtually every individual. That is, the synthesizing process involved in creativity may be conceptualized as the confluence of verbal cognition and visual imagery. While both have a transformational function, Paivio (1971, in Singer, 1974, p. 177) notes,

> Visual imagery, when readily generated may be more effective than verbal mediation because the information in the image is spatially organized permitting a rapid read-out of the relevant components, whereas the information in

> verbal storage is sequentially organized as a string of 'mental words' that may take up more space in memory, or require longer search time with less efficient retrieval of the relevant response during recall, or both. In addition, a symbolic motor component may contribute to the transformational efficiency of mediating imagery. Where both systems are relevant to the task, however, they presumably interact continually in their mediational functioning, and imagery mnemonics may be especially effective because they enhance the probability that both symbolic systems will be brought into play in the . . . task.

It is the complexity of the task which seems to dictate the generation of visual imagery. Once again, complexity must be considered in the context of each individual's given frame of reference. In acts of what might be called simple creativity, verbal mediation predominates as it is sufficient to the task at hand. The synthesis required in simple creativity involves a transformation which might be considered only a minor departure from previously encoded information and experience. The presence of visual imagery here is likely to be subliminal.

Once verbal mediation no longer serves an optimal or sufficient transformational function in creativity, the role of visual imagery may increase such that it may even predominate, as in the case of an adaptive regression. Kekulé's dream, cited in the introduction, exemplifies this phenomenon.

With this in mind, it is intriguing to recall the details of the three studies cited in the introduction

which demonstrated some degree of enhanced creativity. It will be remembered that Krippner (1969) reported that LSD, an hallucinogenic drug, enabled a navy captain to solve a problem in pattern recognition. Harman et al. (1969) found that mescaline, another hallucinogen, facilitated creative problem solving. Additionally, subjective reports of the mescaline experience documented evidence of increased visual imagery and fantasy. Gur and Reyher (in press) demonstrated enhanced creativity on the Figural portion of the Torrance Test of Creativity when visual imagery was used both as the mode of representation for the elements of tasks and as the mode of response for those same tasks.

In the present study, each S was at an impasse in problem solving after having failed to mediate successfully his problem in his own way. In the context of each S's frame of reference, their respective tasks may be considered complex insofar as creative solutions were not readily available. Ss in the rational/cognitive group were instructed to mediate their problems verbally. Any departures from these instructions were discouraged by E2. As a result, eleven of the twelve Ss were unable to overcome their impasse.

On the other hand, Ss in the hypnotic dream group were instructed to mediate their problems visually. This was accomplished in two phases. Ss were first instructed to represent the elements of their problems visually in their mind's eye. An inspection of the hypnotic dream

transcripts (Appendix A) reveals that in many cases, this procedure alone had a transformational function. As such, the visual representation of the elements of problems may be considered to be imagery mnemonics which, as Paivio notes, enhance the probability that both visual and verbal symbolic systems will be brought into play in the task.

In the second phase of the treatment, the imagery mnemonics were used as the stimulus for hypnotic dreams. Another inspection of the dream transcripts reveals that while most of the images generated during the first phase were relatively static, virtually all of the imagery produced in the dreams was more dynamic. As Paivio has indicated, a symbolic motor component may contribute to the transformational efficiency of mediating imagery. In this light, the transformational efficiency of dreams may prove to be superior to other forms of mediating imagery because of "built in" motor components associated with the mechanisms of the dream-work. Thus, because of its transformational function, our original hypothesis concerning primary process representation remains an integral part of our theoretical conceptualization of creativity.

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APPENDICES

APPENDIX A

VERBATIM TRANSCRIPTS OF SUBJECTS IN THE HYPNOTIC DREAM TREATMENT

APPENDIX A

S1

Background Summary: S1 was a 20 year old female undergraduate who was writing a poem which she hoped to eventually submit as part of a senior honors project. Her impasse concerned an inability to develop an image for the concept that the poem was supposed to embody.

At the time of the follow up interview, S1 had decided to write the poem in the form of an ode. Based upon the images produced during the treatment session, she elected to separate the poem's concepts, beauty and faith. One hour following the treatment session, S1 concluded that the images were "substantial." She then proceeded to write several stanzas, feeling "quite satisfied" with their form and content. The treatment was scored successful.

Dream 1

The Elements: Tape did not record.

The Dream: There's a girl in front of a window that's spattered with spring rain and she desires to reach for some blossoms knowing the task is impossible. In fact, she's inflicting upon herself pain purposely but all the while knowing her pain will lift her to heights. So she plunges her hand through the glass and the silver glove is placed on the hand by a black man. But this man, he is of flesh. He is, he is . . . onyx . . . black onyx? And I saw the man

that put the glove on (laugh). So the girl grasps the trunk of the blossom tree with her gloved hands while this onyx man watches from a, no . . . a hillside constructed over revolving suns? It's no good, it's too myriad. It should be one. It shouldn't be revolving suns. It oughta be, oh . . . (sigh) the uh . . . there's a flower, this large golden flower that's swallowing up the sun which is the sun itself. But somehow the sun has dropped into itself of the image of itself on earth. But the image is the golden flower swallowing the sun and the sun goes through the stem of the flower to the roots, into the earth and disperses itself. And uh . . . and uh it rises but the form, it rises and is the form of an arc with of course the slope underground but I don't like these two pillars sticking up with the source, with the arc underground. That's no good at all. Well then I guess the arc could be like uprighted and the earth would be convulsed rather but not disturbed. It would hardly be shaken, the earth is hardly shaken by the uprighting of this arc. This arc, this arc is my heart. Except it's golden.

Dream 2

The Elements: I, it recalled to mind a painting I had done of this silver structure that I've been sort of like stringing together with my hands. And beside it there's the virgin and she has . . . I don't want to get into the painting, she . . . she has constructed this structure, the virgin

has. And it's piled one on top of the other but it's very very haphazard and it's no good image, no good image (S's eyes pop open and El asks her to close them. S does so with a short laugh).

The Dream: There, there is a girl which is myself with braceleted arms laying on a marble floor. It's very cold and white. And she's in draperies. Silk, Persian. And these gentlemen enter. She knows not who they are. She knows not who they are (almost sung). (Laugh). They're neither armed nor decorated in any recognizable sense. And these men conduct her to a boat which is wooden and has a very plain prow and no figurehead. No sails, but a mast. And she's taken, or she rises and then finds herself in a throne room facing the father god of resurrection who pushes the sun down through her shoulders. And it expands within her and is released, if you'll excuse me, in urine. Now I realize the disparity of an image like that. That's all.

Dream 3

The Elements: It was a girl with a two-handled pitcher. Yet it's very small, it's clay. And she, it changed from what I saw, she raised it to see what was in it thinking she could see through it. But water spilled upon her, or so she thought. But instead it turns out to be another transformation. And she looks very very pre-Raphaelistic. She's very white and she has this armor on. She is a goddess Amazon but not Diana. She is, she is Rossetti's

Elizabeth Sittle (sp.?), or Ruth Morris--May Morris. That is who she is. She's May Morris. Berne Jones. For some reason I'm recalling painters, I mean by name. I know them all the time but I don't know why I'm thinking of Berne Jones (sp.?). Well, this armored woman is emerging from water and she is stepping upon these grasses. The water beneath them is like, uh . . . (laugh) is like, is like . . . it's like a gem. But it is like a gem that's not created, that, oh, that . . . that's fallen from the virgin's eyes, the main idol. (Laugh).

The Dream: Well, the dream was a memory of a boat my parents had. A cabin cruiser with a fly bridge, on the Chesapeake Bay. And I saw no connection whatsoever with that and the virgin. And I supposed that it was an ancient link, if I have to be poetic (laugh). It's a link. And uh why . . . it was the mention of the marsh and the grass. I tried so hard to get the image of what the water looked like under these stalks strands of grass. And all I came up with was this stupid boat plowing through the water and me on top of the fly bridge.

S3

Background Summary: S3 was a 35 year old female graduate fellow whose academic career was being jeopardized by the circumstances surrounding her marriage. Prior to the treatment session, she viewed her only alternatives as remaining married and giving up her degree or getting divorced and continuing her career. She wished to explore alternatives.

At the time of the follow-up interview S3 had worked out a contract with her husband which she felt was only made possible by her acknowledgement that she was largely responsible for her marital problems, something which she had previously denied. This was made clear to her by the reduction of the visual elements of her problem to only herself by the third dream of the treatment session. S3 reported that she "no longer feels weighted down" and that she feels "happier." The treatment was scored successful.

Dream 1

The Elements: I see my husband, my children, myself, the future, time, and my mother--but she doesn't belong there.
The Dream: I didn't want to do it. It was very frightening because it was a terrible white storm. There was no control over the storm. (S now sobbing). I could see a calm ahead, and the dream ended before you said count to ten.

Dream 2

The Elements: I see my children, their future, and myself.

The Dream: I don't understand. There's constant movement. Big puffy clouds, big white ones. No people. A real sense of elevation. There's nothing more.

Dream 3

The Elements: I see only myself.

The Dream: First there were transparent triangles. And then there were pyramids, and grass. Then I was walking around with _____ (mumbled). Now I was alone and then I was what? There were buildings and I didn't know which one to go in. And it's sunny. Warm. And I don't know which one to go in.

S4

Background Summary: S4 was a 30 year old male graduate student who was developing an archaeological test of a socio-psychological theory for his dissertation. His impasse concerned the actual design and size of the project which had been stagnating for two years. Mainly, he wished to cut down its original size while keeping it within his own standards of professionalism.

At the time of the follow-up interview, S4 was "seriously" considering eliminating the Mayan subculture from his original list of three subcultures which he wished to test with the instrument he was developing. He credited the imagery produced during the treatment session with stimulating this consideration. As S4 had not yet actually made a decision, however, the treatment was scored not successful. S4 requested a transcript of the treatment session, but left the country for the summer before one could be delivered.

Dream 1

The Elements: I see a frieze, like at Mitla which is stylized with Grecian friezes. And even though there are few of them, the feeling of constant repetition is almost physically present. It almost stands out beyond the masonry. And it seems to represent an element of . . . of sameness, of repetition and of a lack of breaking away or a lack of being different. At the same time I can see Engleman, whose theory on testing almost . . . I can see him as a person,

his features and his full figure. Um, and I can't tell whether this is, whether these are floating images just separate or the same and that he represents, or that this is or that the Mitla frieze is an expression of . . . whether this will break, or this will be adequate to prove that the theory is, whether the information from Mitla is adequate to test the theory, or whether other sites are necessary. This is, I only see the one frieze which is only one of the three culture areas I'm using. And I don't know that that means this is the critical one. Anyway, that's what I see and, and Engleman.

The Dream: It was a stelle at Corigua with um, there was no color on it. It was as it is depicted in books or as it actually is now without all the elaborations and paintings and paint that was originally on it when it was in ethnographic use. It merely had all the multitude of curvilinear, heavily filled spaces typical of a highly active, earth oriented culture. It's, as far as I could tell, it's the way I would think of it in a conscious attempt, or as in fact it probably is. It was just the stelle, nothing else.

Dream 2

The Elements: The field was fused with red, like from the Pompei murals. On the left is a particular ceramic face which I've seen before but I can't place, with an elaborate headdress. It's Mayan, face in the headdress, the specific

figure. And the headdress has in a few places some green paint staying on. And the headdress has the, again it is in the image or the pottery figure, waving fronds that curve up. The head is on the left hand side of the field facing to the right. The fronds are leaning over at an angle perhaps thirty degrees off the vertical. And the fronds are tilting apparently sort of arbitrarily off to the back and off to the front as the peeling off of the main, what looks a stem or a stalk as it leans forward. But the head itself is erect. And then in front, facing me, extending at the base, extending the full length of the field and running even to the tip of the face, of the head is the skeleton of a Texas longhorn. The horns are an ivory white and they extend with the, barely tipping it, barely curving up at each end, otherwise being quite straight. And then in the front is a nondescript grayish white skeleton of just the face or just the head of the cow.

The Dream: From the left, from my left ear far far away came a sound like ocean roaring but without the constant beating. It was a swelling roar. Again, very quiet, far off. But there was no beating, no coming again and again the way the surf does. It was just the far off sound of the ocean roaring. But then, was it maybe cheering, no closer but it almost sounded as if first here then there distinct voices coming out of the mass roar. And as it changed perhaps into voices I saw a lentil spread above two pillars. The pillars and the lentil were a light gray stone. The

pillars were four maybe five times as tall as wide the space in between. The width was almost as far across as the height of each pillar. Now the pillars were not exactly symmetrical, closely shaped, close to rectangular in shape but at least the one as I faced it on the left was, it's outer side canted in a bit. The lentil was much thinner, a slab extending just barely beyond the edges of the two pillars. And then as I watched I thought, is this Mysia? And with that thought, animal figure or figures appeared at the top like at Mysia and seemed to rise up. But it didn't, or stretch up, but it didn't leave. It was like a flame, but an unmoving flame. There was no flickering but rising and staying where it was, in the shape of a funnel or triangle. A cone with a base at the bottom. And between the pillars the inside grew blacker and darker until all there was was the black and it was over. And towards the end the sound had been lost. Perhaps the sound disappeared about the time I asked the question.

Dream 3

The Elements: In the shape of an Indian inkwell but with the part held by the hand much elongated, there's a figure which has a black with no shine to it, like the black of cast iron. But the figure is like the image of the goblet or the two faces. It keeps going in and out with figure of a vaulted arch where instead of a nondescript background around the inkwell figure, the white is the facing of the building

forming the arch. It's a Catherwood painting, or rather it's the subject of a Catherwood painting. This very, very steep vaulted arch. That's all there is.

The Dream: Starting about the middle half of my right side, sweeping over from a line moving on the bottom, but a connected line touching the front of the lower line, sweeps up like the top half of a barb, sweeps up and over and moves across over to the end of the right side of the field and off the field. I can feel myself being pulled. There's so much force, so much pressure, no, force, pulling as if the chair's tilted or there's a magnet pulling my head. Then, another wave. This one concave, sweeps, swept across with the top catching up with the lower part and then actually crossing out of the field first. It's not exactly lines. The lines are more divisions between tones of gray and other grays. And then another and another and there are slight tone variations vertically that almost appear like waves or ripples. And then I was worried, how can I count, how can I remember how many? Then the waves, the lines that were coming over, convex lines, give way or become a crew team working in unison, again from left to right but this time starting almost from the full left end of my field of vision and going rapidly across. And then going the other way, not necessarily rowing differently, but going in the opposite direction, almost coming out or coming from, emerging in existence from the other one is a crew team going the other way. And then a number more, I don't know

how many. And then there are present crew teams in two difference lanes. It's like traffic going. The ones on the lower half going to the left, the ones in the upper half going to the right. The crews are probably real but the distance, the resolution is too poor to see any colors, sex, or any characteristics other than they're human. And then it fades.

S7

Background Summary: S7 was a 21 year old female undergraduate who had been playing the guitar for a little more than two months. While she was able to read music, she found herself incapable of improvising, particularly bluegrass music which was her favorite.

At the time of the follow-up interview, S7 reported "lots of improvement" which was corroborated by her husband whom she characterized as an accomplished bluegrass banjo player. She attributed her success to "relaxing while playing" which was facilitated by the constant repetition of the words she heard in the third dream of the treatment session. The treatment was scored successful.

Dream 1

The Elements: I see the fingerboards on the guitar and I just see, I don't know what it is. I don't see how they play.

The Dream: I just dreamed that a friend of mine was trying to play the guitar and then he had to leave. It was just, he had to go. And he just left.

Dream 2

The Elements: I feel that I can carry the tune of a song but I just can't fill in the notes.

The Dream: I didn't have a dream.

Dream 3

The Elements: Well I can't arrange a song like the way I want it to sound. Like the way I hear it.

The Dream: I didn't really have a dream. I just keep hearing the words to a song over and over. "I got a peaceful easy feeling" and something about I won't tie you down. Something like that.

S9

Background Summary: S9 was a 24 year old female undergraduate whose problem concerned her propensity for starting projects but finding herself unable to complete them. She wished to overcome what she described as a "mental block" so that she would be able to at least complete one overdue project in environmental design.

At the time of the follow-up interview, S9 reported that she had wrapped up the overdue environmental design project and was wrapping up a project involving the painting of wall graphics which had been avoided for over one year. She found herself now unable to put down these projects once she started them. S9 credited this to the imagery she produced during the treatment session which she took to her psychotherapist. There, she and her therapist "really hashed it out," with S9 discovering that she has unconsciously felt that she must assume responsibility for her mother, or she will die. Consequently, she overloaded herself with extra responsibility (projects) but found herself unable to cope with the burden. She then would become disinterested in her projects and add on even more projects to ease the guilt over not having completed her previous work. At the time of the follow-up interview, S9 was paring down her list of projects to those which were relevant to herself, eliminating those which served mainly to sustain a neurotic conflict. The treatment was scored successful.

Dream 1

The Elements: The little girl who wanted and needed those things and always wanted something to do was always told to go play by yourself and you really don't need those things. Is that valid? She feels angry but she won't complete anything she starts 'cause she wants to punish them by not giving her what she wanted.

The Dream: It first starts out, um, with a series of different shapes, very large shapes composed of different kinds of materials. And a little infant is crawling through the semi-circles and triangles and very strange types of shapes and is happily playing through them except there seems to be that it's leading nowhere. There's no end, there's no beginning, there's just the constant crawling through shapes. The shapes then leave the ground and they're floating up in the clouds. And most of them seem to be circles now. There's no beginning, there's no end. They just go round and round. And there, not only an infant but a form that is crawling through the shapes in a very consistent kind of way, like forming a chain. And it becomes more and more involved and more tangled up in the circles and at a point it's like it's trapped because it's all wound up in these circles that it's been entwining through. And it's up above the clouds and it's very peaceful up there, very quiet. And there's sunshine and white clouds below and it's a very light feeling. But it's trapped in the circles and it's struggling to get out.

Dream 2

The Elements: It's a question of simplicity versus complexity. Simplicity holds no value, it gains no recognition. Simplicity is a waste of my time. The more elements that are involved the better. Take on the impossible. There's always those words of you can do it. And then sometimes I don't want to. I feel that I must. And I feel very heavy. Very very heavy.

The Dream: I am a musical note. I'm an eighth note. Nothing special, just an eighth note. The eighth note is trying sit high, love. It's sitting on a page of music. But it cannot sit long enough. It continues to move around. The player tries to play the eighth note but it's very impossible. The eighth note is so heavy it falls off the page. The eighth note then stumbles on the stage and is feeling safe. It is dancing and enjoying itself. It becomes animated. It spreads legs and arms. And it's pretty spontaneous and it's dancing. It tried to fly through the air but all of a sudden it becomes much too heavy. And it falls. It crushes into a wall. The eighth note then tries other things. They're not well defined. But it's no longer in it's own environment. Seems to be very diminutive now, but very heavy. And, uh, it seems to have a lack of spontaneity. Rather that of mechanical precision because it was trained to be a note. That's all.

Dream 3

The Elements: It's far more fun to conceive the problem that it is to execute it. There's a fear of execution. But one must not be as capable of perfecting it as the concept. It's a fear of the actual doing. Not being capable of doing it. Also things move far too slowly. It's painful, it's very painful to sit with a project. There's so little gained by completing it. It moves far too slowly. One becomes involved with the microcosm of one square inch and painstaking hours are spent with the one square inch that really has no long range humanitarian benefit. It's so irrelevant, insignificant, and difficult.

The Dream: There are many duplicate images of me, but one of which is hanging from a noose from a very tall ceiling. And I'm just about ready to die from hanging myself. But all these duplicate images of me are standing on top of one another on their shoulders all the way to reach me at the top to try to hold me up so that I don't choke. And there must be eight or ten of them standing on top of one another. And the load is very heavy and it's very precarious and the whole load of bodies is swinging back and forth slightly almost ready to fall over. But they have to hold up the top of me which is just about ready to hang. And I was ready to die.

S10

Background Summary: S10 was a 27 year old male free-lance writer, professional chess player, and film maker who had done extensive research for a magazine article on a local art store but found himself unable to develop a suitable form of expression for the article.

At the time of the follow-up interview, S10 reported that the article was virtually completed. He chose to adopt the format of taking the reader on a tour of the store which he credits directly to images produced during the third dream of the treatment session. Immediately following the session, S10 went home and wrote a rough draft of the article which he found to be satisfactory. The treatment was scored successful.

Dream 1

The Elements: Uh . . . just a vast plain. It's lit almost like sunset. But it's not a sun out there. It's a very very great disc, or half of a disc. And it's made of two parts. A very bright inner part that makes up about 90 percent of the disc. And a dark gap, then about the same brightness but uh, now it's all bright. The whole thing is bright. It's not like intense sunlight 'cause I can keep my eyes open to see it.

The Dream: I was back on a train. But it was light. This train was full. A lot of people. I can't, I couldn't describe them. Just a lot of people, friendly people.

And the train went through the tunnel and then another tunnel and another tunnel. And I found myself in darkness, just standing alone and waiting for something to happen. And looking around. And she started coming, the train slowly came by and I jumped up on the step, grabbed the hand railing and rode the train into the station. And it slowed and I jumped off the train and took a few rapid steps. The train never stopped, it just kept on going and I waved goodbye.

Dream 2

The Elements: I don't have words for it. It's just I feel something that I see. There's no description for it. It's, it feels, uh, large and warm. Uh, warmth. There's a lot of contrast. It's like a lot of things together, piled together. I just feel it there. I don't see anythings, just . . . well it's very large, very tall. There's some books piled upon each other. And it reaches up to the sky. They're all the same book.

The Dream: I didn't see anything. I felt the room and the chair. I felt, just inside a cocoon and something pushing on the right side of my face. And I heard the wind and just . . . felt (sigh) . . . suspended, floating.

Dream 3

The Elements: It's, it's hard to describe. It's like, um, piles of specifics. A large uh, a large pile of . . . hum, I don't know . . . I can't describe it. (long pause)

Well, it's three piles. The piles are all the elements of the article. One pile is already done. And a large pile of a lot of small bits and pieces. And a third smaller pile of little bits and pieces that are not, are kind of in the dark. They're not there yet. The bits and pieces are quotations and imagery of the store and little short sentences and paragraphs and descriptions.

The Dream: It's uh, I'm looking down Grand River from about Abbott Road to, um, toward the east. And I float up in a, like a balloon, like a glider. And just take a look towards campus and then look left toward the stores on Grand River. And, uh, just float toward the second floor window and float in the window. And through a room into the hallway just a little ways and then raise up and, and then be higher than the walls. It's like there's no ceiling. And down into the rooms where Sunshine Art Supply is located. It's like taking a walking tour except floating up above everything and looking at everything down below. And seeing Doris walk from the paint room to the weave room. Ernst sitting at the counter. And just taking a nice leisurely stroll along the hallway and just floating out down the stairs out onto Grand River.

S11

Background Summary: S11 was a 23 year old female undergraduate who was writing a poem about her mother. She had written only one stanza which she found to be "unsatisfactory." At the time of the treatment session, she had been unable to write anything beyond the stanza, stating that, "I have never had so much trouble with a poem before."

At the time of the follow-up interview, S11 had completed most of the poem. Three stanzas were written immediately following a dream on the third night after the treatment session. Additional verses were composed from the images produced during the treatment session which S11 weaved into the poem. She reported that the images from the session came into her mind's eye in "channels or tracks like a switching station at a railroad track." When the images were too hard to focus on, I just automatically discarded them and went on to another track. The other images were better ones."

The treatment was scored successful with S11 stating, "I'm really happy with the way it's shaping up." While she eventually sent me a copy of the poem, it is not included here as per her request.

Dream 1

The Elements: Mom's taking Dale to work. He needs a ride to work and she's giving up sort of part of her day to help him. And she's sewing stuff for my sister Jeanine and me. And she's washing clothes for everybody. That's a big

job, it keeps her busy. And she's taking me to work. She's going to visit us now and takes a bit of time in everything. She rarely says no. She's usually willing to come and help. And all these are just things I admire her for. She just, she isn't mad that she has to do them. She just likes to do them for us. She just accepts it. And that's sort of cool.

The Dream: Mom's baking Christmas cookies. We're all baking Christmas cookies. And she's at the sewing machine sewing pink, hot pink curtains. They're dotted swiss. She's putting on black boots to go out to the car to take Dale to work. He's early. And I, we're up at the cabin. It's the middle of summer. We have to leave to go home and go back to school.

Dream 2

The Elements: I see a white rose bush. It's outside in our yard and it's all covered with wild white roses. And a yellow, red rose bush. And everything I said before, everything she helped us with. And I see a car outside. Everyone knows she's coming over to visit us.

The Dream: There's this star. It's a big one and it's way up and it's very bright. And I see a shooting star and I see my mother looking at it. She's just enjoying the watch at it. And then when I see the star I see, I remember because she mentioned, she told me about seeing the shooting star. And then I see a fern. A green fern and a fawn. And

I see the fawn seeing the stars at night and I imagine the fawn sees them like we do.

Dream 3

The Elements: All I see is Mom standing by the rose bush.

The Dream: Mom's picking the roses, cutting them from the bush with the scissors and putting them in the basket. And turning to Jeanine and me. And then we walk off with them.

S14

Background Summary: S14 was a 22 year old unemployed female artist who found herself "artistically at a stalemate." She wished to apply to VISTA for a job doing graphics but found herself having "a problem with artistic expression" in the preparation of her portfolio.

At the time of the follow-up interview, S14 reported that she had discovered that her stalemate was self-imposed, reflecting a fear of failure. This was made clear to her by her fear of the images "observing" her in the treatment session. Since the session, she had found herself forcefully expressing herself in the preparation of her portfolio. She intended to apply "aggressively" for the VISTA position, noting that it was clear to her that she needed to put herself in a position to be judged. S14 also expressed satisfaction with the lifting of her stalemate and, consequently, with the developing quality of her work. The treatment was scored successful.

Dream 1

The Elements: I see a person. It's not clear. I see people leaning over me, in a way. Watching, you know.

The Dream: I don't know. There were just abstract forms. Faces that drift in and out. Across, you know, darkness really. It's not like anything clear at all.

Dream 2

The Elements: It's a tunnel that's triangular. And it breaks, and different forms come up. And there's a pendulum going back and forth. And that's it, it's not clear to me.

The Dream: They're just thoughts about when, you know, it's like when will I do it, you know. It's my mother saying, "When will I do it." You know, she's always there asking the question. And it's her face. She's not angry or anything. But I just see myself as being really frustrated, not being able to do it. And I don't know, it's just not clear.

Dream 3

The Elements: I just see parts of people's faces. Like an eye, a side view of an eye. Someone's mouth. Just part of their face, not the whole thing. And they come in and out.

The Dream: I didn't see anything. Nothing happened.

Background Summary: S17 was a 24 year old male pre-medical student who was highly interested in Jungian psychology. His impasse concerned an inability to bring the mandala, the symbol embodying the concept of the self, into consciousness. S17 wished to do this in order to help himself overcome conflicts which inhibited him from interacting comfortably with others. Prior to the treatment session, he had gone to a hypnotist seeking to overcome this problem but he was unable to be hypnotized at the time.

At the time of the follow-up interview, S17 reported that the mandala had taken "specific terms" which were in part generated during the treatment session. These included his images of the sun, the spaceship, and the spaceman with the umbilical cord which he found to be helpful in enabling him to feel more at ease around others during the week. This, he noted, was something which had not occurred before. S17 also reported a nocturnal dream which he credited with helping what he described as "my developing personality" to emerge. In this dream a voice said, "I'm just gonna stop forcing it. I'm just gonna go out and live." S17 then asked, "Who are you?" before he suddenly woke up, feeling that the dream was trying to direct him in specific ways which he found difficult to elaborate. He also reported that he had purchased "Tubular Bells" and was successfully hypnotizing himself each night in order to vividly recapture dream imagery. The treatment was scored successful.

Dream 1

The Elements: There's a circle. It's not quite a perfect circle. It's more like an egg. And within it is two jagged lines. They look like lightning but they're supposed to represent the spiral staircase of DNA. And outside the circle is a square. And diagonally are two swords pointing from right to left and from left to right coming from the top. And straight up and down is another sword.

The Dream: After the mandala left, it seemed to turn into a shield with just two swords, two crossed swords. And there seemed to be a kind of red, um, fire behind it like a sun setting on a horizon. And then there was an old building, an old room with a fireplace with fire in it. And a woman was peeping in through a door. Then there was a white horse and at first I thought the horse was on a hill. And then it seemed as though the horse was on the moon or another planet looking at the earth. Then the earth became the shield with the two crossed swords again. Then a spaceship appeared. And it took off and it just kept going and going and going. And it did a spiral. And then it dived into the sun and it seemed as though it wasn't completely swallowed up. The rocket engines could still be seen outside the sun. But the rest of the ship had disappeared. Then the whole thing disappeared.

Dream 2

The Elements: It was the shield again. This time there were no swords and the shield was more like a spear-point.

The top of it tapered up, so like at the top there were three points. One high point in the center and two lower points. And there was a circle inside with the lightning. And then the image of the shield seemed to reverberate out like there was one image inside of another image inside of another image. And they got progressively longer and smaller until the one with the earth in it . . . and the earth was with the lightning. Two parallel pieces of lightning. And the earth was divided. It was split in two.
The Dream: There was a reverberation of the earth. One inside of another so that it looks like waves of the earth. Images. And that turns into a picture of Stonehedge (sic) in England. And you're seeing it from the side. And then Stonehedge seems to turn on its side so it's a circle on something like a square piece of ground. Then there's the one who's all dressed up in royal robes and I thought for a moment that he was the pope. But I wasn't sure. He was just some royal person. And he knighted someone. And then there was a symbol of the peace symbol except for the prongs were made out of a, like a three-pronged pitchfork. There was a circle around it. Part of the pitchfork end was out of the circle. And then it disappeared.

Dream 3

The Elements: There's just a peace symbol made with the pitchfork like before. And it's the handle that's kind of like its axis. And it just keeps rotating, making circles. And that's it.

The Dream: There was a spaceship. And it just kept going and going. Then it passed by a planet. And it looked to see if there was any life on the planet. And a man came down with them, like an umbilicum (sic) cord attached to the ship and him. He was in a spaceship, spacesuit rather. And there were seen some steel beams. And so it proved that life had been on the planet. But it was totally devastated. So he walked down on the planet a bit and he came to a pit. There was just water in it. Then he went back up to the spaceship and the spaceship passed the sun, a sun. And the sun became the focal point. And the ship disappeared in the distance. And then the sun disappeared.

S21

Background Summary: S21 was a 29 year old male graduate student majoring in English. His impasse concerned an inability to pose a question or generate a theme for his dissertation on medieval literature.

At the time of the follow-up interview, S21 reported that he had developed a theme for his dissertation, the lyrics of mysticism. He credited this to the progression of dreams in the treatment session in which the content went from highly anxiety-arousing to very pleasant. This progression told S21, "Maybe if you get off your ass and do something about it, you'll have a pleasant life like this one." Here he was referring to the third dream in which he felt he stood in a newly adopted relationship with his dissertation. He now views it as a "career goal rather than something intimidating and mysterious." S21 felt fully satisfied with the theme he developed and the treatment was scored successful.

Dream 1

The Elements: I can't see everything because there's so much. But I can see all the poems on the page and innumerable vignettes, images from the poems. And I can see, uh, the writers, the, uh, church fathers. And their books. I can't, uh, they're separate. That is the mystical writings and the poems. I tend to see them as words printed. And poetics. I can't imagine poetics. But I see

like, uh, set pieces in a very rustic tableau. Like from the beginning of Canterbury Tales or any springtime romance. So they all come together there but it's a very remote, abstract imaginary sort of landscape. The things, the books, the printed words ought to generate I can't quite grasp. They tease. The harder I try and think about them the more they become words on a page.

The Dream: There was a figure. It looked like any sort of conventional sanctified figure on a holy card with long robes surrounded by an aura. And it drifted backwards. And then it became distinctly male and clerical. It looked something like a Mandarin or the famous picture of Chaucer. And then it was just in a (mumbled) an expectant, inviting look. Then he sort of, he just faded out, away and up. And I was in a . . . room with a man seated at a table. It was a medieval scene or at least primitive. It looked like the room that . . . wasn't Jotteau, it was someone else famous. The painting of St. Francis receiving the stigmata. That room behind him was a sort of cave. A big inclined table. I was looking over the edge of the table into the face of the man on the other side who had a very large bald head. He was reading. He looked up from his reading and looked to me . . . very patiently. So he weren't surprised to see me there. He was just waiting for me. Sort of looked and said, "Now did you want something." Then I just looked at him. We looked in each other's eyes. He had pale blue eyes. A very hairless face. It had for a period of time.

Then he looked down at his book again and kept reading. And then it just faded out.

Dream 2

The Elements: It's a, I see the books again. They're not specific books. It's like the laid on glass, on the other side of the glass, stylized medieval May. And then there are a lot of images. They don't come together coherently. They come in sequence. I see (mumbled) head of the University of Paris in 12th century. I have no idea what it must have looked like. I just have an idea of what it must have looked like. I think of that just sort of medieval campus scene. I think of the landscape that always comes with the cloud of unknowing. Just an English landscape. And the poetics, I keep thinking, those poetics. It's just a word. Something, something more wants to come of it. It's just, it's autumnal. And it's like the word 'stant' (sp.?) there in Roman in caps. But . . . elements, I hate elements. Yes . . . I think of the author of The Cloud. He's always sitting in a small building. And he's looking out at a direction that I know is southwest, that's toward the channel. But he can't see any water or anything. But he's looking out that way and speaking. And nobody's there. And the landscape is like a medievalized Wyeth painting. And he's speaking and there's the sense of tranquility and uncompromising simplicity. I can never see his face. It's like I'm sitting next to him and we're

staring in the same direction. There's all these words. Always seem to be in the air. It's like he speaks them and they get written in the air. When I think of dissertation, it's just a momentary organization. Books. Something golden like the (mumbled) paintings. There's things scattered there. Words and I can't, I can't make them relate. It just gets so diffuse, sequential, associations. They don't go anywhere. Not at the same time. The Dream: It's almost nothing. Just that figure came again. Only he's less, less medieval. He was just a man in robes, a good old modern caftan. And he looked younger. And he just beckoned come down a corridor. Kind of tall. I came out the other end over a city. It's very light, bright . . . and gold. And I just stood there above it, looking. And then it faded out.

Dream 3

The Elements: Again the first thing is a book. Only now it's on a table, inclined like dictionaires sometimes are. It's a library and it looks like the Lowell House library. Or that kind of library. Very Georgian and elegant. And Edie is standing a little way, looking at me right in front of the book. It's like it's one color of the library. Where my books are. And I know that they're the ones that I need. And it's over there. And I have a sense of it. Suddenly I see what enterprise, what scholarly endeavor, what work to be done. That's all.

The Dream: It was a country road, dirt road lined by very tall trees. And mainly pasture on either side. It was either stone walls or hedge rows, I don't know which. But it was a beautiful, beautiful spring day. And it was cool. And the sunlight was bright. Shade in the trees. And I was walking with a woman and we just both felt very full and content. And there's that sense of brightness, of clarity of the context of the textures, the contrast of it. Textures. The skin on her neck and the collar was, the white cotton next to it was one of those things that was incredibly vivid. It, you could perceive every layer of depth. And the most minute and proximate detail to infinity. And we walked to a house in a garden. It was our house, I knew. It was a place with lots of sunlight, white winds coating window jams. And I went into my study there and it was bright. And the sun coming through the windows cast shadows of every pane, every molding of the panes across the rug and the furniture. And just an overwhelming sense of contentment and fruition and excitement. But not frantic excitement. Just the excitement of full moments, of feeling things are worthwhile. I was working. A sense of worth and contentment, appreciation. I just sat there and looked out the window at the garden. That's it.

S23

Background Summary: S23 was a 23 year old male graduate student who was attempting to devise a technique to measure certain animal parameters in vivo. Specifically, he wished to measure a hormone in a brain artery but this seemed impossible at the time of the treatment session.

At the time of the follow-up interview, S23 reported that he had been unable to overcome the impasse. However, he requested a transcript of the treatment session, feeling that he might be able to use this potentially valuable material if only he could remember it. A transcript has been recently delivered with the agreement that S23 will report any change in the status of his problem. The treatment was scored not successful.

Dream 1

The Elements: It's very anatomical. The hypothalamus part of the brain with its neurons emptying into a capillary bed. This capillary bed then flows down to the pituitary gland. The hypothalamus, made up of individual cells, is producing neurohormones which are released into these capillaries. The neurohormones then flow through the capillaries down into the pituitary where they then again cross the capillary wall at, upon the pituitary cells. All these things are in my, I see them but a little bit different than I would ordinarily see them, again based on what I've been taught.

The Dream: Well, I imagined the same anatomies that I just described only in quite distorted imagery. A great deal of dashing elements, seemingly symbolic of the hormones going from the brain portion, hypothalamus, to the pituitary with unusual speed. Throughout the time, I imagined different thoughts I've had over a period of time as to how I may be able to solve this problem. But none of them seemed to be more likely than before. And then, when the ten count began, I visualized this onslaught of streaking dashes to increase in density and to almost seem to increase in velocity, as if to all dash across by the count of ten. And then at the count of ten everything more or less stood still.

Dream 2

The Elements: It's a, not really the anatomy that I described earlier but evidently a symbolic resemblance and, well at least a resemblance. And it is a vision of the western hemisphere of the Earth. Evidently the a, North America symbolizing the hypothalamus which they both somewhat resemble the shapes somewhat, part of the area of Central America being the capillary system I just described leading down to the pituitary which I guess is, which resembles what I see as South America which again is a very shocking resemblance. I don't see at all the biological picture.

The Dream: It began as I pictured the northern portion of South America. And again elements which were not distinct,

but certainly not the dashed, fast lines of the prior dream. Elements were moving in a northerly direction or, more correctly around the Gulf area from the northeast protion of South America up around the Gulf up into the Central America area presumably then dispersing into the United States, the United States area at least. It was a slow motion and I guess the idea or the impression was that these moving objects were persons. Then I perceived a very nondescriptive, somewhat of a, possibly a black X or a flare of some sort approximately in the Louisiana-Mississippi southern area. Just a, just a kind of a rash over this area that I suppose somewhat distorted the picture. That's about it.

Dream 3

The Elements: It's a, not a silhouette, but just a three dimensional or superficial image of this hypothalamic-pituitary axis that I described with a structure between them containing capillaries. I, once in a while I note the redness of the capillaries. They appear as much thicker vessels than I know they must be. Every once in a while, just a flash of cutaways of those tissues, as if a slice has been taken out of it, as in a pie so like I'm seeing the whole structure for the most part. There's a triangular slice taken out where I can look in and see the cytology of the hypothalamus and the pituitary.

The Dream: Well, obviously my choice of words seem to suggest to me in describing the slice-outs as pieces of pie, I envisioned blackbirds coming to peck at the, these tissues . . . whatever blackbirds have to do with pie. Anyway, they were unable to diminish it at all it seems, until I realized in fact that they hadn't diminished it. And then it seemed as though it somewhat disintegrated from the pituitary upward, leaving a shambled hypothalamus remnant. But then just this picture remained for a while until I then saw a sunset, a quite beautiful sunset which blocked out the picture of the tissue. And after the sun had set I then saw a view from above some clouds, looking down upon these clouds as if in an airplane climbing over the clouds. A quite attractive sight. Then things got dark as the night. I pictured briefly the other visions that I previously described from other dreams. And that was it.

S34

Background Summary: S34 was a 32 year old female insurance claims executive and free-lance poet with three prior publications to her credit. Recently she had been unable to write anything satisfactory and wished to overcome this impasse.

The the time of the follow-up interview, S34 reported that she had experienced nocturnal dreams during the two nights following the treatment session. These dreams, which were pleasant, in conjunction with imagery produced during the treatment session, led her to feel that her "creativity was being stimulated" until she began to experience nightmares which seemed to reimpose a block on her creative expression. She was unable to recall the content of these nightmares. However, since they "caused anxiety which seemed to thwart my creativity" the treatment was scored not successful.

Dream 1

The Elements: It's a large card. It's a large, like a playing card. It's very shiny. It has a picture on it. The picture is a blue sky with very thin clouds. It's very cold.

The Dream: It was a man, or, it was a man in a knight's suit, or a knight on a horse. It was a flat plain. And the knight had a sword and there was an ornate blanket on the horse. And this figure was making jerking movements back and forth. And a sun was at the horizon and the sun

was doing the same thing. The sun was moving from one side of the horizon to the other. And the man was confused . . . When you said that it had to end, I tried to decide how it should end. It's a very sad picture, so I stopped.

Dream 2

The Elements: It's the card again only there's a sun behind the clouds in the right hand corner.

The Dream: I took a tall glass, a tumbler, and I had one of those Japanese toys that is a shell, or two shells glued together with paper flowers and I took the shell and I dropped it in the glass of water. And I watched the shells open and watched all the flowers float to the top. And watched the bubbles in the glass. And then I drank the water.

Dream 3

The Elements: I see a very straight middle-class lady's face. And I smelled dust, stuffiness. Like a meeting. It has to do with people. It's not, it's an unpleasant smell but it isn't meant to be. It's a very ordinary smell. Like this middle-class lady, she's very comfortable with that smell.

The Dream: I was looking at this, at earth and I could see underneath. And there was this clump of carrots growing. And they were growing one at a time. And they were kind of, they were synchronizing. And they were making room for each other as they were growing. And they were nudging

and pushing against each other and they were brilliant orange. And they had a big bright green top, green tops. And as they pushed into the ground they would move and they sort of clasped like . . . like hands. And then all of a sudden there was a large tree. Well, it was a drawing of a tree. But all the leaves were in the shape of a huge ball and the very oak tree with very thick branches and very big. And all of a sudden there was this big oak tree there. The sky is very black and again it's a very flat horizon. Very flat terrain. That's it.

APPENDIX B

DISPLAY ADVERTISEMENT

APPENDIX B

RESEARCH ON
ENHANCING
CREATIVITY

Participants need to have reached an impasse on some problem or project. Call Bob Davé at 4890734 or 8829780 between 8 and 10 P.M.

APPENDIX C

IT'S WHAT'S HAPPENING COLUMN

APPENDIX C

Participate in research on enhancing creativity. Participants need to have reached an impasse on some problem or project. Leave name and phone number in envelope outside 113 Olds Hall.

APPENDIX D

LETTER TO GRADUATE STUDENTS

APPENDIX D

Greetings,

My apologies for the impersonal nature of this letter. I am a graduate student here in clinical psychology, and I am conducting research on enhancing creativity. More specifically, I am testing the effectiveness of several methods to facilitate one's ability to overcome an impasse or "mental block" which is encountered in the course of working on a problem or project. This encompasses a wide range of academic, professional, avocational, and personal concerns, from difficulty creating imagery for a poem to problems resolving a conflict between husband and wife.

My purpose in writing this letter is to invite interested persons to participate in this research. The amount of time requested of participants is a maximum of two hours. The only requirements are:

1. that you are currently working on a problem or project; and
2. that you are "stuck" in any way, shape, or form which prevents you from reaching a satisfactory solution to that problem or from completing that project.

If you wish to participate, or simply have questions, please call me at 489-0734 or 882-9780* any weeknight between 8:00 and 10:00 P.M. Thanks for reading this.

Sincerely,

Bob Davé

* After August 7, call 394-2922.

APPENDIX E

DEPARTMENTAL RESEARCH CONSENT FORM

APPENDIX E

Michigan State University
Department of Psychology

DEPARTMENTAL RESEARCH CONSENT FORM

1. I have freely consented to take part in a scientific study being conducted by: Robert Davé

   under the supervision of: Dr. Joseph Reyher

   Academic Title: Professor, Dept. of Psychology

2. The study has been explained to me and I understand the explanation that has been given and what my participation will involve.

3. I understand that I am free to discontinue my participation in the study at any time without penalty.

4. I understand that the results of the study will be treated in strict confidence and that I will remain anonymous. Within these restrictions, results of the study will be made available to me at my request.

5. I understand that my participation in the study does not guarantee any beneficial results to me.

6. I understand that, at my request, I can receive additional explanation of the study after my participation is completed.

Signed_____

Date_____

APPENDIX F

AUDIO TAPE RECORDING RELEASE FORM

APPENDIX F

CIG Misc. 74-32

Audio and/or video playback of clients or research subjects

Whenever audio and/or video tape of clients may be viewed by persons other than those directly involved in the taping and service delivery to the client, a release form of the type shown below is to be used. If the material is to be used in research and/or teaching the client must be so informed and his/her written consent obtained using the Departmental Consent Form and a release form of the type shown below. In addition, the parental consent form is to be used when children are involved.

RELEASE

I, _____, hereby agree to permit films, kinescopes, videotape recordings, photographs or audiotape recordings portraying and depicting psychological interviews in which I appear to be used for demonstration and instructional purposes and for duplication for up to 20 years from the date noted below. I understand that I may withdraw my permission for use of these materials in general, or for any specific purpose or situation, at any time, by making a written request to Michigan State University or the Department of Psychology. I understand that the confidentiality of the material presented will be protected. I likewise authorize Michigan State University to use such materials so prepared for exhibition purposes with professional psychology groups and to permit the right of use to other parties for such purpose so long as they also agree to protecting the confidentiality of the material.

The materials recorded by the processes noted above will be stored and protected as confidential material by the researcher or therapist. The specific method for maintaining confidentiality and storage are determined by the professional supervisor and the student. When the materials are no longer useful for demonstration, instructional, or research purposes, or at my written request, they will be withdrawn from use, mechanically erased, or destroyed.

Signed: _____

Date: _____

Witness: _____